MINNESOTA METADATA GUIDELINES FOR DUBLIN CORE METADATA

Training Manual

http://bridges.state.mn.us/bestprac/training.pdf

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I. What Is Metadata?

Metadata describes an information resource. The term *meta* derives from the Greek. It means "denoting a nature of a higher order or more fundamental kind," such as *meta*language or *meta*theory. *Meta*data, then, is data about other data.

A metadata record consists of a set of attributes, or elements, necessary to describe a resource. For example, a metadata system common in libraries -- the library catalog -- contains a set of metadata records with elements that describe a book or other library item: author, title, date of creation or publication, subject coverage, and the call number specifying location of the item on the shelf.

The linkage between a metadata record and the resource it describes may take one of two forms:

a. the metadata may be embedded in the resource itself; or
b. elements may be contained in a record separate from the item, as in the case of the library's catalog record.

Examples of embedded metadata that is carried along with the resource itself include the Cataloging In Publication (CIP) data printed on the verso of a book's title page and the Text Encoding for Interchange (TEI) header in an electronic text. Many metadata standards in use today, including the Dublin Core standard, do not prescribe either type of linkage, leaving the decision to each particular implementation.

Although the concept of metadata predates the Internet and the Web, worldwide interest in metadata standards and practices has exploded with the increase in electronic publishing and digital libraries, and the concomitant "information overload" resulting from vast quantities of undifferentiated digital data available online. Anyone who has attempted to find information online using one of today's popular Web search engines has likely experienced the frustration of retrieving hundreds, if not thousands, of hits with limited ability to refine or make a more precise search. The wide scale adoption of descriptive standards and practices for electronic resources will improve retrieval of relevant resources from the Internet commons. As noted by Weibel and Lagoze, two leaders in the field of metadata development:

The association of standardized descriptive metadata with networked objects has the potential for substantially improving resource discovery capabilities by enabling field-based (e.g., author, title) searches, permitting indexing of non-textual objects, and allowing access to the surrogate content that is distinct from access to the content of the resource itself. (Weibel and Lagoze, 1997)

II. What is the Dublin Core?

The Dublin Core metadata standard is a simple yet effective element set for describing a wide range of networked resources. The Dublin Core standard comprises fifteen elements, the semantics of which have been established through consensus by an international, cross- disciplinary group of professionals from the scholarly fields of librarianship, computer science, text encoding, museum and archive management, among others.

Dublin Core has as its goals the following characteristics:

- *Simplicity of creation and maintenance*

  The Dublin Core element set has been kept as small and simple as possible to allow a non-specialist to create simple descriptive records for information resources easily and inexpensively, while providing for effective retrieval of those resources in the networked environment.

- *Commonly understood semantics*

  Discovery of information across the vast commons of the Internet is hindered by differences in terminology and descriptive practices from one field of knowledge to the next. The Dublin Core can help the digital tourist -- a non-specialist searcher -- find his or her way by supporting a common set of elements, the semantics of which are universally understood and supported. For example, scientists concerned with locating articles by a particular author, and art scholars interested in works by a particular artist, can agree on the importance of a CREATOR element. Convergence on a common, if slightly more generic element set, increases the visibility and accessibility of all resources, both within a given discipline and beyond.

- *International scope*

  Although the specific linguistic challenges of the Web have not been directly addressed by the Dublin Core development community, the involvement of representatives from almost every continent has ensured that the development of the standard considers the multilingual and multicultural nature of the electronic information universe.

- *Extensibility*

  While balancing the needs for simplicity in describing digital resources with the need for precise retrieval, Dublin Core developers have recognized the importance of providing a mechanism for extending the DC element set for additional discovery needs. Other communities of metadata experts will create and administer additional metadata sets. Metadata elements from these sets could be linked with Dublin Core metadata to meet the need for extensibility. This model allows different communities to use the DC elements for core descriptive information which will be usable across the Internet, while allowing domain specific additions which make sense within a more limited arena.

III. Using HTML to Embed Metadata

The Dublin Core examples presented in this guide are in HTML, the Web's Hypertext Markup Language format, and in a generic form (Element = "value"). HTML provides an easily understood format for demonstrating Dublin Core's underlying concepts. It is important to note, however, that Dublin Core concepts are equally applicable to virtually any file format, as long as the metadata is in a form suitable for interpretation both by search engines and by human beings.

HTML has two tags that can be used to capture metadata. These are the <META> and <LINK> tags. When creating metadata that will be embedded in, or appear alongside, an actual document these tags must appear within the <HEAD> section of the HTML document. For example:

```
<HTML>
<HEAD>
<TITLE>Mating Habits of the Northern Hairy Nosed Wombat</TITLE>
<META NAME= "DC.Creator" CONTENT="Smythe, Pearl">
</HEAD>
<BODY>
<H1>Northern Hairy Nosed Wombats</H1>
<P>
The Northern Hairy Nosed Wombat is an animal native to Australia....</P>
</BODY>
</HTML>
```

Search engine programs understand that the metadata record starts after the <HEAD> line and ends before the </HEAD> line, and are thus able to extract metadata automatically. The metadata does not appear during normal document formatting or printing, and metadata-aware Web browsers may even be able to exploit it. Several popular current search engines now make use of the HTML <META> tag in Web documents. In HTML, each record element definition begins with a "<META" tag, and ends with ">." Within the META tag, two attribute/value pairs (as found in other HTML tags) are used to define the metadata. The first is NAME, the second, CONTENT. These two work together to define the metadata within the META tag.

Below are some examples of how the META tag might be used in stand-alone and

embedded metadata. Note that each metadata definition happens to fit on one line, but in general a definition can span several lines.

2. Metadata Contained in a Resource

This example is of a metadata record contained in a file alongside the document that it describes. The document is a short poem expressed in HTML.

```
<HTML>
<HEAD>
<TITLE>Song of the Open Road</TITLE>
<meta name="DC.Title" CONTENT="Song of the Open Road">
<meta name="DC.Creator" CONTENT="Nash, Ogden">
<meta name="DC.Type" CONTENT="e/document">
<meta name="DC.Date" CONTENT="1939">
<meta name="DC.Format" CONTENT="text/html">
<meta name="DC.Identifier"
CONTENT="http://www.poetry.com/nash/open.html">
</HEAD>
<BODY><PRE>
I think that I shall never see
A billboard lovely as a tree.
Indeed, unless the billboards fall
I'll never see a tree at all.
</PRE></BODY>
</HTML>
```

3. Stand-Alone Metadata

Stand-alone metadata can exist in any kind of database. This example describes a photograph in another file that has a location given by a Uniform Resource Locator (URL). The entire record file looks like this:

```
<meta name="DC.Title" CONTENT="Kita Yama (Japan)">
<meta name="DC.Creator" CONTENT="Kertesz, Andre">
<meta name="DC.Date" CONTENT="1968">
<meta name="DC.Type" CONTENT="e/photograph">
<meta name="DC.Format" CONTENT="image/gif">
<meta name="DC.Identifier" CONTENT="http://foo.bar.zaf/kertesz/kyama">
```

A. Basic Principles of Descriptive Elements

The notation (one of several) described in this guide is based on the HTML META tag. If non-ASCII characters are required, use the same conventions as in the body of the document. For example:

<meta name="DC.Title" CONTENT="Les biscuits à la banane">

Each element is optional and repeatable. Metadata elements may appear in any order. The ordering of multiple occurrences of the same element (e.g., CREATOR) may have a significance intended by the provider, but ordering is not guaranteed to be preserved in every user environment.

1. Element Parts and Syntax

As demonstrated above, each descriptive element definition has a NAME attribute and a CONTENT attribute, as in:

<meta name="DC.Creator" CONTENT="Browning, Elizabeth">

Any metadata element may be omitted or repeated. When repeating elements, it is recommended best practice to list each element definition separately, as in:

<meta name="DC.Creator" CONTENT="Marx, Karl">
<meta name="DC.Creator" CONTENT="Engels, Friedrich">

However, it is also valid to express repeated elements using a single NAME attribute with multiple semi-colon delimited values for the CONTENT attribute, as in:

<meta name="DC.Creator" CONTENT="Marx, Karl ; Engels, Friedrich">

"A Proposed Convention for Embedding Metadata in HTML," agreed upon a convention for identifying and grouping metadata schemes in HTML. This convention relies on the use of a prefix to indicate that the elements used are from Dublin Core or another metadata scheme. For increased readability, the prefix "DC." should be written in upper case letters and element names

should be capitalized. For example:

meta name="DC.Title"
meta name="DC.Creator"
NOT DC.CREATOR or dc.CREATOR or DC.creator

2. Element Content and Controlled Vocabularies

Content data for some elements may be selected from a controlled vocabulary, which is a limited set of consistently used and carefully defined terms. This can dramatically improve search results because computers are good at matching words character by character but weak at understanding the way people refer to one concept using different words, i.e. synonyms. Without basic terminology control, inconsistent or incorrect metadata can profoundly degrade the quality of search results. For example, without a controlled vocabulary, "candy" and "sweet" might be used to refer to the same concept. Controlled vocabularies may also reduce the likelihood of spelling errors when recording metadata. The Foundations Project developed an interactive controlled-vocabulary thesaurus to enhance search results, based on the Library of Congress Legislative Indexing Vocabulary (LIV). It is referred to below as LIV-M.N.

B. The 15 Core Elements

This section lists each Core element by its full name and label. For each element there is a reference description (taken from the RFC) and there are guidelines to assist in creating metadata content, whether it is done from scratch or by converting an existing record in another format.

The elements are listed in the order they were developed, but there are other useful ways to group them. In the following table, you can see that some elements relate to the content of the item, some to the item as intellectual property, still others to the particular instantiation, or version, of the item.

Content	**Intellectual Property**	**Instantiation**
COVERAGE	CONTRIBUTOR	DATE
DESCRIPTION	CREATOR	FORMAT

TYPE	PUBLISHER	IDENTIFIER
RELATION	RIGHTS	LANGUAGE
SOURCE		
SUBJECT		
TITLE		

In the element descriptions below, a formal single-word label is specified to make the syntactic specification of elements simpler for encoding schemes. Although some environments, such as HTML, are not case-sensitive, it is recommended best practice always to adhere to the case conventions in the element names given below to avoid conflicts in the event that the metadata is subsequently converted to a case-sensitive environment, such as XML/RDF.

Some information may appear to belong in more than one metadata element. While there will normally be a clear preferred choice, there is potential semantic overlap between some elements. Consequently, some judgment is required from the person assigning the metadata.

Minimum DC elements: TITLE, SUBJECT(s), DESCRIPTION, DATE(s) (creation, modified)
Highly desirable elements: CREATOR, PUBLISHER, TYPE, FORMAT, LANGUAGE

TITLE

Element description: The name given to the resource by the CREATOR or PUBLISHER.

