



Smithsonian  
Institution

# **EDAN Phase 1 SDLCM Documentation**

## **Index Metadata Model**

Collections Systems & Digital Assets Division,  
Office of the Chief Information Officer

DRAFT

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## 1 Document Purpose

This document represents the metadata model to be used by the EDAN Phase 1 [Solr-Lucene] metadata index. It has been developed as part of the Smithsonian Institution's system development life cycle management (SDLCM) processes for small to medium sized system implementation projects and should be viewed in conjunction with the EDAN Phase 1 system requirements and design documentation.

## 2 Revision History

Version	Event	Issue Date	Responsible Party
1.01	Initial CISMCM and SIRISMCM accepted draft (IMM14). Approved at the TRB Requirements Review on 12/16/2008 with no changes.	10/28/2008	George Bowman, CISMCM, SIRISMCM, TRB
1.02	Cleaned up all the <xml> notes, updated document format.	02/19/2009	George Bowman
1.03	Fixed online-media-type <xml> Added freetext Object Rights	03/31/2009	George Bowman
1.04	Added <geoLocation> tag for structured place terms	09/10/2009	George Bowman
1.05	Added <onPhysicalExhibit> flag Added <exhibition> block for structured exhibit data. Added <setName > example for exhibition title  Added caption attribute for individual online_media links Enhanced definition and examples for online_media	08/19/2010	George Bowman
1.06	Limit record_ID to 40 characters	2/14/2012	George Bowman
	Add CSDAD, OCIO footer	3/18/15	George Bowman



### 3 Background

Although the general public views the Smithsonian as a single institution rather than as a group of individual museums, SI lacks any way of providing a unified view into its collections, library, and archive data. The Smithsonian currently maintains 10 TMS, 11 EMu, 8 Horizon, and 1 Mimsy XG repositories as well as 1 enterprise digital asset management system. Existing web interfaces are largely system-specific. While the Smithsonian has a business need for separate museum, library and archive systems, there is also a need for a centralized, reusable, automated process for searching and accessing metadata held within these systems. The project for creation of this metadata search and access layer and associated services has been named “EDAN”. These types of services fall under the general heading of “On-Line Discovery”. EDAN is a set of on-line discovery tools and will not replace or consolidate any of the underlying CISs.

In August 2007 the Smithsonian Institution applied for a grant through the Getty Foundation for development of a phase one EDAN prototype. The proposal / grant application was a joint effort between the Smithsonian Photography Initiative (SPI) and the Office of the Chief Information Officer (OCIO) and was submitted through SPI. The Getty Foundation approved the grant request on 14 February 2008. The EDAN Phase 1 project includes 4 areas:

1. Development of a high-level metadata model and set of services for search and retrieval of metadata from SI’s collections, library and archive systems;
2. Development of an image delivery service
3. Development of a tag creation service; and
4. Enhancement of SPI’s website using the EDAN Phase 1 prototype.

All work under the grant is was completed by September 2009. However, enhancements continue to be made.

This document is concerned only with item 1. This metadata model will support a common searching index / metadata retrieval layer. Its purpose is to facilitate public and internal access to existing SI collections data.

It describes a standards-based metadata model that will drive the indexing of data pulled from SI museum, library and archive systems.



### 4 Process

The following process was used to guide the development and enhancement of the Index Metadata Model.

1. Assign a project lead – Completed
2. Develop a draft / straw metadata model based on reviews of metadata standards and each Smithsonian CIS for presentation to the wider SI CIS communities. – Completed
3. Present the metadata model development project to the CISM and SIRISM along with a draft / straw model that will serve as a starting point for further requirements gathering and refinement. – Completed
4. Solicit comments on the draft model from unit subject experts – Identify and meet with CIS owners on behalf of their constituents. Refine the model. (Two rounds of Interactive review & commenting participations took place and detailed comments were collected from NMAH, NMNH, NMAI, NASM, SAAM, NMAfA, ACM, Freer/Sackler, HMSG, SIL, and AAA.) – Completed
5. Prototype the model in a development environment, using Solr / Lucene, giving SI staff the opportunity to comment on the model in action so it can be further refined based on feedback received. – Completed
6. Implement a phase 1 EDAN metadata model. – Completed

### 5 The Model – Data Fields for Indexing

The following is a collection of data elements as relevant for public search and brief display. The model includes two types of fields, which are ALL keyword indexed:

- A flexible set of descriptive fields (defined in gray table on page 6)
  - These are fields with meaningful keywords and helpful labels to help users achieve a basic understanding of the objects or resources
- 30 structured indexing fields (defined in orange table on page 9)
  - These are fields with structured data that come from vocabulary lists which can be exploited for scoping search results.

