Dublin Core Metadata Guide**
Indiana Memory Project
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This document provides information on the application of published standards and best practices for Dublin Core metadata creation. It includes a list of required metadata elements, recommended metadata elements, and optional metadata elements for Indiana Memory metadata records. Required elements must be included in any item-level Indiana Memory metadata record. Recommended elements should be included if those creating the metadata have enough information to describe the elements accurately. Optional elements may be included at the discretion of those creating the metadata. An FAQ section providing information on the Indiana Memory program, Dublin Core metadata, and other metadata standards starts on page 10 of this document.

REQUIRED DUBLIN CORE (DC) ELEMENTS

The following elements are required for inclusion in Digital Public Library of America (DPLA) and must be included in the metadata of all projects or collections created with state-licensed CONTENTdm acquisition stations and/or LSTA funding that are

CONTENTdm Field**: Title**

DC Element	Definition	Comments
Title*^	Name of the resource	Typically, the **title** will be a name by which the resource is formally known. The title may be a name given to the resource by the creator or publisher. If the item does not have a title, assign one that is brief but descriptive.

Cataloging Notes:

- If the resource does not have a title, create a title for it.
- Make the title as descriptive as possible while still keeping it fairly brief. Avoid simple generic titles, though this is not always possible.
- Bring out the unique qualities of an item.
- Capitalization: First word of any title should be capitalized; all other words are lower-case except for proper nouns
- Include format (i.e. papers, portrait) in the title when you feel it is required to properly convey the nature of the title.
- Refer to content standards like CCO, RDA, DCRM, etc.

Examples:

- Little orphan Annie
- Tourist's pocket map of the state of Indiana
- 12 ways to get to 11
- Jacob Piatt Dunn papers
- Portrait of Abraham Lincoln
- Aerial view of South Bend, Indiana, 1899
- Mrs. John Smith at birthday party

CONTENTdm Field: **Rights**

DC Element	Definition	Comments

Rights*^	Information about rights held in and over the resource.	The contents of this field must be the URI for one of the DPLA Standardized Rights Statements (see http://rightsstatements.org/page/1.0/?language=en) or a Creative Commons URI.

Cataloging Notes:

- The guidelines for the Rights field are taken from the DPLA Standardized Rights Statements Implementation Guidelines (http://bit.ly/dpla-rights-guidelines).
- Eventually, DPLA will require that the contents of this field be a URI as described above in the **Comments**. However, they will accept textual statements for a while. If you only have textual rights information, please do not map anything to the Rights field and map the textual statement to the AccessRights field as shown below in AccessRights.
- Use the optional RightsHolder field for local rights statements that indicate the holder of copyright.
- Please note that none of the rights statements should conflict with the other statements.

Examples:

- http://rightsstatements.org/vocab/NoC-US/1.0/
- http://rightsstatements.org/vocab/InC/1.0/
- http://creativecommons.org/licenses/by/3.0/

OR, if needed:

- http://rightsstatements.org/vocab/NoC-NC/1.0/ and (in a second Rights field) No Copyright – Non-Commercial Use Only

CONTENTdm Field: **Repository**

DC Element	Definition	Comments
Provenance*^	Name of the institution providing the digital collection to DPLA (Contributing Institution)	**Provenance** corresponds to the name of the institution providing the digital collection to DPLA. Your institution's name should be here unless you are hosting a collection on behalf of another institution. If you are hosting a collection, the hosted institution's name would be here and your institution's name would be in the AudienceMediator (Intermediate Provider) field. Both institution names display as Contributing Institutions on the DPLA site. DPLA labels this as **Data Provider** in their documentation.

Cataloging Notes:

- Establish a consistent value for the name of the institution.
- See AudienceMediator for a description of the hosting institution (Intermediate Provider).

Examples:

- Indiana State Library
- IUPUI (Campus). University Library. Special Collections and Archives
- Sullivan County Historical Society

CONTENTdm Field: **Subject**		
DC Element	**Definition**	**Comments**
Subject*^	The topic of the content of the resource.	Typically, a **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. Generally, this field will contain terms that describe what is depicted in an image, or terms that describe what a text is about. May also include terms for significantly associated people, places, events, genres, forms, etc. This field will not contain item format descriptions, such as "photographic print," because this data will be described in the optional FormatMedium field.