Guidelines for creation of content:
If in doubt about what constitutes the title, repeat the TITLE element and include the variants in second and subsequent TITLE iterations. If the item is in HTML, view the source document and make sure that the title identified in the title header is also included as a meta TITLE (unless the DC metadata element is to be embedded in the document itself). First TITLE comes from meta title, viewed in source codes, also at top of screen in Netscape. See section **C** for **Punctuation**.

Second TITLE comes from the web page itself; subsequent TITLEs, if necessary, are expansions or portions of previous TITLEs. Skip beginning articles.

Examples:

<meta name="DC.Title" CONTENT="Pilot's Guide to Aircraft Insurance">
<meta name="DC.Title" CONTENT="Sound of Music">

<meta name="DC.Title" CONTENT="Green on Greens">

<meta name="DC.Title" CONTENT="AOPA's Tips on Buying Used Aircraft">

Schemes:

Internal

Not part of an external coding system.

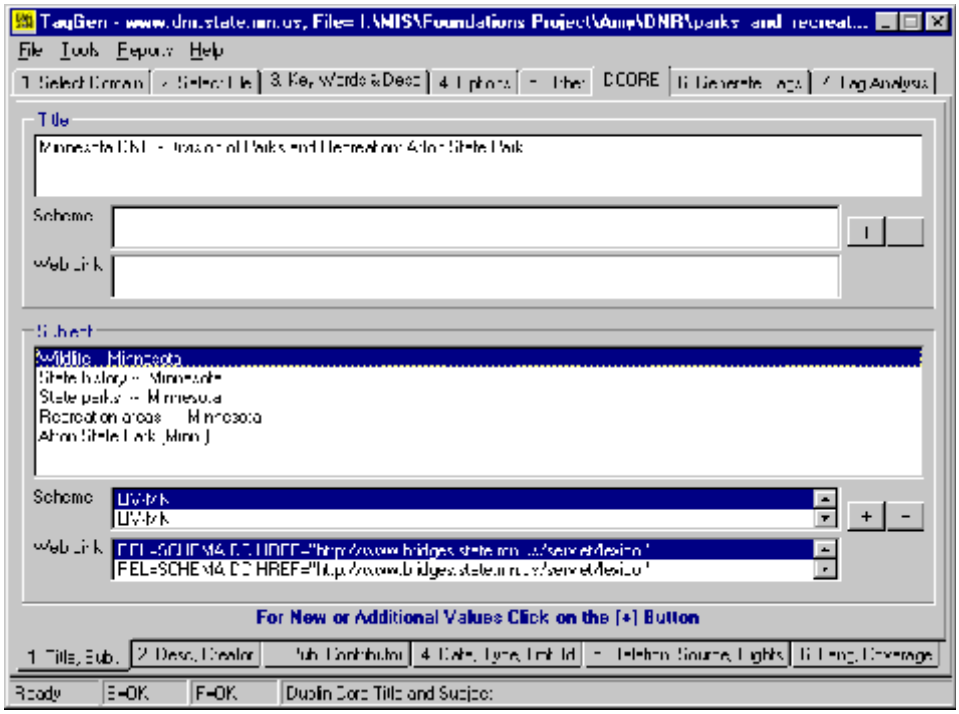
AACR2

TITLE is devised according to the Anglo-American Cataloging Rules, 2nd edition. This is really only useful for uniform titles, where the title derives from another form of the item.

Modifiers: None.

Web links: Pointer to web site of TITLE authority record, an online record containing the correct, or uniform title according to AACR2 as determined by the Library of Congress or LC-authorized library, in cases where differing versions exist.

TagGen screen shot:



TagGen TITLE and SUBJECT data entry screen

SUBJECT and **KEYWORDS**

Element description: The topic of the resource. Typically, the subject will be expressed as keywords or phrases that describe the subject or content of the resource. Best practice is to select a term from a controlled vocabulary.

Guidelines for creation of content:

Select subject terms from either the TITLE or DESCRIPTION information. If the subject of the item is a person or an organization, use the same form of the name as you would if the person or organization were a CREATOR, but do not repeat the name in the CREATOR element.

When using keywords, choose the most significant and unique terms, avoiding those too general to describe a particular item. This element might well include classification data (for example, Library of Congress Classification Numbers or Dewey Decimal numbers) or controlled vocabularies (such as Medical Subject Headings or Art and Architecture Thesaurus descriptors) as well.

For meta keywords, add one or two precise subjects from LIV-MN, no subheads unless it's nonsense without them, in which case add one level only, never repeating the same subhead for the next meta keyword.

Example:

```
<meta name="keywords" content="Foundations Project (Minn.), Environmental
 research">
```

For DC SUBJECT element, keep the one or two precise subjects from LIV-MN and expand with subheads as necessary. **Rarely use keywords**. If LIV-MN is insufficient, recommend a term to the thesaurus editor via e-mail, including the URL for page being cataloged. See section **C** for **Punctuation**.

Examples:

```
<LINK REL=SCHEMA.DC HREF="http://www.bridges.state.mn.us/servlet/lexico">
<meta name="DC.Subject" scheme="AACR2" content="Foundations Project (Minn.)">

<LINK REL=SCHEMA.DC HREF="http://www.bridges.state.mn.us/servlet/lexico">
<meta name="DC.Subject" scheme="LIV-MN" content="Environmental research --
 Minnesota">
```

Schemes:

Keyword

Not part of an external coding system.

AACR2

Corporate subject headings created according to Anglo-American Cataloging Rules, 2nd edition.

AAT

Art and Architecture Thesaurus

LCC

Library of Congress Classification

LCSH

Library of Congress Subject Headings

LIV-MN

Legislative Indexing Vocabulary - Minnesota edition

MESH

National Library of Medicine Subject Headings

Modifiers: None.

Web links: Pointer to SUBJECT authority.

For LIV-MN the web link is:

REL=SCHEMA.DC HREF="http://www.bridges.state.mn.us/servlet/lexico"

Examples:

<meta name="DC.Subject" CONTENT="Aircraft leasing and renting">

<meta name="DC.Subject" CONTENT="Olympic skiing"

<meta name="DC.Subject" scheme="LIV-MN" content="Agronomy -- Minnesota">

DESCRIPTION

Element description: A textual description of the content of the resource, including abstracts in the case of document-like objects or content descriptions in the case of visual resources.

Guidelines for creation of content:

Since the description field is a potentially rich source of indexable vocabulary, care should be taken to provide this element when possible. Some metadata collections could include content descriptions (spectral analysis of a visual resource, for example) that current network systems may not be able to embed. In such a case, this field might contain a link to a description rather than the description itself.

Descriptive information can be taken from the item itself if there is no abstract or other structured description available. If a description cannot be found in the introductory or front matter, or in the first few paragraphs of a page, it may be created by the metadata provider. A DESCRIPTION should usually be limited to one or two concise sentences. Include important keywords, not necessarily terms from the thesaurus. Look at the title of the page as well as the entire page to get the sense of its purpose.

Schemes: None.

Modifiers:

Abstract – use only if page provides a formal abstract or something that fills that role.

Table of Contents

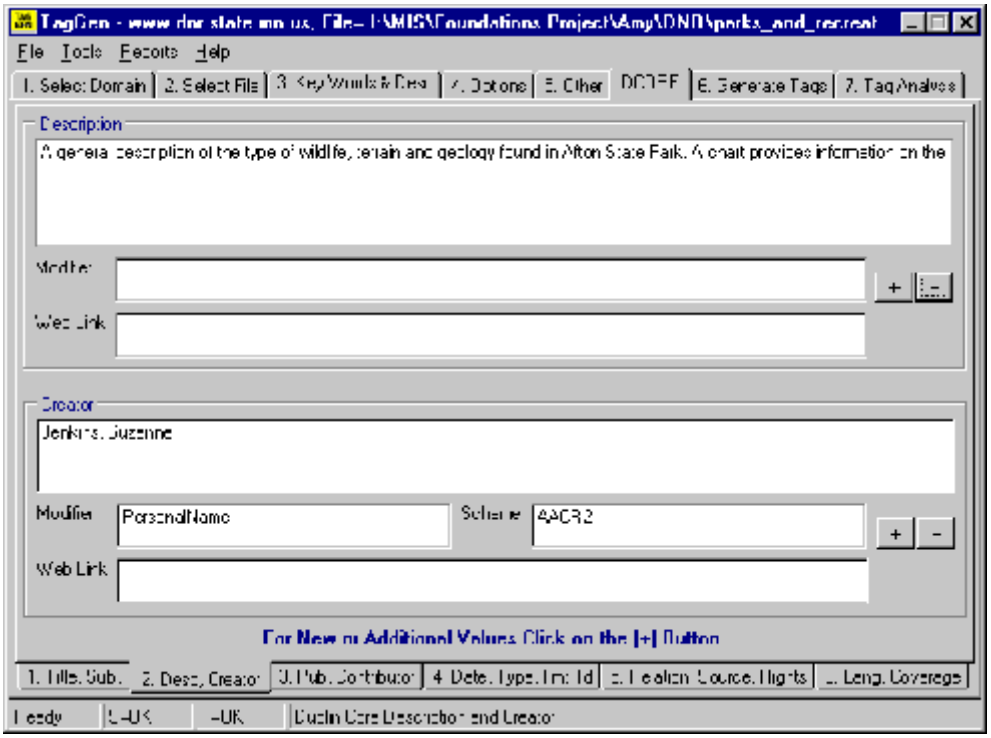
Web links: Pointer to a more detailed external DESCRIPTION.

Example:

<meta name="DC.Description" CONTENT="Illustrated guide to airport markings and lighting

signals, with particular reference to SMGCS (Surface Movement Guidance and Control System) for airports with low visibility conditions.">

TagGen screen shot:



TagGen DESCRIPTION and CREATOR data entry screen

CREATOR

Element description: The person or organization primarily responsible for creating the intellectual content of the resource. For example, authors in the case of written documents, artists, photographers, or illustrators in the case of visual resources.

Guidelines for creation of content:

CREATORS should be listed separately in the same order that they appear in the publication. Personal names should be listed surname or family name first, followed by forename or given name. When in doubt, give the name as it appears, and do not invert. Follow Library of Congress interpretation of AACR2 as identified in their authority records for form of corporate entity. This includes spelling out state name and abbreviating Dept.

Schemes:

Internal

The information provided is not part of an external coding system.

AACR2

Format according to Anglo-American Cataloging Rules, 2nd edition.

Modifiers:

Corporate name

Corporate entity which created the resource.

Personal name

Person who created the resource.

Web links: Pointer to authority record for CREATOR.

Examples:

<meta name="DC.Creator" CONTENT="Duncan, Phyllis-Anne">
<meta name="DC.Creator" CONTENT=" Melendez Santiago, Maria Luz ">
<meta name="DC.Creator" CONTENT=" Maimonides ">

BUT

<meta name="DC.Creator" CONTENT="Park Sung Hee">

In the case of organizations where there is clearly a hierarchy present, list the parts of the hierarchy from largest to smallest, separated by full stops.