#### 5.1 Descriptive Fields

The data contributors determine what data to submit, along with individual labels for each field, on a record-by-record basis. Contents in these fields are included to add meaningful keywords



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and display elements. The elements below are suggested guidelines, based on what has been contributed so far, but other elements can be added, as the data contributors see fit.

Note: The Title, Title\_sort, data\_source, unit\_code, and Record\_ID fields are mandatory in this implementation.

FreeText Fields	Description of fields	Examples
<b>Record Link</b> (non-repeatable)	Link to this record in its home system  <record_link>	<b>Ex:</b> <a href="http://npgportraits.si.edu/eMuseumNPG/code/emuseum.asp?rawsearch=ObjectID/,is/,/86179/,/false/,/false&amp;newprofile=CAP&amp;newstyle=single">http://npgportraits.si.edu/eMuseumNPG/code/emuseum.asp?rawsearch=ObjectID/,is/,/86179/,/false/,/false&amp;newprofile=CAP&amp;newstyle=single</a>
<b>Title/Object-name</b> (mandatory, non-repeatable)  (title_sort is also mandatory, non-repeatable)	A primary or descriptive title for the object or resource. For objects or resources which have a formal title, that would be used. For other objects or resources, some concatenation of descriptive terms should be assembled that attempts to create a unique label.  <title label="Title"> <title label="Object Name">  <title_sort> normalized for sorting	<b>Ex:</b> Einstein's Brier Pipe Postage stamp plate block Jan Matulka papers, 1923-1960
<b>Identifier</b>	Any ID_numbers, etc., necessary to identify the object or resource  <freertext category="identifier" label="Accession #"> <freertext category="identifier" label="Catalog #">	<b>Ex:</b> 1989.0496.10006
<b>Physical Description</b>	A description of the way the object or resource looks, its physical characteristics, how it was prepared, etc., and the manner in which the described materials are subdivided into smaller units. This includes: <ul style="list-style-type: none"> <li>• Orientation/arrangement</li> <li>• Physical Description <ul style="list-style-type: none"> <li>○ Format/Extent</li> <li>○ Sex/Age/Weight/Size</li> <li>○ Processes &amp; Techniques</li> <li>○ Storage medium/regime</li> <li>○ Dimensions</li> </ul> </li> </ul> <freertext category="physicalDescription" label="Physical description">  <freertext category="physicalDescription" label="Dimensions">  <freertext category="physicalDescription" label="Medium">	<b>Ex:</b> 3.37 cu. ft. (3 document boxes) (1 12x17 box) (4 5x8 boxes) 1 photonegative: glass; 5 x 7 in 4 linear meters and 5 microfilm reels Carpet is of Kilim type 3 adult male skulls Preparation: Alcohol (Ethanol) New Coccine (or Crocein Scarlet) dye Autochrome process Blueprint process Cibachrome™  5 x 7 in  metal: Bronze Pencil and india ink on board Paper, ink, gum



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FreeText Fields	Description of fields	Examples
<b>Gallery Label</b>	Text of Exhibition label  <freetext category="galleryLabel" label="Gallery Label"> <freetext category="galleryLabel" label="Tombstone">	
<b>Notes</b>	<p>A textual description of the object or resource, including abstracts in the case of document-like objects or content descriptions in the case of visual resources. This includes any other information to account for the complexity of the object, such as:</p> <ul style="list-style-type: none"> <li>• Style</li> <li>• Iconography</li> <li>• Original citation of type specimen</li> <li>• Biographical &amp; Historical Context</li> </ul> <p>This also includes any non-controlled terms for any other element, such as</p> <ul style="list-style-type: none"> <li>• Ecological info</li> <li>• Ocean Depth</li> <li>• Era</li> </ul> <p>This may also include a description of a current or future exhibit containing this object, including title, dates if appropriate, location, curator, organizer, sponsor, etc. NOTE: this is not a historical record – current and future exhibitions only!</p> <p>&lt;freetext category="notes" label="Notes"&gt; &lt;freetext category="notes" label="Summary"&gt; &lt;freetext category="notes" label="Iconographic analysis"&gt; &lt;freetext category="notes" label="Exhibition Details"&gt;</p>	<p><b>Ex:</b> Wooden baseball bat used by Stan Musial during the 1957-1958 baseball season and used to break the 3000 hit goal.</p> <p>Soon after the first federal duck stamp appeared in 1934, states began issuing their own hunting stamps.</p>
<b>Publisher</b>	For publications: the name of the publisher or distributor and any qualifying terms, such as an indication of function.  <freetext category="publisher" label="Publisher"> <freetext category="publisher" label="Distribution"> <freetext category="publisher" label="Location">	<p><b>Ex:</b> Rand McNally U.S. Dept. of Agriculture, Forest Service Gauthier-Villars (distributor)</p>
<b>Object Type</b>	The categories of the object or resource.  <freetext category="objectType" label="Type">	<p><b>Ex:</b> book painting diary holotype Dead letter office materials</p>