Cataloging Notes:

- If including names of people, places, groups, or events consult the Library of Congress Authority File for Authorized Headings. Use Authorized Heading if found.
- If an Authorized Heading is not found create the name based on current cataloging standards.
- If using two different thesauri or controlled vocabularies, it is acceptable to combine the vocabularies in one Subject field.
- Separate headings and subheadings with [space]dashdash[space], or dashdash depending on the system, and multiple headings with a semi-colon[space] (i.e. Indiana -- History; Libraries -- Indiana).
- For newly cataloged collections, DPLA recommends using uncoordinated subject headings to increase matching of terms in the aggregated data set.
- This element can be repeated, if needed.
- Do not use end punctuation

Recommended Thesauri

These are commonly used and easily accessible thesauri that provide a wide range of controlled subject headings. They should suffice for most collections:

Code	**Name of Thesaurus**
LCAF	Library of Congress Authorities File: http://authorities.loc.gov
LCSH	Library of Congress Subject Headings: http://authorities.loc.gov/cgi-bin/Pwebrecon.cgi?DB=local&PAGE=First
LCTGM	Thesaurus for Graphic Materials: TGM I, Subject Terms: http://lcweb.loc.gov/rr/print/tgm1/

Other Example Thesauri

These may also prove useful for certain collections:

Code	**Name of Thesaurus**
AAT	Art and Architecture Thesaurus http://www.getty.edu/research/tools/vocabulary/aat/
FAST	Faceted Application of Subject Terminology http://fast.oclc.org/searchfast/
TGN	Getty Thesaurus of Geographic Names http://www.getty.edu/research/tools/vocabulary/tgn/
Local	Locally controlled list of terms
MeSH	Medical Subject Headings http://www.nlm.nih.gov/mesh/meshhome.html
MIM	Moving Image Materials: Genre terms
GMGPC	Thesaurus for Graphic Materials: TGM II, Genre and Physical Characteristic Terms: http://lcweb.loc.gov/rr/print/tgm2/

CONTENTdm Field: **Type**		
DC Element	**Definition**	**Comments**
Type*^	Nature or genre of the content of the resource	This field is for descriptions of the item type of the original object.

Cataloging Notes:

- Use a term from the DCMI Type Vocabulary in this field found at http://dublincore.org/documents/dcmi-terms/
- As of 1/18/2017, those terms include Collection, Dataset, Event, Image, InteractiveResource, MovingImage, PhysicalObject, Service, Software, Sound, StillImage, and Text.

CONTENTdm Field: **Date**		
DC Element	**Definition**	**Comments**
Date.Created*^	Date of the creation of the resource.	Date of publication if known. If the item was never published, enter the date of creation.

Cataloging Notes: When a precise date is known, use the format YYYY-MM-DD, supplying as much information as possible. Use a single hyphen to separate the year, month, and date components.

Year 1942
Year + month 1942-03
Year + month + day 1942-03-09

Suggested practice if no date is known, leave blank.

For more information, please see the DPLA Geographic and Temporal Guidelines (http://bit.ly/dpla-geo-styleguide)

CONTENTdm Field: **Date Digital**		
DC Element	**Definition**	**Comments**
Date.Available	Date the resource became available digitally.	Date the item was added to digital content management tool. This date is can be automatically generated by Content DM and many other digital content management tools.

Cataloging Notes: When a precise date is known, use the format YYYY-MM-DD, supplying as much information as possible. Use a single hyphen to separate the year, moth, and date components.

Year 1942
Year + month 1942-03
Year + month + day 1942-03-09

If no date is known, leave blank.

CONTENTdm Field: **Item ID**		
DC Element	**Definition**	**Comments**
Identifier*	An unambiguous reference to the resource within a given context. Typically, this is the master TIFF file name.	A character string or record number that clearly and uniquely identifies a digital object or resource as it relates to the Indiana Memory project. The *Item ID* element ensures that individual digital objects from multiple institutions can be accessed, managed, stored, recalled, and used reliably. Input local naming conventions or the ISSN, ISBN, other international standard numbers that describe the original in the *Local Item ID* field.