Example:

<meta name="DC.Creator" CONTENT="United States. Internal Revenue Service"
<meta name="DC.Creator" CONTENT="Federal Aviation Administration. Aviation Safety Program.">

NOT

<meta name="DC.Creator" CONTENT="Aviation Safety Program of the Federal Aviation Administration">

If it is not clear whether there is a hierarchy present, or unclear which is the larger or smaller portion of the body, give the name as it appears in the item.

<meta name="DC.Creator" CONTENT="Art Institute of Chicago">
<meta name="DC.Creator" CONTENT="Association of the Bar of the City of New

York"
<meta name="DC.Creator" CONTENT="Baltimore County Medical Society"

If the nature of the responsibility is ambiguous, the recommended practice is to use PUBLISHER for organizations, and CREATOR for individuals. In cases of lesser responsibility, other than creation, use CONTRIBUTOR.

PUBLISHER

Element Description: The entity responsible for making the resource available in its present form, such as a publishing house, a university department, or a corporate entity.

Guidelines for content creation:
The intent of specifying this field is to identify the entity that provides access to the resource. If the CREATOR and PUBLISHER are the same, do not repeat the name in the PUBLISHER area. If the nature of the responsibility is ambiguous, the recommended practice is to use PUBLISHER for organizations, and CREATOR for individuals. In cases of lesser responsibility, other than creation, use CONTRIBUTOR. Follow Library of Congress interpretation of AACR2 as identified in their authority records for form of corporate entity. This includes spelling out state name and abbreviating Dept.

Schemes:

Internal

The information provided is not part of an external coding system.

AACR2

Format according to Anglo-American Cataloging Rules, 2nd edition.

Modifiers:

Corporate name

Corporate entity which created the resource.

Personal name

Person who created the resource.

Schemes: Pointer to authority record for CREATOR.

Examples:

<meta name="DC.Publisher" CONTENT="Moguls Anonymous">
<meta name="DC.Publisher" CONTENT="University of Miami. Dept. of Economics"
<meta name="DC.Publisher" CONTENT="Minnesota Dept. of Natural Resources"

CONTRIBUTOR

Element Description: A person or organization not specified in a CREATOR element who has made significant intellectual contributions to the resource but whose contribution is secondary to any person or organization specified in the CREATOR element (for example, editor, transcriber, and illustrator).

Guideline for content creation:
The same general guidelines for using names of persons or organizations as CREATORs apply here. Follow Library of Congress interpretation of AACR2 as identified in their authority records for form of corporate entity. This includes spelling out state name and abbreviating Dept.

Schemes:

Internal

The information provided is not part of an external coding system.

AACR2

Formatting according to Anglo-American Cataloging Rules, 2nd edition.

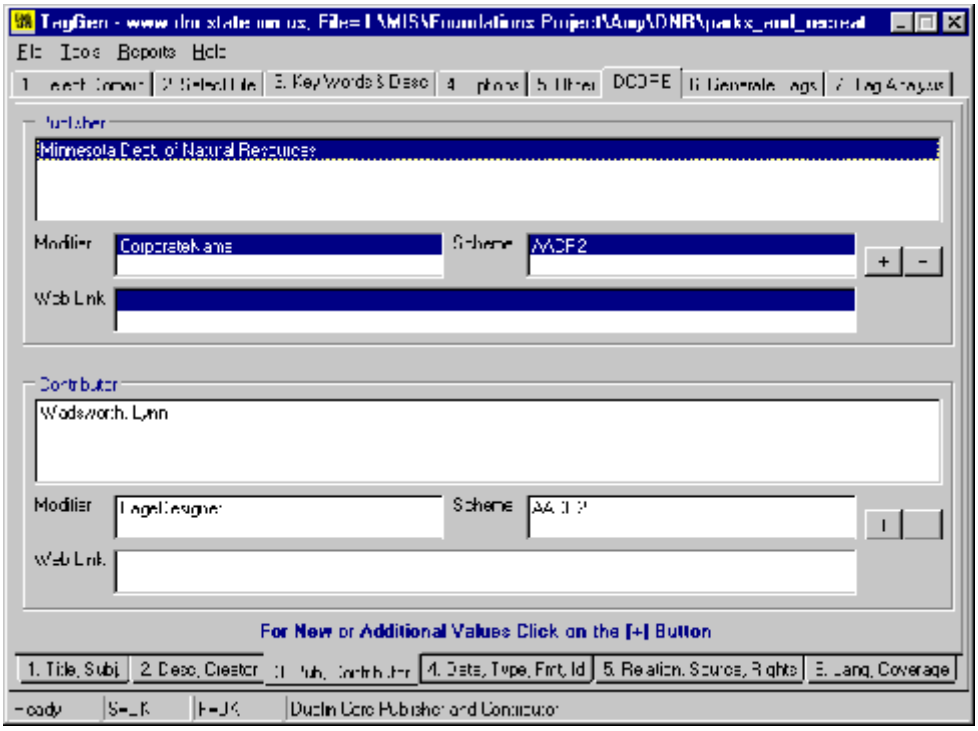
Modifiers: See TagGen DC tables for full listing

Page designer

Illustrator

Web links: Pointer to authority record.

TagGen screen shot:



TagGen PUBLISHER and CONTRIBUTOR data entry screen

DATE

Element Description: A date associated with the creation or availability of the resource. Such a date is not to be confused with one belonging to the COVERAGE element, which would be associated with the resource only insofar as the intellectual content is somehow about that date. Recommended best practice is defined in a profile of ISO 8601 [Date and Time Formats (based on ISO 8601), W3C Technical Note http://www.w3.org/TR/NOTE-datetime] that includes (among others) dates of the forms YYYY and YYYY-MM-DD. In this scheme, the date 1994-11-05 corresponds to November 5, 1994.

Guidelines for content creation:
Dates on the page have top priority. If there is both a creation date and last modified date, put both on the record, with appropriate modifiers. If there is only one of these dates, use it only.

Examples (shown in html, but chosen from TagGen pull-down menus):

<meta name="DC.Date.Creation" scheme="ISO 8601" content="1997-11-20">
<meta name="DC.Date.Modified" scheme="ISO 8601" content="1998-06-10">

If there is a copyright date of a year only, use the CREATION modifier with double zeroes for the month and day.

Example:

<meta name="DC.Date.Creation" scheme="ISO 8601" content="1998-00-00">
Use the Current modifier only if there are no dates on the page, putting today's date there.

Example:

<meta name="DC.Date.Current" scheme="ISO 8601" content="1998-12-07">

Schemes: See TagGen DC tables for full listing.

ISO 8601 (yyyy-mm-dd) is the preferred MMG-DC form

Modifiers: See TagGen DC tables for full listing.

Creation
Current
Modified

Web Links: None.

RESOURCE TYPE

Element Description: The category of the resource, such as home page, novel, poem, working paper, technical report, essay, dictionary. For the sake of interoperability, TYPE should be selected from an enumerated list.

Guidelines for content creation:

This element should describe the genre of the content of the resource.

Text

Resources in which the content is mainly words for reading, for example: books, letters, dissertations, poems, newspapers, archives of mailing lists.

Image

The content is primarily visual in two dimensions and is not text, for example: images, paintings, animations, diagrams.

Sound

The content is primarily audio, for example: music, speech, recorded sounds.

Data

Information encoded in lists, tables, databases, etc., which will often be in a format ready for direct machine processing, for example: spreadsheets, databases, GIS data.

See TagGen pull-down menu for complete listing.

Examples:

<meta name="DC.Type" CONTENT="image">

Type="sound"

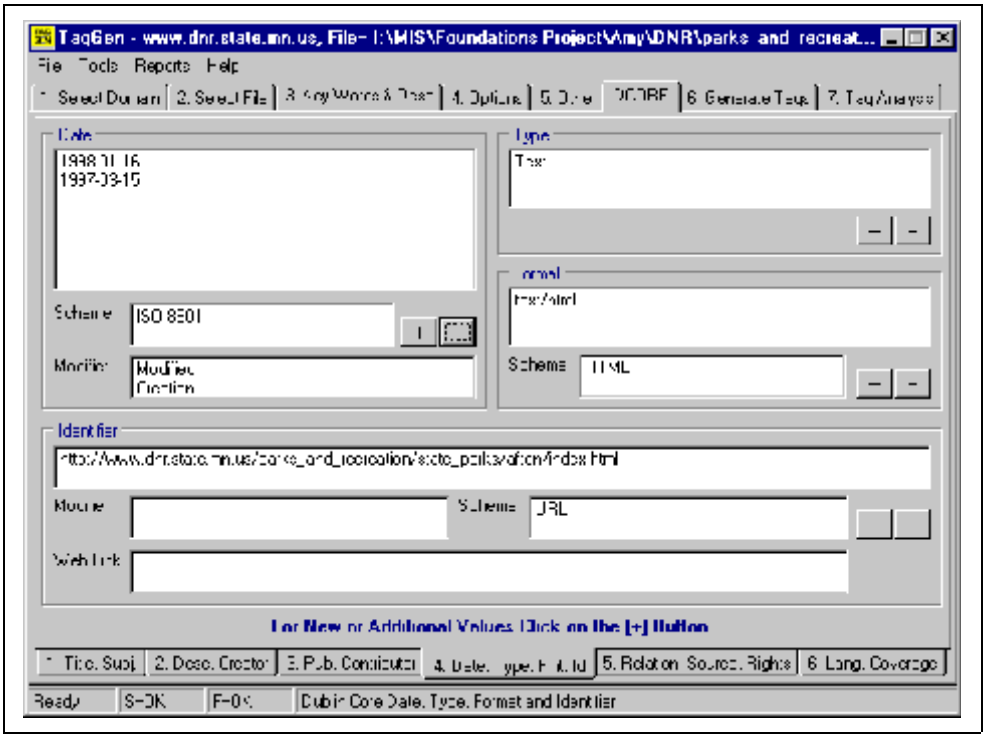
Type="text"

Schemes: None.

Modifiers: None.

Web links: None.

TagGen screen shot:



TagGen DATE, RESOURCE TYPE, FORMAT, and IDENTIFIER data entry screen

FORMAT

Element Description: The data format of the resource, used to identify the software and possibly hardware that might be needed to display or operate the resource. For the sake of interoperability, Format should be selected from an enumerated list that is currently under development in the workshop series.

Guidelines for content creation:

Formats, such as text/html, ASCII, Postscript file, executable application, or JPEG image may be included in this area. Assign a Format from Internet Media Types (MIME types). In principle, FORMAT can include physical media such as books, serials, or other non-electronic media.

Information concerning the size of a resource may be included in the content of the FORMAT element. In resource discovery this might be used as a criterion to select resources of interest,
since a user may need to evaluate whether they can make use of the resource within the

infrastructure available to them.

Schemes: See TagGen DC tables for full listing.

Freetext	MIME
HTML	PDF

Modifiers: None.

Web links: None.