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FreeText Fields	Description of fields	Examples
<b>Taxonomic Name</b>	Any taxonomic terms associated with the object or resource.  <freetext category="taxonomicName" label="Taxonomy">	<b>Ex:</b> Cephalopoda—Sepiidae—Sepia-officialis Cetacea Cephalopoda—Ommastephidae—Dositicus—gigas
<b>Language</b>	Any languages represented by the object or resource.  <freetext category="language" label="Language">	<b>Ex:</b> French Chinese Hindi Navajo Forward in French with indexes in French and German
<b>Topic</b>	The topical access points of the object or resource.  <freetext category="topic" label="Topic">	<b>Ex:</b> Federal aid to the arts Airplanes, Military African American history Mother & Child World War, 1939-1945 1876: A Centennial Exhibition
<b>Place</b>	Any places associated with the object or resource.  <freetext category="place" label="Place"> <freetext category="place" label="Country"> <freetext category="place" label="Site">	<b>Ex:</b> Africa India Red Sea Maryland Baltimore, Maryland Maryland--Silver Spring Site 16 IV 149 -- archeology
<b>Date</b>	Any dates associated with the object or resource.  <freetext category="date" label="Date">	<b>Ex:</b> 1870-1873 June 10, 1910 Installed, May 2, 1952
<b>Name</b>	Any people, groups (except cultures), titled presentations (exhibitions, expeditions) associated with the object or resource.  <freetext category="name" label="Author"> <freetext category="name" label="Creator"> <freetext category="name" label="Artist"> <freetext category="name" label="Maker"> <freetext category="name" label="Sitter" role="sitter">	<b>Ex:</b> Calder, Alexander, 1898-1976, painter Washington, George, 1732-1799, sitter Apple Computer Hyde Exploring Expedition
<b>Culture</b>	Any cultures represented by the object or resource.  <freetext category="culture" label="Culture"> <freetext category="culture" label="Nationality">	<b>Ex:</b> Dogon (African people) Limba (African people) Kiowa Indians Cheyenne Indians



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FreeText Fields	Description of fields	Examples
<b>Set Name</b>	<p>Any collection names or set name of logical group of object or resource. Consistency is important: This may be used to search for all items in the same collection, i.e., with an exact text match.</p> <p><code>&lt;freetext category="setName" label="See more items in"&gt;</code></p> <p><code>&lt;freetext category="setName" label="On exhibit"&gt;</code></p>	<p><b>Ex:</b> Ivory Soap Advertising Collection 1883-1998. Garden Club of America Collection.</p> <p>(An exhibition) A Brave New World, August 9, 2010 – April 24, 2011</p>
<b>Data Source</b>	<p>The unit or project by whom the data was contributed.</p> <p><code>&lt;freetext category="dataSource" label="Data Source"&gt;</code></p>	<p><b>Ex:</b> National Air and Space Museum Archives Smithsonian Institution Libraries</p>
<b>Credit Line</b>	<p>A brief statement indicating how the work came into the current collection.</p> <p><code>&lt;freetext category="creditLine" label="Credit line"&gt;</code></p>	<p><b>Ex:</b> National Portrait Gallery, Smithsonian Institution; acquired as a gift to the nation through the generosity of the Donald W. Reynolds Foundation.</p>
<b>Object Rights</b>	<p>A brief statement describing rights applicable to the object, not the digital file.</p> <p><code>&lt;freetext category="objectRights" label="Rights"&gt;</code></p>	<p><b>Ex:</b> (c) Edward Smith, 1957.</p>



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FreeText Fields	Description of fields	Examples
<b>Online Media Group</b> (non-repeatable)	<p>Any associated <u>online media</u> URLs</p> <pre>&lt;online_media mediaCount="[how many &lt;media&gt; tags]"&gt;   &lt;media type="..."     thumbnail="[thumbnail link]"     rights="..."     caption="..."&gt;     [[link to media]]   &lt;/media&gt;   &lt;media type="..."     thumbnail="[thumbnail link]"     rights="..."     caption="..."&gt;     [[link to media]]   &lt;/media&gt;   ... &lt;/online_media&gt;</pre> <p>NOTE: &lt;rights attribute&gt; is optional; the rest are not.</p> <p>With the exception of “Exhibition Website” where the link points to an online exhibition in which this object is included, this link must point to a resource ABOUT THIS OBJECT, not a larger group of objects. For example, an audio-tour for an entire exhibit would not be appropriate unless it has a position marker for the discussion of this object.</p>	<p><b>link Ex:</b> Image: <a href="http://sirismm.si.edu/siahistory/imagedb/76-7008.16.jpg">http://sirismm.si.edu/siahistory/imagedb/76-7008.16.jpg</a></p> <p>Finding aid: <a href="http://siarchives.si.edu/findingaids/FARU0347.htm">http://siarchives.si.edu/findingaids/FARU0347.htm</a></p> <p>Exhibit website: <a href="http://wintercounts.si.edu/">http://wintercounts.si.edu/</a></p> <p>Section of an audio tour <a href="http://audio-file-link#marker">http://audio-file-link#marker</a></p> <p>Section of a video tour <a href="http://video-file-link#marker">http://video-file-link#marker</a></p> <p><b>type Ex:</b> Images Finding aids Transcripts Sound recordings Online exhibits Online publications Online collections Exhibit website Video files</p> <p><b>rights Ex:</b> Copyright, Jane Doe, 1983. No Restrictions</p>