Cataloging Notes:

- If deriving the Identifier directly from the file name for the item, this field can be automatically generated by Content DM and many other digital content management tools.
- Within CONTENTdm, this may be automated by using the template creator and setting Item ID field to File Name, file naming conventions for new collections created for the Indiana Memory program must adhere to Indiana Memory standards. Examples are below.
- If you do not use the file name as the identifier, consider including the file name in another field. This can be very helpful if you ever have to move or re-create the collection.

Examples:

- UA24-005007
- Mss039-024-01_Front
- san1915_001.tif
- For Indiana Memory participants, file names for single items should be created as such:
  - Program name-institution name-collection identifier-item number_descriptor
    - Examples:
      - Culver-Union Township Public Library: im-culver-payson-001_boysmoking
        im-culver-payson-002_boysfootball
      - Elkhart Public Library: im-elkhart-then-001_courthousethen
      - Indiana State Archives: im-archives-courthouses-001_hamilton
      - Starke County Public Library/Starke County Historical Society: im-starkehs-bass-001_hotel
- For compound objects such as postcards, books, or pamphlets, file names should be created as such:
  - Program name-institution name-collection identifier-item number-page number_descriptor
    - Pamphlet example
      - im-isl-ww1-005-01_cover
      - im-isl-ww1-005-02_page1
      - im-isl-ww1-005-03_page2
      - im-isl-ww1-005-04_back
    - Postcard example:
      - im-starkehs-bass-003-01_front
      - im-starkehs-bass-003-02_back

REQUIRED WHEN AVAILABLE / RECOMMENDED DUBLIN CORE (DC) ELEMENTS

The following elements must be included in the metadata of all projects or collections created with state-licensed CONTENTdm acquisition stations and/or LSTA funding that are shared on Indiana Memory when available/applicable.

CONTENTdm Field: **Creator**

DC Element	Definition	Comments
Creator^	Entity primarily responsible for the creation of the resource.	The person or group responsible for the intellectual or artistic content of the original item. Examples include: author, artist, sculptor, photographer, etc.

Cataloging Notes:

- This element is repeatable.
- Use of an authority list of names (LCNAF, VIAF, ULAN, etc.) is highly recommended.
- For names not appearing in the authorized list, follow the same convention. Last name, First name preferred (so like names sort together).
- This field can contain more than one name separated by a semi colon[space]

Examples:

- Lincoln, Abraham, 1809-1865
- Riley, James Whitcomb, 1849-1916
- Toulouse-Lautrec, Henri de, 1864-1901
- Clinton, Bill, 1946-
- Chesney, Kenny
- Indiana State Library
- United States. Army. Indiana Infantry Regiment, 9th (1861-1865)
- Walt Disney Company; Clinton, Bill, 1946-; Chesney, Kenny

CONTENTdm Field: **Publisher**

DC Element	Definition	Comments
Publisher^	Entity responsible for making the **original** resource available.	Sometimes a publisher cannot be determined from the information provided on the resource. If that is the case, do not use this element. This field is used for published items only.

Cataloging Notes:

- When including names of people, groups, or events consult the Library of Congress Authority File for Authorized Headings (http://authorities.loc.gov). Use Authorized Heading if found.
- If an Authorized Heading is not found, create the name based on RDA rules.

Examples:

- Microsoft Corporation
- United States. Government Printing Office
- University of Virginia Press

CONTENTdm Field: **Language**		
DC Element	**Definition**	**Comments**
Language^	Language of the intellectual content of the resource	**Language** indicates the language(s) in which the text of the object are written. Use for objects that contain text or speech only.

Cataloging Notes:

- Indicate language using ISO 639-3 language codes (http://www-01.sil.org/iso639-3/codes.asp) and/or spell out the name of the language in English.
- If language is not English, then Title should be in the foreign language.
- If the resource is in more than one language, separate multiple language codes with a semi-colon.

Examples:

- eng
- eng; deu
- English; German

OPTIONAL ELEMENTS

These elements can be included within the metadata of items created with state-licensed CONTENTdm acquisition stations and/or LSTA funding that are shared on Indiana Memory.

CONTENTdm Field: **Contributor**		
DC Element	**Definition**	**Comments**
Contributor^	Name of another individual or organization with responsibility for the creation of the resource.	Contributor could contain others responsible for the creation of the original object (i.e. illustrator of a text) or a funder or granting agency.