Examples:

<meta name="DC.Format" CONTENT="image/gif">
Title="Dublin Core icon"
Identifier="http://purl.org/metadata/dublin_core/images/dc2.gif"
Type="image"
Format="image/gif 4kB"

<meta name="DC.Subject" CONTENT="Saturn">
<meta name="DC.Type" CONTENT="image">
<meta name="DC.Format" CONTENT="image/gif 640 x 512 pixels">
<meta name="DC.Identifier" CONTENT=
"http://www.not.iac.es/newwww/photos/images/satnot.gif">

Title="The Bronco Buster"
Creator="Frederic Remington"
Type="physical object"
Format="bronze 22 in."

IDENTIFIER

Element Description: A string or number used to uniquely identify the resource. Examples for networked resources include URLs and URNs (when implemented). Other globally-unique identifiers, such as International Standard Book Numbers (ISBN) or other formal names are also candidates for this element.

Schemes:

ISBN PURL URN

ISSN URL

Modifiers: None.
Web links: None.

RELATION

Element Description: An identifier of a second resource and its relationship to the present resource. This element permits links between related resources and resource descriptions to be indicated. Examples include an edition of a work (IsVersionOf), a translation of a work (IsBasedOn), a chapter of a book (IsPartOf), and a mechanical transformation of a dataset into an image (IsFormatOf). For the sake of interoperability, relationships should be selected from an enumerated list.

Schemes:

ISBN
ISSN
FPI

Modifiers: See TagGen DC tables for full listing.

IsPartOf	HasPart
IsVersionOf	HasVersion
IsFormatOf	HasFormat
References	IsReferencedBy
IsBasedOn	IsBasisFor
Requires	IsRequiredBy

Web links: Pointer to the resource.

SOURCE

Element Description: Information about a second resource from which the present resource is derived. While it is generally recommended that elements contain information about the present resource only, this element may contain a DATE, CREATOR, FORMAT, IDENTIFIER, or other metadata for the second resource when it is considered important for the discovery of the present resource: recommended best practice is to use the RELATION element instead. SOURCE is not applicable if the

present resource is in its original form.

Guidelines for content creation: In general, include in this area information which does not fit easily into RELATION.

Schemes:

FPI
ISSN
SICI
Version

Modifiers: None.

Web links: None.

Example:

<meta name="DC.Source" CONTENT="RC607.A26W574 1996">
[where "RC607.A26W574 1996" is the call number of the print version of the resource, from which the present version was scanned]

RIGHTS MANAGEMENT

Element Description: A rights management statement, an identifier that links to a rights management statement, or an identifier that links to a service providing information about rights management for the resource.

Guidelines for content creation:

At present, used only for a URL.

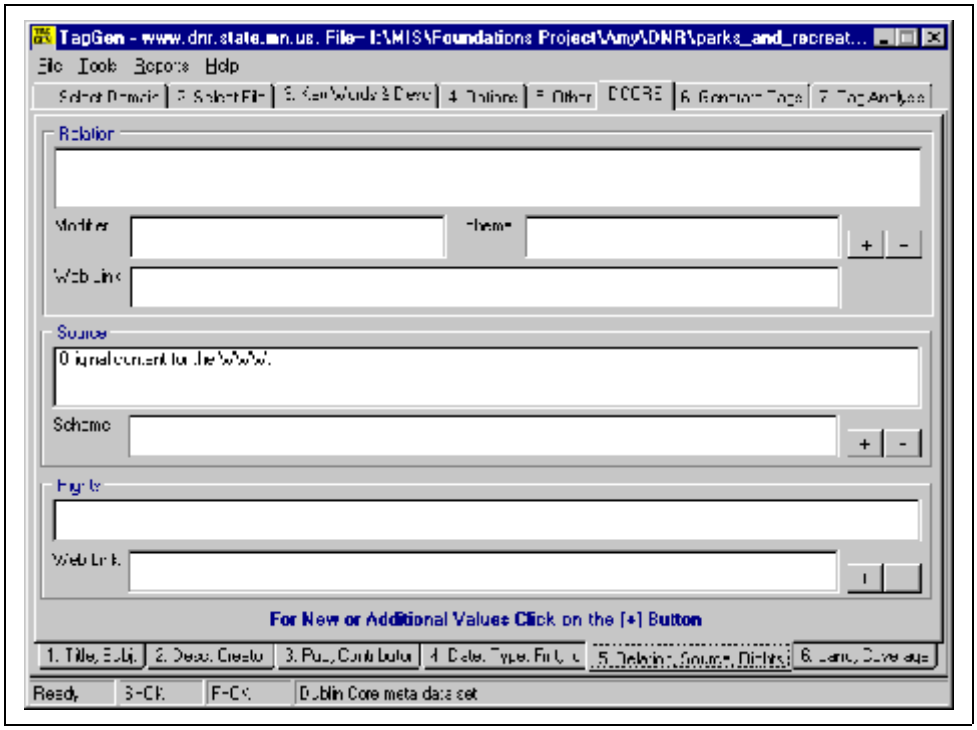
<meta name="DC.Rights" CONTENT=
"http://cs-tr.cs.cornell.edu/Dienst/Repository/2.0/Terms">

Schemes: None

Modifiers: None.

Web links: Pointer to the RIGHTS MANAGEMENT scheme.

TagGen screen shot:



TagGen RELATION, SOURCE, AND RIGHTS data entry screen

LANGUAGE

Element Description: The LANGUAGE of the intellectual content of the resource. Where practical, the content of this field should coincide with RFC 1766 ["Tags for the Identification of Languages," http://ds.internic.net/rfc/rfc1766.txt]; examples: en, de, es, fi, fr, ja, th, and zh.

Guidelines for content creation:

Coded or textual information can be represented here. If the content is in more than one language, the element may be repeated.

Schemes: See TagGen DC tables for full listing.

ISO 639-1 is the preferred scheme; English is "en"

Modifiers: None.

Web links: None.

Examples:

Language=en

Language=fr

OR,

<meta name="DC.Language" CONTENT="en;fr">

OR,

<meta name="DC.Language" CONTENT="Primarily English, with some abstracts also in French.">

<meta name="DC.Language" CONTENT="en-US">

COVERAGE

Element Description: The spatial or temporal characteristics of the intellectual content of the resource. Spatial COVERAGE refers to a physical region (e.g., celestial sector); use coordinates (e.g. longitude and latitude) or place names that are from a controlled list or are fully spelled out. Temporal COVERAGE refers to what the resource is about rather than when it was created or made available (the latter belonging in the DATE element); use the same date/time format (often a range) [Date and Time Formats (based on ISO8601), W3C Technical Note, http://www.w3.org/TR/NOTE-datetime] as recommended for the DATE element or time periods that are from a controlled list or are fully spelled out.

Guidelines for content creation:

Whether this element is used for spatial or temporal information, care should be taken to provide consistent information that can be interpreted by users. For most simple applications, where place names or coverage dates might be useful, whether the information is numeric or alphabetical may be enough to differentiate. For more complex applications, consideration should be given to additional qualification.

Schemes:

ANSI.X3.30-1985

A date/time range in a format specified in ANSI X3.30-1985 standard. Must be used in conjunction with the modifier "temporal."

LatLong

Latitude / Longitude coordinates for the COVERAGE of the resource. Must be used in conjunction with the modifier "spatial."

OSGB

Specifies an Ordinance Survey National Grid Reference.

Modifiers:

Spatial

Temporal

Web links: None.

Examples:

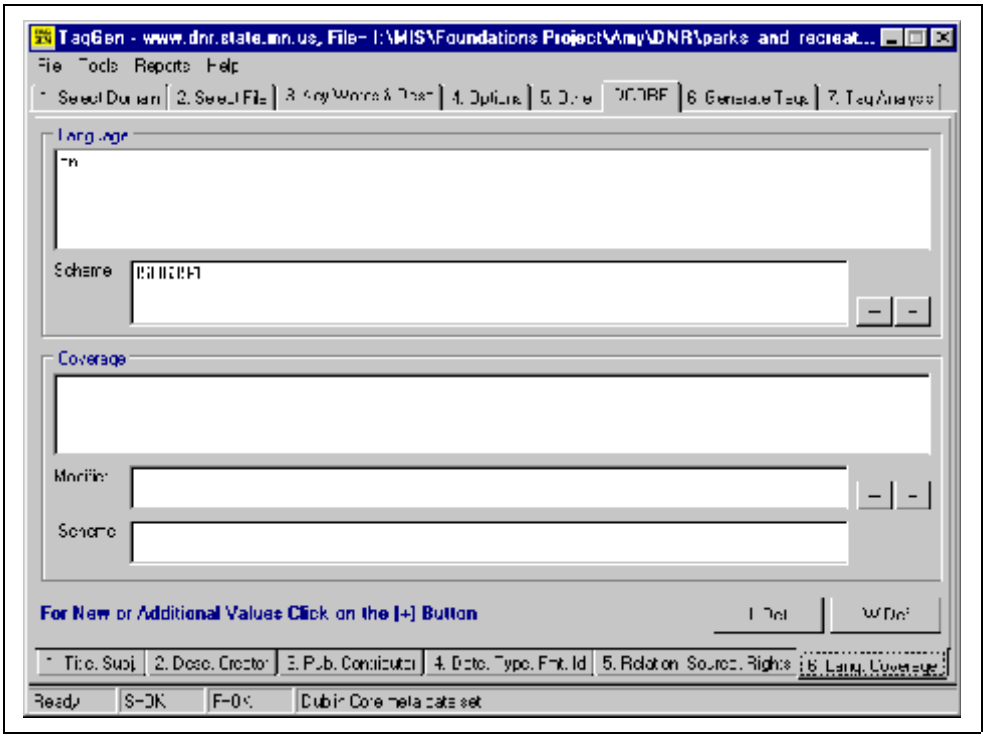
Coverage=1995-1996

Coverage=Boston, MA

OR,

<meta name="DC.Coverage" CONTENT="17th century">

<meta name="DC.Coverage" CONTENT="Upstate New York">



TagGen LANGUAGE and COVERAGE data entry screen

TagGen screen shot:

C. Punctuation

Avoid extraneous punctuation, or ending punctuation in all elements except DESCRIPTION, where a closing period is used. Quote marks within elements, such as DESCRIPTION, must be omitted to avoid confusion with quote marks used around DC elements. Personal names are entered last name first. Corporate names follow Anglo-American Cataloging Rules, 2nd edition (AACR2). See Library of Congress Name Authority File for correct form. State names are spelled out; department is abbreviated as Dept.

Example:

<meta name="DC.Publisher.CorporateName" scheme="AACR2" content= "**Minnesota Dept. of Natural Resources. Division of Forestry**">

Punctuation for subject headings subheads is space-dash-dash-space.

Example:

<meta name="DC.Subject" scheme="LIV-MN" content="**Fruit -- Minnesota -- Directories**">

Order of subheads is based on Legislative Indexing Vocabulary and Library of Congress rules; i.e., "place" follows the subject heading, and "form" follows place. See LIV for standard subdivisions: http://thomas.loc.gov/liv/subdiv.html.