Cataloging Notes:

- Use of an authority list of names (LCNAF, VIAF, ULAN, etc.) is highly recommended.
- For names not appearing in the authorized list, follow the same convention (last name, first name).
- Use a controlled vocabulary to indicate the role the individual or organization in the creation of the resource.
- If this field is used to convey funding information, precede the funder's name with the phrase "Funding provided by."

Examples:

- Funding provided by an Institute of Museum and Library Services grant, administered by the Indiana State Library
- Sendak, Maurice, illustrator

CONTENTdm Field: **Transcript**		
Element Name	**Definition**	**Comments**
Transcript (maps to None or to an element not listed in this Metadata Guide - such as Description-Abstract)	Complete text transcription of the resource	This field can be utilized in CONTENTdm to provide a full-text searchable transcript of information found in letters and diaries, on the backs of postcards, in books, etc. The information might be entered via OCR (optical character resolution) or typed in manually.

Cataloging Notes:

- If you want to be able to search the transcript field, then Transcript must be mapped to a DC element. For DPLA collections, please use a DC element that is not listed in this Metadata Guide such as Relation.

Examples:

- http://content.lib.utah.edu/cdm4/item_viewer.php?CISOROOT=/tanner&CISOPTR=1473
- http://images.indianahistory.org/cdm4/document.php?CISOROOT=/DC003&CISOPTR=195&REC=1

CONTENTdm Field:

DC Element	Definition	Comments
AudienceMediator^	Name of the institution hosting a digital collection on behalf of another institution.	**AudienceMediator** should be used to indicate the hosting institution if not the same as the owning institution. For example, IUPUI University Library hosts a digital collection of objects owned by the Indianapolis Motor Speedway. In this case, IUPUI University Library is the Intermediate Provider (AudienceMediator) and the Indianapolis Motor Speedway is the Data Provider (Provenance).

Cataloging Notes:

- Include the standard name of the hosting institution if not the same as the owning institution.

Examples:

- IUPUI University Library
- Indiana State Library

CONTENTdm Field: **Format**

DC Element	Definition	Comments
Format	The digital manifestation of the resource.	Typically, **Format** is used to record the file type, software, hardware or other equipment needed to display or operate the resource.

Cataloging Notes:

- The following pieces of information must be included in the Technical Metadata field *if they are known.* ONLY include these pieces of information if you have enough information to accurately describe them; if you do not, make no mention of them in this field.
- For CONTENTdm users: Some compound objects may have sections within them that were scanned differently than the majority of the resource—an example might be a black and white book scanned in 8 bit grayscale with a full-color pull out map inside that was scanned in 24 bit color and saved as a JPEG2000 file. Please simply describe the information below about the compound object as a whole rather than attempting to provide page-level metadata.
- Scanner used
- Other equipment used (digital camera, etc.)
- Software used (include version number, example: Silverfast, Adobe Photoshop 7.0)
- Resolution of master TIFF
- Bit Depth of master TIFF (must comply with Indiana Memory standards)
- File format (should be TIFF if image file)

Examples of Required elements in Technical Metadata field (separate items by semi-colon):

- Full View: 300 ppi jpeg 2000 ; Archived: 300 ppi tiff
- Scanner: Oce 4052 50 inch color sheet-feed scanner
- 100 ppi jpeg ; Minolta 300x

CONTENTdm Field: **Rights Holder**		
DC Element Name	**Definition**	**Comments**
RightsHolder (leave this mapped to nothing)	A person or organization owning or managing rights over the resource.	

Cataloging Notes:

- Whatever is entered in this field must not conflict with the statement in the Rights field.
- Recommended best practice is to use the URI or name of the Rights Holder to indicate the entity.

Examples:

- IUPUI (Campus). University Library. Special Collections and Archives
- Indiana State Library
- Contact Legal Affairs office for reuse permissions at Inquiries@Company.com

CONTENTdm Field: **Copyright**		
DC Element	**Definition**	**Comments**
AccessRights^	Information about rights held in and over the resource.	This field is required for DPLA when you only have textual rights information and do not yet have the appropriate URI in the Rights field. If you **are** using the Rights field (with an appropriate URI), the AccessRights field is not required for DPLA.

Cataloging Notes:

- This field is for textual statements of rights information. It is to be used only when the collection has not yet been evaluated to determine the appropriate URIs to describe the rights held in and over the resources.
- If you have assigned appropriate URIs for the items in the collection, please use the **Rights** field described above instead of the AccessRights field for the URIs.

Examples:

- This work is in the Public Domain
- Copyright held by Pat Smith

FREQUENTLY ASKED QUESTIONS

1. What is Indiana Memory?
Indiana Memory is a resource found at http://www.indianamemory.in.gov that provides online access to the cultural and historical resources of the state of Indiana—a gateway to Indiana's history and culture found in digitized books, manuscripts, photographs, newspapers, audio, video, and other materials. Funded by the Indiana State Library, this digital library is made possible through the collaborative efforts of Indiana's libraries, archives, historical societies, museums, and other institutions of cultural heritage to develop, maintain, and preserve digital collections and online digital resources. These digital objects will be created, maintained, delivered, and preserved according to national standards.

2. Why do we need to follow standards?
The primary objective of Indiana Memory is improved access to the unique resources and special collections that have been or will be converted into digital format by Indiana's cultural heritage institutions. One way to accomplish this goal is by bringing information about all of these diverse and scattered resources together into a single portal of access. To be able to collaborate at this level we need to be able to share our information. This is why standards are so important.

Standards provide the framework for sharing information among institutions and across networks. The adoption of standards is necessary for effective sharing of resources and institutional interoperability. To improve access to these materials it is not enough to simply convert them into digital format and make them available on the Web. Access requires information about the material. We refer to this information as metadata. Describing a resource is a difficult process but an important one if we truly want our state's unique resources to be available and accessible to the world. The more we adhere to uniform practices, the more likely these resources will be found and used.

3. What is metadata?
Metadata is simply structured information about a resource. In the broadest sense, metadata describes information resource in such a way that it can be searched and located by users. Metadata provides the necessary tools to manage, preserve, and provide access to information in the digital environment. The creation of metadata is governed by a body of standards, best practices, and schemas that, when appropriately applied, work together to facilitate the above tasks.

Metadata is necessary for discovery of relevant materials. A digital object with no associated information can only be browsed, but this same digital object with an associated metadata record now has a title, description, keywords, and/or subjects that can be searched. If all Indiana Memory contributors follow certain metadata standards, all records can be accurately searched and shared.

4. Are there different types of metadata?
In general, there are a variety of types of metadata, including:

- Descriptive metadata: information used for indexing, discovery, identification of digital resources, and access
- Technical metadata: provides information about the scanning process – resolution, hardware/software, compression, etc.
- Structural metadata: information used to display and navigate complex digital resources
- Administrative metadata: provides management information such as how to access and display the resource as well as rights management

- Preservation metadata: includes information such as the change history of a resource and detailed technical information useful for management of resources within a digital archive

5. Do I have to provide item-level descriptions to participate in Indiana Memory? What if I have archival finding aids or collection-level metadata to share?
Different types of materials require different levels of descriptive metadata. A large collection of disparate materials probably requires item-level description with separate metadata records for each item in the collection. For a cohesive archival collection with large numbers of like items, an institution may choose to only describe the items at the folder, box, or even collection level. Indiana Memory will accept metadata at any or all of these descriptive levels.

6. What is the Dublin Core?
Dublin Core is an open, global standard designed primarily to support discovery and retrieval of digital resources. The Dublin Core metadata standard is a set of fifteen elements and optional qualifiers that can be used to describe a variety of digital resources. The Dublin Core was intentionally created to be simple to use and understand. This allows a non-specialist to create descriptive records for digital resources easily and efficiently. The terminology used in Dublin Core is universally understood and generic enough to be applicable to a variety of disciplines and formats. The Dublin Core elements are defined, but usage standards are left to the individual groups implementing the standard, so Indiana Memory has chosen for the time being to use only some of the Dublin Core elements. Dublin Core also allows for extensibility. What this means is that these core elements can be added to and built upon to meet the needs of the creating organization; whether this means providing greater descriptive detail, domain specific information, or information to support preservation activities. Dublin Core is meant to be a general standard that will coexist with richer standards.

We understand that not every institution has the financial resources, staff, or technical expertise necessary to implement a full-fledged metadata program. By providing best practices for institutions who choose to implement Dublin Core, we hope to make participation in Indiana Memory an option for all cultural heritage institutions across the state. These best practices are intended to provide everyone with the information they need to create metadata records with confidence regardless of whether the records are created by professional catalogers, library staff, student workers, or volunteers.