D. Capitalization

Capitalize TITLE and SUBJECT terms according to AACR2 format; that is, capitalize first word and proper names only. Do not alter general meta title tag; the above rule is for Dublin Core titles. Capitalize DESCRIPTION element according to normal rules of writing. If copy and paste has been used, correct capitalization. No elements should be left in all capital letters except acronyms.

Dublin Core Glossary

Adapted from the *Glossary for A User Guide for Simple Dublin Core: Draft,*
a collaborative effort between Gail Clement & Pete Winn.

Anglo-American Cataloguing Rules (AACR2)

The dominant bibliographic standard regulating descriptive cataloging in the English-speaking world. AACR2 represents a set of rules for the standard description of all materials which a library holds or to which it has access.

American Standard Code for Information Interchange (ASCII)

A scheme that provides standard numeric values to represent letters, numbers, punctuation marks, and other characters. The use of standard values allows computers and computer programs to exchange data.

Author

(Creator) The Dublin Core element used to designate the person(s) or organization(s) primarily responsible for the intellectual content.

Best practice

The set of processes and function designs that best fit a given set of circumstances.

Case-sensitive

Lower and upper case letters are not treated as being the same; e.g. 'a' is not the same as 'A.'

Controlled vocabulary

A prescribed set of consistently used and carefully defined terms.

Contributor

The Dublin Core element used to designate Person(s) or organization(s) in addition to those specified in the CREATOR element who have made significant intellectual contributions to the resource.

Coverage

The Dublin Core element used to designate spatial and/or temporal characteristics of the intellectual content of the resource.

Creator

(Author) The Dublin Core element used to designate the person(s) or organization(s) primarily responsible for intellectual content.

Crosswalk

A table that maps the relationships and equivalencies between two or more metadata formats.

Date

The Dublin Core element used to designate the date the resource was made available in its present form.

Description

The Dublin Core element used to designate a textual description of the content of the resource.

Digital tourist

An inexperienced computer user; in the context of resource discovery, an inexperienced searcher.

Discovery software

A computer application designed to simplify, assist, and expedite the process of finding information resources.

Document Type Definition (DTD)

A description the components of a specific document or class of documents. A DTD description includes:

- The containers or elements that make up the document, e.g., headings, list items, figures, tables, etc.
- The logical structure of the document, e.g. chapters containing sections, etc.
- Additional information associated with elements (known as attributes), e.g. identifiers, date, stamps, etc.

Document-like object

An entity the resembles a document from the standpoint that it is substantially text-based and shares other properties of a document; e.g., electronic mail messages or spreadsheets.

DTD. *See* **Document Type Definition**

Dublin Core

The Dublin Core is a 15-element metadata element set intended to facilitate discovery of electronic resources. The Dublin Core has been in development since 1995 through a series of focused invitational workshops that gather experts from the library world, the networking and digital library research communities, and a variety of content specialties.

Electronic information resource

An information resource that is maintained in electronic, or computerized format, and may be accessed, searched and retrieved via electronic networks or other electronic data processing technologies (e.g., CD-ROM)

Embedded metadata

Metadata that is created, maintained and stored within the object it describes; the opposite of stand-alone metadata.

Encoding scheme

A pre-defined way for converting information into code or machine intelligible language.

Extensible

Having the potential to be expanded or stretched in scope, area or size. In the case of Dublin Core, the ability to extend a core set of metadata with additional elements.

Extensible Markup Language (XML)

A subset of Standard Generalized Markup Language (SGML), a widely used international text processing standard. XML is being designed to bring the power and flexibility of generic SGML to the Web, while maintaining interoperability with full SGML and HTML. For more information, *see* **http://www.w3.org/XML/**.

Format

The Dublin Core element used to designate the data representation of the resource.

GIF. *See* **Graphics Interchange Format**

Government Information Locator Service (GILS)

GILS embraces open standards to implement interoperable searching across diverse, decentralized information 'locators' to return references to all kinds of electronic and non-electronic information resources. Locators are implemented as common semantics for characterizing information resources, i.e. common metadata semantics.

Graphics Interchange Format (GIF)

The dominant graphics format on the Web.

Granularity

The degree to which something is composed of small pieces.

Hypertext Markup Language (HTML)

The standard text-formatting language for documents on the World Wide Web. HTML text files contain content that is rendered on a computer screen and markup, or tags, which can be used to tell the computer how to format that content. HTML tags can also be used to encode metadata and to tell the computer how to respond to certain user actions, such as a mouse click. For more information, *see* http://www.w3.org/MarkUp/.

Identifier

The Dublin Core element used to designate a string or number that uniquely identifies the resource.

IMT. *See* **Internet Media Type**

Indexing program

Computer software used to order things; frequently used to refer to software which alphabetizes some or all of the terms in one or more electronic documents.

Information resource

Any entity, electronic or otherwise, capable of conveying or supporting intelligence or knowledge; e.g. a book, a letter, a picture, a sculpture, a database, a person.

Instantiation

An identifiable occurrence or occasion of something; in the case of Dublin Core, a specific

occurrence of an information resource.

Internet Media Type (IMT)

A set of terms that describe types of resources on the Internet.

Joint Photographic Experts Group (JPEG)

A standard for compressing digital images. The advantage of JPEG is that it uses compression to make graphics files smaller, making them faster to transfer and view over the World Wide Web. The disadvantage is some loss of image quality due to data loss during compression.

Keywords. *See* **Subject**

Language

The Dublin Core element used to designate the Language(s) of the intellectual content of the resource.

MARC (USMARC)

National standard for library holdings' database descriptions. Stores a given holding's metadata in one record with a flat structure. This record comprises four components: a leader, a record directory, control files and variable fields. An implementation of ANSI/NISO Z39.2 the American National Standard for Bibliographic Information interchange. The USMARC format documents the designations and content designators for the fields that are to be carried in records structured according to Z39.2.

META tag

The process of applying metadata to an information resource; the HTML element used to demarcate metadata: <META>, </META>.

Metadata

Descriptive information about an information resource. In the case of Dublin Core, information that expresses the knowledge content, intellectual property and/or instantiation characteristics of an information resource.

Metadata record

A syntactically correct representation of the descriptive information (metadata) for an information resource. In the case of Dublin Core, a representation of the Dublin Core elements that has been defined for the resource. The majority of metadata records and record fragments in this document are presented in HTML syntax.

Metadata registry

A publicly accessible system that records the semantics, structure and interchange formats of any type of metadata. A formal authority, or agency, maintains and manages the development and evolution of a metadata registry. The authority is responsible for policies pertaining to registry contents and operation.

Multipurpose Internet Mail Extensions (MIME)

The standard for attaching files to Internet e-mail messages. Attached files may be text, graphics, spreadsheets, documents, sound files, etc.

Networked resource

An object which is available electronically via a network.

Online Computer Library Center (OCLC)

The major source of cataloging data for libraries around the world located in Dublin, Ohio.

Publisher

The Dublin Core element used to designate the entity responsible for making the resource available in its present form.

Qualifier

Something that describes or characterizes an object. In the case of Dublin Core, attributes refine or characterize interpretation of an element's content.

RDF. *See* **Resource Description Framework**.

Relation

The Dublin Core element used to designate the identifier of a second resource and its relationship to the first resource.

Request for Comment (RFC)

A Request for Comment (RFC) is a note about the Internet. The note may discuss any aspect of computing and computer communication. All specification documents for the Internet are published as RFCs. For more information, *see* http://www.isi.edu/rfc-editor/.

Resource Description Framework (RDF)

The basic language for writing metadata; a foundation which provides a robust flexible architecture for processing metadata on the Internet. RDF will retain the capability to exchange metadata between application communities, while allowing each community to define and use the metadata that best serves their needs. For more information *see* http://www.w3.org/RDF/.

Resource discovery

The process through which one obtains knowledge of an information resource.

Resource Type. *See* **Type.**

Resource Description. *See* **Description**.

Resource Identifier. *See* **Identifier**

RFC. *See* **Request for Comment**

Rights

The Dublin Core element used to provide a link to a copyright notice, to a rights-management statement, or to a service that would provide information about terms of access to the resource.

Rights Management. *See* **Rights**

ROADS

An UK funded project whose aim is to develop discovery software for Internet resources.

Scheme

A systematic, orderly design or combination of elements. In the case of the HTML META tag attribute, SCHEME is any recognized coding system used to interpret the meaning of an element.

Search engine

Utility capable of returning references to relevant information resources in response to a query.

Semantics

Significance or meaning. In the case of Dublin Core, the significance or intended meaning of individual metadata elements and their components.

SGML. *See* **Standard Generalized Markup Language**

Software agent

A computer program that carries out tasks on behalf of another entity. Frequently used to reference a program which searches the Internet for information meeting the specified requirements of an individual user.

Source

The Dublin Core element used to designate information about a second resource from which this resource is derived.

Standard Generalized Markup Language (SGML)

A non-proprietary language/enabling technology for describing information. Information in SGML is structured like a database, supporting rendering in and conversion between different formats. Both XML and later versions of HTML instances of SGML. For more information *see* http://www.w3.org/SGML/.

Stand-alone metadata

Metadata that is created, maintained and stored independently of the object it describes. The opposite of embedded metadata.

Subject

(Keywords) The Dublin Core element used to designate the topic of the resource, or keywords or phrases that describe the subject or content of the resource.

Surrogate content

Metadata as a substitute for an actual resource.

Syntax

The form and structure with which elements are combined. In the case of Dublin Core, the form and structure of how metadata elements and their components are combined to form a metadata

record.

TEI . *See* **Text Encoding Initiative**

Temporal

Limited by or in regard to time.

Text Encoding Initiative (TEI)

An international project to develop guidelines for the preparation and interchange of electronic texts for scholarly research as well as a broad range of other language industry uses. The TEI DTD is an SGML Document Type Definition for encoding literary works. For more information, *see* http://www-tei.uic.edu/orgs/tei/info/teij16.html.

Title

The Dublin Core element used to designate the name given to the resource.

Type

The Dublin Core element used to designate the category of the resource.

ULAN. *See* **Union Lists of Artists' Names**

Unicode

A registered trademark of Unicode, Inc. Unicode refers to a universal encoding scheme designed to allow interchange, processing and display of the world's principal languages, as well as many historic and archaic scripts. Unicode supports and fosters a multilingual computing world community by allowing computers using one language to "talk" to computers using a different language.

Unicode Transformation Format, 8-bit (UTF-8)

Unicode Transformation Format, 8-bit. UTF-8 is a temporary form of Unicode that is well suited for routing data through systems which are not designed for Unicode, such as some email servers and web clients. UTF-8 is an attractive way of storing multilingual data on the Internet, without requiring full Unicode compliance.

Uniform Resource Identifier (URI)

The syntax for all names/addresses that refer to resources on the World Wide Web. For

information about Internet addressing, *see* http://www.w3.org/Addressing/Addressing.html.