Key points about Dublin Core:
- Simple and easy to learn
- Accepted standard [ANSI/NISO Z29.85-2001]
- Requires minimal training
- Easily adapted for local circumstances
- Enables record harvesting

7. What about collections created using other metadata standards?
Indiana Memory intends to ensure as broad a range of access to these materials as possible by participating in the Open Archives Initiative (OAI). OAI is a protocol for sharing information by making metadata open to harvesting. In order for OAI to function effectively, the harvested records must follow the same standards and employ a set of common elements. OAI requires the use of Unqualified Dublin Core to achieve this goal of having common elements to harvest, and allows more robust metadata formats to be exposed as well. The metadata records, not the actual digital items, are then compiled from all participating organizations worldwide into a single, searchable interface. By providing

crosswalks to Dublin Core, Indiana Memory will open all collections to OAI harvesting regardless of the native metadata standard used for the collection.

8. Besides Dublin Core, what are some of the other descriptive metadata schemas available?

EAD (Encoded Archival Description)

- Type of collection: Archival-processed groups of materials whose organization and/or provenance is significant. These materials will generally be hierarchically arranged natural groupings assembled by a collector or creator (e.g., the papers or correspondence of a certain individual) rather than less-tightly related groups of materials assembled by a holding institution. A Finding Aid or inventory may or may not already exist. Materials will often be unpublished. Description at the collection level is necessary, lower levels of description may or may not be appropriate. Materials described may or may not be available in digital form.
- Appropriate metadata standard: EAD 2002
- Example collection: Finding Aids in the Online Archive of California <http://www.oac.cdlib.org/>
- Resources to consult: Official EAD Version 2002 Web Site <http://www.loc.gov/ead/>; EAD Help Pages, especially the EAD 2002 Cookbook <http://www.iath.virginia.edu/ead/>
- Usage notes: EAD 2002 can be used to describe the collection at the item, folder-only, or collection-only level. One EAD document should be created for each collection.

TEI

- Type of collection: Text collections intended for full-text searching in an online environment. Full text may or may not be intended to be used together with page images of the original document.
- Appropriate metadata standard: TEI P4
- Example collection: Indiana University, Wright American Fiction, 1851-1875 <http://www.letrs.indiana.edu/web/w/wright2/>
- Resources to consult: TEI Text Encoding in Libraries Guidelines for Best Encoding Practices <http://www.indiana.edu/~letrs/tei/>; TEI Guidelines <http://www.tei-c.org/Guidelines2/index.htm/>
- Usage notes: Choose an Encoding Level as described in the TEI Text Encoding in Libraries Guidelines for Best Encoding Practices. Bibliographic information for resource discovery is encoded in the TEI Header. The entire full text of the resource is marked up structurally in the bulk of the TEI document, and this markup is used for powerful full-text searching.

MODS

- Type of collection: Materials with existing item-level MARC cataloging
- Appropriate metadata standard: MODS 3.0
- Example collection: University of Chicago Chopin Early Editions Project <http://chopin.lib.uchicago.edu/>
- Resources to consult: MODS official Web site <http://www.loc.gov/standards/mods/>; MODS User Guidelines <http://www.loc.gov/standards/mods/v3/mods-userguide.html>
- Usage notes: Items for which MARC cataloging already exists can be transformed into MODS records for use in digital library applications.

VRA Core

- Type of collection: Art images whose users require in-depth indexing and retrieval using expert terms for genre, culture, style, period, etc.
- Appropriate metadata standard: VRA Core Categories 3.0

- Example collection: Cleveland Museum of Art Collections <http://www.clevelandart.org/Explore/> (From each item view, click “More Information” to see VRA image metadata.)
- Resources to consult: VRA Core version 3 home page <http://www.vraweb.org/vracore3.htm>; CC:DA Task Force on VRA Core Categories Summary Report <http://www.libraries.psu.edu/tas/jca/ccda/docs/tf-vra1.pdf>
- Usage notes: VRA Core is more robust than Dublin Core for describing art images and metadata in this format is consequently more powerful but more expensive to create.
- VRA Core contains both "work" records describing an actual art object, and "image" records describing representations of views of that object (slides, digital images, etc.) held by an institution. Best practice in creating VRA Core records is to populate fields using appropriate controlled vocabularies such as ULAN and TGM, and the rules described in Cataloging Cultural Objects <http://www.vraweb.org/CCOweb/>.