Uniform Resource Locator (URL)

A technique for indicating the name and location of Internet resources. The URL specifies the name and type of the resource, as well as the computer, device, and directory where the resource may be found. The URL for Dublin Core is http://purl.oclc.org/metadata.dublin_core. For information about Internet addressing, *see* http://www.w3.org/Addressing/Addressing.html.

Uniform Resource Name (URN)

A URI (name and address of an object on the Internet) that has some assurance of persistence beyond that normally associated with an Internet domain or host name. For information about Internet addressing, *see* http://www.w3.org/Addressing/Addressing.html.

Union Lists of Artists' Names (ULAN)

Union Lists of Artists' Names (Getty Information Institute 1997).

URI. *See* **Uniform Resource Identifier**

URL. *See* **Uniform Resource Locator**

URN. *See* **Uniform Resource Name**

USMARC. *See* **MARC**

UTF-8. *See* **Unicode Transformation Format, 8-bit.**

Warwick Framework

An architecture for the interchange of metadata packages, or "containers"; designed to satisfying the need for competing, overlapping, and complementary metadata models. For more information, *see* http://www.dlib.org/dlib/july96/07weibel.html.

World Wide Web (WWW)

The panoply of Internet resources (text, graphics, audio, video, etc.) that are accessible via a web browser.

World Wide Web Consortium (W3C)

The W3C is an international industry consortium founded in October 1994 to lead the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability. Formore information *see* http://www.w3.org/Consortium/.

XML. *See* **Extensible Markup Language**.

Z39.50

Transfer protocol for bibliographic information in a networked environment.

Legislative Indexing Vocabulary (LIV)

Subdivisions of General Application

Most of the indexing terms in the LIV are selected with a view toward fully expressing a concept in single or multiword terms. There are, however, certain aspects of many topics that recur with sufficient frequency to warrant the provision of subdivisions. To keep the size of the vocabulary within reasonable bounds (i.e., in order to avoid having to enumerate all possible applications of subdivisions in the body of the vocabulary), the permissible subdivisions are enumerated below with scope notes to indicate how the subdivisions are to be applied.

The following 59 subdivisions may be used under any indexing term (except geographic names) as required or appropriate. If a subdivision is also a postable term, (Postable) follows the term.

Addresses, statements, etc.

Use as a form subdivision under topical indexing terms, names of individuals, or names of corporate bodies, e.g., Energy--Addresses, statements, etc. For presidential messages, use the subdivision Presidential messages.

Appropriations (Postable)

Use under topical indexing terms or names of governmental bodies for documents discussing actual appropriations of public funds, e.g., Executive departments--United States--Appropriations; United States Dept. of Defense--Appropriations. For documents discussing the authorization of appropriations, use the subdivision Authorization.

Authorization (Postable)

Use under topical indexing terms or names of governmental bodies for documents discussing the authorization of appropriations of public funds, e.g., Space programs--United States--Authorization. For documents discussing actual appropriations, use the subdivision Appropriations.

Bibliography (Postable)

Use as a form subdivision under topical indexing terms for lists of books, reports, magazine articles, newspaper articles, etc., which pertain to those topics, e.g., Balance of payments--United States--Bibliography. For lists of works by or about one person or organization, use the subdivision Bibliography under the name of the person or organization, e.g., Kennedy, John F.--Bibliography; United States Congressional Budget Office--Bibliography.

Biography (Postable)

Use as a subdivision only for general collective biographies, e.g., Scientists--Biography; Women--Biography. Index biographies of individual persons under the name of the individual without subdivision.

Chronology (Postable)

Use under topical indexing terms or under names of persons for listings of events in order of occurrence, e.g., International relations--Chronology; Presidential primaries--Chronology.

Computer files

Use as a form subdivision under topical indexing terms for material in machine-readable formats such as CD-ROMs, data disks, or floppy disks, e.g., Census--Computer files.

Conferences (Postable)

Use as a form subdivision under topical indexing terms to designate collected papers delivered at, or published on the occasion of, named or unnamed individual conferences; reports of the proceedings and discussions, program statements, lists of delegates, etc., of such conferences; or combinations of both, e.g., Energy policy--Conferences; International trade--Conferences.

Costs

Use under types of industries, processes, services, or institutions, or under names of disciplines, for the actual outlay of money, time, labor, etc., while carrying out normal activities, e.g., Grocery trade--Costs; Canning and preserving--Costs; Information services--Costs; Hospitals--Costs; Education--Costs. Do not use the subdivision Costs for topics where phrase terms have been provided, e.g., Construction costs; Labor costs; Social costs.

Dictionaries

Use as a form subdivision under names of languages; under topical indexing terms for works consisting of comprehensive, alphabetical lists of terms pertaining to those topics; or under topical indexing terms for encyclopedic works on those topics, e.g., Arms control--Dictionaries; Environmental protection--Dictionaries.

Directories

Use as a form subdivision under topical indexing terms, classes of persons, types of corporate bodies, or names of particular corporate bodies for the names, addresses, and other identifying data

of persons or organizations connected with the entities named, e.g., Federal officials--United States--Directories.

Economic aspects

Use under appropriate indexing terms for works which discuss economic aspects of a particular topic, e.g., Energy facility sites--United States--Economic aspects. Do not use under topics for which phrase terms have been provided, e.g., Agricultural economics; Defense economics; Medical economics. Use a more specific subdivision if appropriate, e.g., Costs, Fees, Finance, Prices, Wages.

Environmental aspects

Use under types of industries, processes, machines, constructions, or chemicals for environmental problems associated with their operation, creation, or use, e.g., Automobiles--Environmental aspects; Heavy metals--Environmental aspects; Nuclear power plants--Environmental aspects. Do not use under topics for which phrase terms have been provided, e.g., Pesticide pollution; Water pollution.

Equipment and supplies

Use under names of disciplines, types of processes, industries, services, laboratories, or institutions, as well as under names of individual corporate bodies, e.g., Solar heating and cooling--United States--Equipment and supplies. Do not use under topics for which phrase terms have been provided, e.g., Medical instruments and apparatus; Military and naval supplies; Optical instruments.

Evaluation

Use under types of products, institutions, or services for discussions of the ability of equipment to perform as required or on the value of programs or tasks carried out, e.g., Computers--Evaluation; Public health--Evaluation; Libraries--Evaluation. Do not use the subdivision Evaluation for classes of persons. Do not use under topics for which phrase terms have been provided, e.g., Curriculum evaluation; Disability evaluation.

Fees

Use under classes of professional persons, or types of services, institutions, etc., for charges for services rendered, e.g., Architects--Fees; Information services--Fees. Do not use under topics for which phrase terms have been provided, e.g., Dental fees; Legal fees; Medical fees.

Film catalogs

Use as a form subdivision under topical indexing terms for catalogs of pictorial media intended for

projection, i.e., motion pictures, filmstrips, slides, video tapes, etc., on particular topics, e.g., Drug abuse prevention--United States--Film catalogs.

Finance (Postable)

Use under types of industries, services, technical operations, or corporate bodies, as well as under names of individual corporate bodies, for the raising and expenditure of funds, e.g., International agencies--Finance. For the raising of funds of governmental bodies, see scope notes under the subdivisions Appropriations and Authorization. Do not use the subdivision Finance under topics for which phrase terms have been provided, e.g., Educational finance; Housing finance; Railroad finance.

Future (Postable)

Use under topical indexing terms for works discussing (or illustrating by means of graphs, statistics, etc.) trends, projections, predictions, etc., concerning the indexed topic, e.g., Natural resources--Future; Space programs--United States--Future.

Graphs and charts

Use as a form subdivision under topical indexing terms for data presented in the form of graphs and charts pertaining to such topics. When the number of graphs and charts on separate topics would require an excessive number of indexing terms, a broader term encompassing the concepts of the more specific terms should be used, e.g., Commercial aviation--Graphs and charts, instead of Air travel--Graphs and charts, Airline passenger traffic--Graphs and charts, Airline rates--Graphs and charts, Airports--Graphs and charts, Commercial aircraft--Graphs and charts.

Health aspects

Use under appropriate indexing terms for works which discuss the health effects or impact of a specific activity, product, substance, or technology, e.g., Smoking--Health aspects; Contraceptives--Health aspects.

History (Postable)

Use under topical indexing terms for descriptions and explanations of past events within a particular field of knowledge, e.g., Congressional powers--History. Do not use the subdivision History under topics for which phrase terms have been provided, e.g., Military history; Naval history.

International cooperation (Postable)

Use under topical indexing terms for international cooperative activities with or without the active participation of governments, e.g., Postal service--International cooperation; Marine mammal protection--International cooperation. Do not use under topics for which phrase terms have been provided, e.g., International agricultural cooperation; International cooperation in science.

Law and legislation

Use as a form or topical subdivision under topical indexing terms, e.g., Right of privacy--United States--Law and legislation. Do not use under topics for which phrase terms have been provided, e.g., Constitutional law; Irrigation laws; Water law and legislation. See also these subdivisions: Appropriations, Authorization, Legislative histories, Municipal ordinances, and State laws.

Legal cases

Use for compilations or discussions of court decisions on particular topics, e.g., Campaign funds--United States--Legal cases.

Legislative histories (Postable)

Use as a form or topical subdivision under topical indexing terms or corporate names for works documenting the chronological legislative steps or procedures leading to legislation pertaining to the topic or corporate entity, e.g., Foreign relations--United States--Legislative histories; National Labor Relations Act--Legislative histories.

Licenses (Postable)

Use under types of professions, employees, occupational groups, etc., or under particular types of industries or businesses for discussions of the permission granted in accordance with law by competent authority to engage in business or perform work, e.g., Aircraft pilots--Licenses; Nuclear power plants--Licenses. Do not use under topics for which phrase terms have been provided, e.g., Driver licenses; Patent licenses.

Management (Postable)

Use under types of industries or businesses, industrial plants or processes, special activities, names of disciplines, as well as under names of particular government agencies, for works which discuss the function of planning, organizing, directing and controlling an enterprise, activity, or affairs within a particular discipline, e.g., Metal trade--Management; Strip mining--Management; Engineering--Management; United States Veterans Administration--Management. Do not use the subdivision Management for topics for which phrase terms have been provided, e.g., Farm management; Hospital administration; Office management.

Mathematical models (Postable)

Use to subdivide topical indexing terms for materials which represent the operation of a specific process or system in mathematical terms, e.g., Air pollution control--Mathematical models; Economic conditions--Asia--Mathematical models.

Medical care (Postable)

Use under classes of persons, particular occupational groups, or ethnic groups for professional medical care received, e.g., Aged--Medical care; Minorities--Medical care. Do not use under topics for which phrase terms have been provided, e.g., Child health services; Veterans' medical care; Women's health services.

Municipal ordinances (Postable)

Use as a form or topical subdivision under topical indexing terms, e.g., Building laws--United States--Municipal ordinances; Plant shutdowns--Pittsburgh--Municipal ordinances.

Periodicals (Postable)

Use as a form subdivision under topical indexing terms for serials issued indefinitely at regular intervals, generally more frequently than annually, each issue of which normally contains separate articles or other writings, e.g., National defense--United States--Periodicals.

Planning (Postable)

Use under kinds of services, facilities, institutions, etc., e.g., Heliports--Planning; Educational facilities--Planning; Hospitals--Planning. Do not use under topics for which phrase terms have been provided, e.g., Health planning; Transportation planning; Urban planning.

Political activities

Use under classes of persons or occupational groups, kinds of organizations or particular organizations, e.g., Minorities--Political activities; Teachers--Political activities; Army--Nigeria--Political activities. Do not use under topics for which phrase terms have been provided, e.g., Aged in politics; Labor union political activities; Women in politics.

Presidential messages (Postable)

Use as a form or topical subdivision under topical indexing terms, e.g., Federal employees--United States--Presidential messages; International cooperation in science--Presidential messages.

Prices (Postable)

Use under kinds of merchandise, products, etc., for amounts demanded for them at the time of sale on the market. Use also under types of industries where one general term for the products of that

industry is lacking, e.g., Construction industries--Prices. For prices of professional services, use the subdivision Fees. Do not use under topics for which phrase terms have been provided, e.g., Agricultural prices; Automobile prices; Energy prices.

Pro and con

Use as a subdivision under topical indexing terms for works discussing or presenting arguments for and against the indexed topic, e.g., Capital punishment--United States--Pro and con; Congressional veto--Pro and con.

Public opinion (Postable)

Use under topical indexing terms for discussions or results of surveys on the predominant attitudes of a community on a topic, e.g., Drug abuse--United States--Public opinion. To bring out the location of the persons having the opinion, make a second indexing entry of the following type: Public opinion--United States

Research (Postable)

Use under topical indexing terms for descriptions of proposed or ongoing research in particular subject fields, including such details as management, finance, personnel, special projects, methodology, goals, etc., e.g., Space shuttles--United States--Research. Do not use the subdivision Research under topics for which phrase terms have been provided, e.g., Brain research; Fuel research; Military research.

Safety measures

Use under types of objects, chemicals, materials, machines, installations, industries, or activities, or names of disciplines, for discussions of measures to be taken to prevent accidents or injury, e.g., Nuclear reactors--United States--Safety measures. Do not use under topics for which phrase terms have been provided, e.g., Radiation safety; Transportation safety.

Salaries (Postable)

Use under names of professional, administrative and clerical personnel for fixed compensations regularly paid. Do not use to subdivide terms for which phrase terms have been provided, e.g., Executive compensation; Judicial compensation; Military pay. For the remuneration of classes of laborers and others for work performed on an hourly, daily, or piecework basis, use the subdivision Wages.

Scenarios

Use as a subdivision under topical indexing terms for materials presented as a narrative description of a sequence of events that could or might occur in the future, e.g., Electoral college--Scenarios. Scenarios are a distinctive form of simulation and are identified as such by the use of the word "scenario" in the material.

Security measures

Use under types of buildings, establishments, installations, industries, or names of corporate bodies, including particular government agencies, for discussion of measures to be taken, including the use of security personnel, to prevent espionage, sabotage, observation, theft, etc., e.g., Capitol (Washington, D.C.)--Security measures. Do not use under topics for which phrase terms have been provided, e.g., Computer security measures; Nuclear security measures.

Selected articles

Use as a form subdivision under topical indexing terms for collections of newspapers and magazine articles compiled by the Congressional Research Service, e.g., Presidential elections--Selected articles.

Simulation methods (Postable)

Use to subdivide topical indexing terms for materials which discuss comprehensively the development or use of several types of models for studying particular systems, processes, or concepts. For works which discuss the simulation of a particular system, process or concept using only one model type (e.g., mathematical models, gaming models, etc.) assign only the topic appropriate for the model type, e.g., Air pollution control--Mathematical models; War games.

Social aspects

Use under appropriate indexing terms for works which discuss the impact of the item, activity, principle, or discipline in question on modern society and vice versa, e.g., Agriculture--Social aspects; Energy facility sites--United States--Social aspects; Urban renewal--United States--Social aspects. Do not use under topics for which phrase terms have been provided, e.g., Business and social problems; Technology and social problems.

Standards (Postable)

Use under topical indexing terms, particularly under kinds of materials or equipment, names of disciplines, or kinds of establishments, for descriptions of the example or model set up and established by authority which all others should follow, e.g., Grain--Standards; Electrical

engineering--Standards; Libraries--Standards. Do not use under topics for which phrase terms have been provided, e.g., Industrial standards.

State laws (Postable)

Use as a form or topical subdivision under topical indexing terms for discussions or compilations of laws or legislation of the major administrative divisions of countries organized on a federal basis, e.g., Age (Law)--California--State laws; Workers' compensation--United States--State laws.

States

Use to subdivide names of countries whose major administrative divisions are called states (e.g., United States) for discussions of the states collectively in relation to a specific topic. Use the subdivision only when the name of the country is itself used as a subdivision under a topical term, e.g., Civil service system--United States--States.

Statistics (Postable)

Use as a form subdivision under topical indexing terms for compilations of numerical data pertaining to such topics, e.g., Military personnel--Hawaii--Statistics. Do not use the subdivision under topics for which phrase terms have been provided, e.g., Labor statistics; Legislative statistics; Population statistics.

Study and teaching

Use under topical indexing terms for works which discuss both methods of studying and teaching in the field in question, as well as educational facilities and activities in that field, including institutions, courses, programs, students, funds, etc., e.g., Mathematics--United States--Study and teaching. Do not use under topics for which phrase terms have been provided, e.g., Agricultural education, Environmental education; Medical education.

Supplemental appropriations (Postable)

Use under topical indexing terms or names of governmental bodies, e.g., Executive departments--United States--Supplemental appropriations.

Tariff (Postable)

Use under terms for products on which import (or in some cases export) duties are imposed by governments, e.g., Automobiles--Foreign--Tariff

Taxation (Postable)

Use under topical indexing terms for discussions of the taxes which are levied on income-producing

activities, on articles of value, or applying to particular classes of persons, especially employed persons, e.g., Petroleum industry--Taxation; Hospitals--Taxation; Drugs--Taxation; Investments--Taxation; Single people--Taxation. Do not use under topics for which phrase terms have been provided, e.g., Commuter tax; Property tax; Taxation of foreign income.

Technological innovations (Postable)

Use under technical topics for discussions of the processes by which new products or techniques in these fields are developed and introduced into the economic system, e.g., Computers--Technological innovations.

Treaties (Postable)

Use as a form or topical subdivision under topical indexing terms, e.g., Wheat trade--United States--Treaties. Do not use under topics for which phrase terms have been provided, e.g., Consular agreements; Fishery agreements; Peace treaties.

Trends

Use as a subdivision under topical indexing terms for materials describing or discussing trends or changes in the course of time pertaining to such topics, e.g., Women's employment--United States--Trends. Trends indicate changes that most typically are historical, ending with the present. Materials discussing "future trends" should be subdivided by the subdivision Future. Materials on trends are usually identifiable by the presence of the words "trends" or "changes" in the title, abstract, or text.

Videoprograms

Use as a form subdivision under topical indexing terms for materials presented on videotape, e.g., Congressional oversight--Videoprograms.

Wages (Postable)

Use under classes of laborers and others for remuneration of work performed on an hourly, daily, or piecework basis, e.g., Blue collar workers--United States--Wages. Do not use under topics for which phrase terms have been provided, e.g., Agricultural wages. For fixed compensation regularly paid to professional, administrative, and clerical personnel, use the subdivision Salaries, e.g., Federal officials--United States--Salaries.

TagGen Download Information

1. Go to: **http://www.hisoftware.com/subscribenet/downloads.htm**

2. Enter user and password (ask Eileen Quam for this information, as well as for DC qualifiers).

3. Choose TagGen Dublin Core to download.

4. Read License Agreement to get install password ("CowSpots" at this time).

5. Save in Temp or Download folder.

6. After download is complete, find icon in temp folder and double-click; accept defaults when installing.

7. To add DC Qualifiers (e-mail attachment):
    - After the install is complete, open up the screen with the program. Depending on your program file location, the path is something like:
      My Computer/C:/Program Files/HISC/TagGen Dublin Core.
    - Drag the files in the attachment (there are 19) in to the dclists folder.

TagGen - Dublin Core Version

Basic Instructions

1. Check your access to files (via network or FTP, e.g.)

2. Open TagGen to add file
   (prompted when TagGen opens, or Select command on bottom task bar

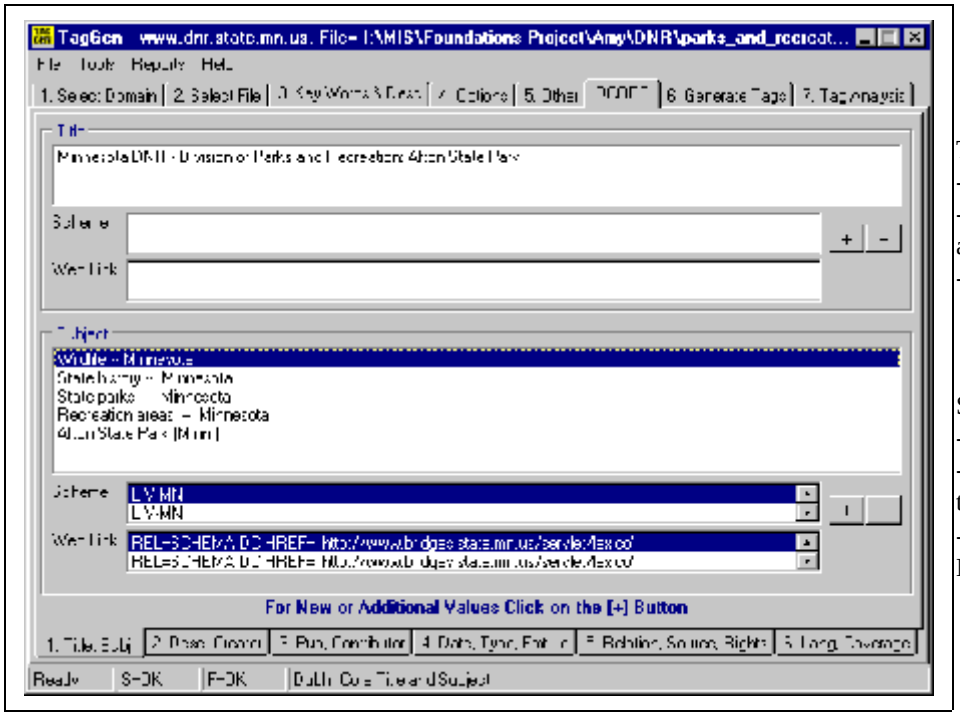
3. Fill in the Dublin Core elements
   - You must always work in an editing screen, which is accessed with the + key near the specific DC element
   - To edit an existing element, double-click on it
   - Continue through all applicable DC elements
   - Choose the Update Files tab at the top
   - Click on Update in lower right hand corner to load tags into page