GEM

- Type of collection: Learning objects that serve education communities (pre-school, K-12, higher education, vocational and technical training, and lifelong learning). These materials require classification criteria special to the education community, such as education level of the target audience, pedagogical methodology, and standards alignment.
- Appropriate metadata standard: Dublin Core Metadata Element Set 1.1 as extended in GEM profile
- Example collection: NASA Space Science Education Resource Directory <http://teachspacescience.org/> (From each item view, click “More Information” to see GEM metadata.)
- Resources to consult: GEM 2.0 Elements and Semantics <http://www.geminfo.org/Workbench/GEM2_elements.html>; Indiana Humanities Council Smart Desktop metadata profile < http://www.ihc4u.org/sd_metadata.htm>.
- Usage notes: Both GEM metadata element set and SDI metadata profile are based on Qualified Dublin Core. GEM element set and profile includes 7 additional elements with detailed qualifiers. Local institute can create qualifiers or metadata elements to meet special request of the local audience and collection, although this practice reduces the interoperability of the metadata created. However, dropping elements from the GEM element set is usually less a problem. One-on-one assistance for those who want to create GEM metadata is available at <http://www.geminfo.org/decision.html>; emerging SDI Application Profile <http://www.ihc4u.org/sd_metadata.htm>, still in working draft status, suggests best practices with respect to the usage of GEM element set.

9. If I choose a standard other than Dublin Core, can my collection still be part of Indiana Memory?

You may choose any standard that works for your collections and still contribute your metadata to Indiana Memory. This is possible because of the use of crosswalks. Dublin Core has value as a means for crosswalking, or mapping, between richer, more complex metadata standards. In essence, a crosswalk is a table that maps the relationships and equivalencies between two or more metadata standards. This in turn allows search engines to effectively search across heterogeneous databases. In order to be able to search across collections built around various metadata standards, there needs to be a way to translate the data into a shared language. Dublin Core provides this shared language. Because of this ability to crosswalk from other metadata standards to Dublin Core, participants in Indiana Memory are able to implement or continue using other metadata standards, such as MARC, Encoded Archival Description (EAD), Text Encoding Initiative (TEI), etc.

Indiana Memory will create and maintain base crosswalks that translate between the various metadata standards that it recommends. Institutions using a locally developed metadata format or a standard not covered by the Indiana Memory crosswalks, have the option to create their own crosswalks. Indiana Memory will consult with these institutions to minimize the loss of information during the transformation process and maximize interoperability. Other institutions need only ensure that the metadata standard they choose is among the standards supported by the Indiana Memory crosswalks.

10. What other metadata-related acronyms should we be aware of?

- METS <http://www.loc.gov/standards/mets/>. METS is an XML schema allowing users to "wrap" existing descriptive metadata in any format with structural, technical, administrative, preservation, and meta-metadata to create a single metadata object for a resource. METS provides extension schemas with recommended technical metadata for still images, audio, and video.
- MIX <http://www.loc.gov/standards/mix/>. MIX is an XML schema implementation of the NISO draft standard Z39.87-2002, Data Dictionary – Technical Metadata for Digital Still Images.
- PREMIS <http://www.oclc.org/research/projects/pmwg/>. PREMIS is not a metadata element set, rather it is an initiative to develop a set of core elements for preservation metadata for the purpose of long-term preservation of digital objects. Some preliminary recommendations of this group which include some metadata element proposals may be found in the report Preservation Metadata and the OAIS Information Model: A Metadata Framework to Support the Preservation of Digital Objects <http://www.oclc.org/research/projects/pmwg/pm_framework.pdf>.

***This document is based on documents entitled "Choosing a Metadata Standard for Your Digital Project," "Metadata Guidelines for the Indiana Digital Library," and "Indiana Digital Library Best Practices for the Use of Qualified Dublin Core," all created in August 2004 by Lisa Cahill (Indiana Historical Society), Jenn Riley (Indiana University), and Yu Su (Indiana Humanities Council) of the Indiana Digital Library Summit Metadata Working Group. The Dublin Core element table is a modified version of "Required Dublin Core Elements for IUPUI Digital Collections in CONTENTdm" created by Kristi Palmer (IUPUI University Library) in August 2006.*