     *This is very important, as work will be lost if you don't Update

4. Generic metatags
   - You can create generic metatags for outside search engines if desired
   - Choose Custom/Subject tab
   - In Select Schema, choose Base and rename (to Meta, e.g.)
   - Add tags for Title, Description, and Keyword and Save
   - Fill in with information contained in dc.title, dc.description, and dc.subject

5. Editing Dublin Core Qualifiers
   - To add DC qualifiers, choose Lists
   - Choose modifiers, schemes, or web links as appropriate and edit

Guide to DC Elements And Qualifiers
Title - Subject - Description - Creator

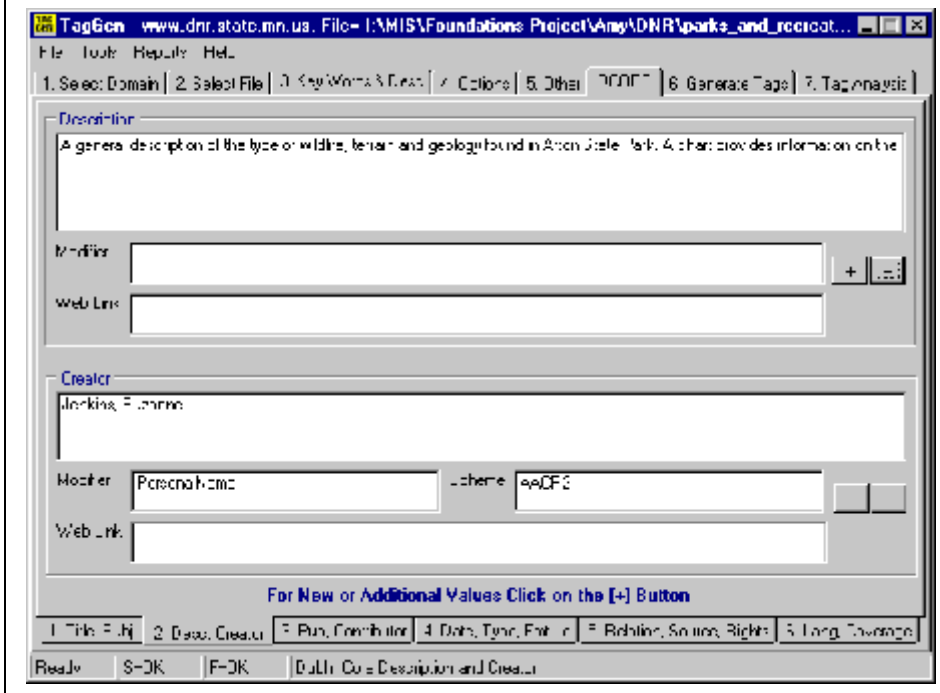


TITLE
-Leave HTML title
-2nd title: portion or variant as needed
-**No qualifiers**

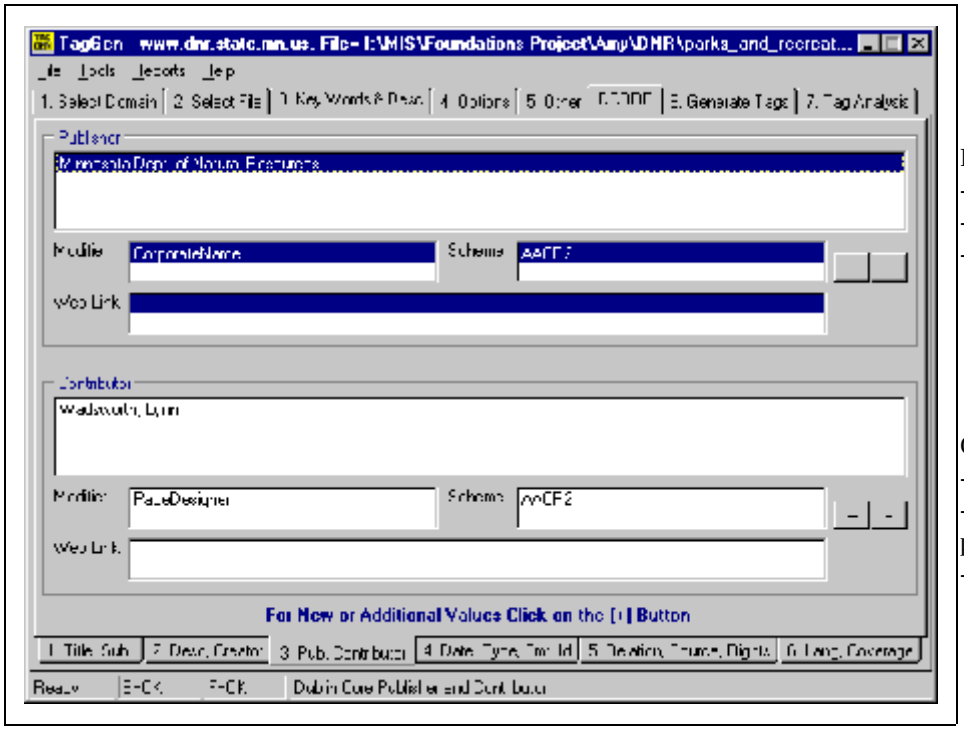
SUBJECT
-Add subheads
-Scheme: **LIV-MN** for topics; **AACR2** for names
-Select **web link** for LIV-MN from menu

DESCRIPTION
-**No qualifiers**

CREATOR
-Last name first
-Modifier: **PersonalName** or **CorporateName**
-Scheme: **AACR2**



Guide to DC Elements and Qualifiers
Publisher – Contributor – Date – Type – Format - Identifier



PUBLISHER
-Agency name
-Modifier: **corporate name**
-Scheme: **AACR2**

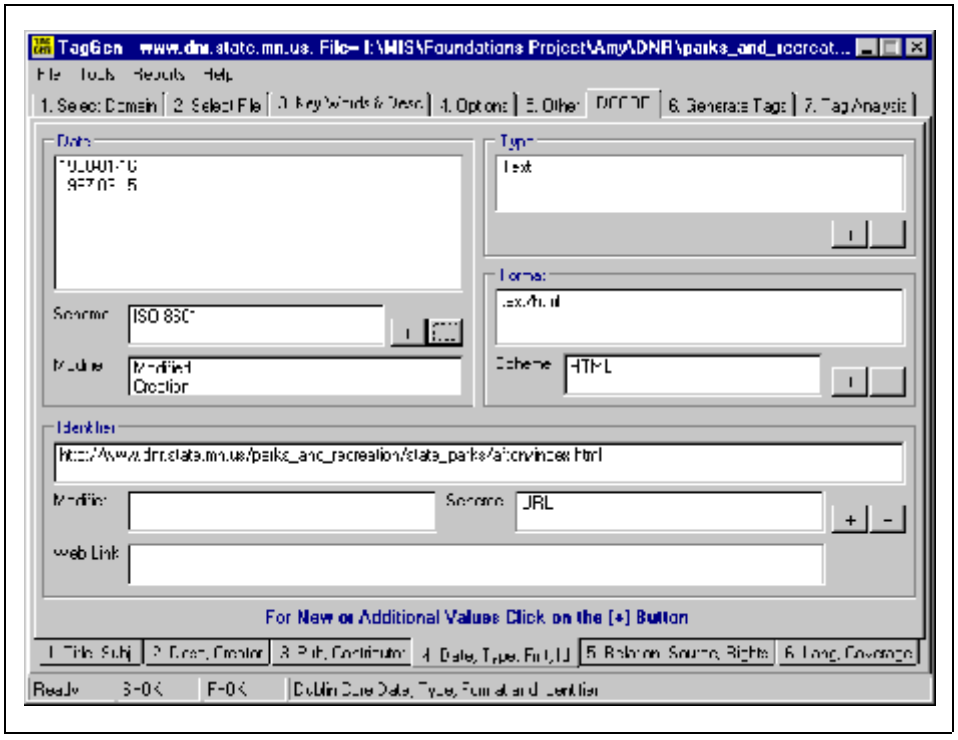
CONTRIBUTOR
-Person or Agency
-Modifier: see element pull-down menu
-Scheme: **AACR2**

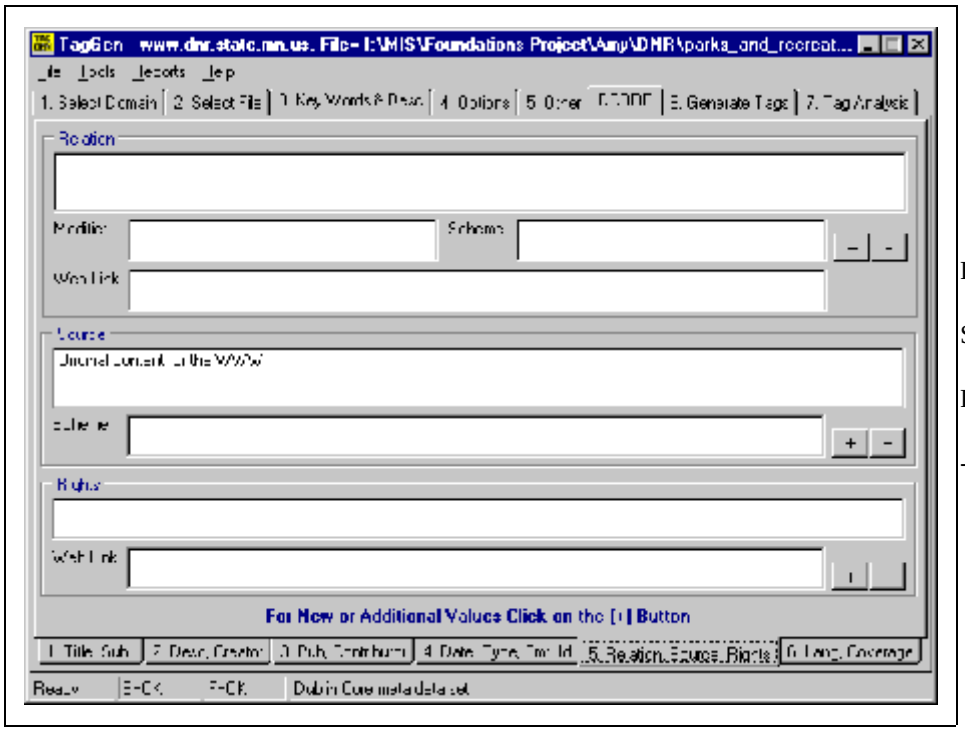
DATE
-Multiple dates OK - see pull-down menu
-Scheme: **ISO 8601**

TYPE
-Usually **Text**; see pull-down menu for options
-No qualifiers

FORMAT
-Usually **text/html**; see pull-down menu for other options
-Scheme: usually **HTML**

IDENTIFIER
-Type in page URL
-Scheme: **URL**





RELATION

SOURCE

RIGHTS

-**Usually blank**

LANGUAGE
-**en**
-Scheme: **ISO 639-1**