## 5.2 Structured Indexing Fields

Data in these fields only come from vocabulary lists. Those vocabulary list terms can be used to allow scoping of search results. If any of these fields are submitted they will be used in the facet (left-side) portion of the interface to help users scope search results. These are ALL optional.

Structured Indexing Fields (from VocabLists)	Description of fields	Examples
<b>Record ID</b> (mandatory, non-repeatable)	The unique system + record ID for the record in its home system.  <i>NOTE: this field is limited to 40 characters and should NOT be changed over time. It should be permanently associated with this record.</i>  <record_ID>	<b>Ex:</b> siris_ari_1234 npm_1989.0496.10006 npg_AD/NPG.74.8
<b>Object Type</b>	The categories of the object or resource. This includes <ul style="list-style-type: none"><li>Form/Genre</li><li>Type Specimen Status</li></ul> <object_type>	<b>Ex:</b> book painting diary artificial heart artifacts holotype
<b>Language</b>	Any languages from vocabulary lists.  <language>	<b>Ex:</b> French Chinese Hindi Navajo
<b>Topic</b>	Any topics from vocabulary lists.  <topic>	<b>Ex:</b> Federal aid to the arts Airplanes, Military African American history Mother & Child World War, 1939-1945 1876: A Centennial Exhibition
<b>Place</b>	Any places from vocabulary lists. Separate elements for each term.  <place>	<b>Ex:</b> Africa India Red Sea Maryland Baltimore Silver Spring



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Structured Indexing Fields (from VocabLists)	Description of fields	Examples
<b>geoLocation</b>	<p>One geoLocation per place, with as many levels filled in as possible. Fill in coordinates if available. This is redundant to the &lt;place&gt; element, but in a form to support a hierarchical display in the form of a map.</p> <pre> &lt;geoLocation&gt;   &lt;L1 type=[Continent   Ocean]&gt;   &lt;L2 type=[Country   Nation   Sea   Gulf   Bay   Sound]&gt;   &lt;L3 type=[State   Province   Department   Country   District   Republic   Sea   Gulf   Bay]&gt;   &lt;L4 type=[County   Island]&gt;   &lt;L5 type=[City   Town]&gt;   &lt;Other type = [anything: examples = Neighborhood, Street, Desert, Park, etc.]&gt;   &lt;points label=[text] dates="yyyy-yyyy"&gt;     &lt;point&gt;       &lt;latitude type=[decimal   degrees]&gt;       &lt;longitude type=[decimal   degrees]&gt;     &lt;/point&gt;     &lt;point&gt;       &lt;latitude type=[decimal   degrees]&gt;       &lt;longitude type=[decimal   degrees]&gt;     &lt;/point&gt;     &lt;point&gt;       &lt;latitude type=[decimal   degrees]&gt;       &lt;longitude type=[decimal   degrees]&gt;     &lt;/point&gt;   &lt;/points&gt; &lt;/geoLocation &gt; </pre> <p>The geoLocation processor will attempt to fill in missing levels by matching as many pieces as possible to geoNames. If you really don't know what you have, just submit &lt;geoLocation&gt;&lt;Other&gt;Where am I&lt;/Other&gt;&lt;geoLocation&gt;</p>	<p><b>Ex.</b></p> <pre> &lt;geoLocation&gt;   &lt;L1 type="Continent"&gt;     North America   &lt;L2 type="Country"&gt;     United States   &lt;L3 type="District"&gt;     District of Columbia   &lt;L5 type="City"&gt;     Washington   &lt;Other type="Neighborhood"&gt;     Adams Morgan &lt;/geoLocation&gt;  &lt;geoLocation&gt;   &lt;L1 type="Ocean"&gt;     Pacific   &lt;L2 type="Country"&gt;     United States   &lt;L3 type="State"&gt;     Hawaii   &lt;L4 type="Island"&gt;     Hawaii   &lt;Other type="Park"&gt;     Volcanoes National Park &lt;/geoLocation&gt; </pre> <p>See appendix for examples</p>
<b>On Physical Exhibit</b>	<p>An indication that the object is currently on display for the public.</p> <pre> &lt;onPhysicalExhibit&gt; </pre>	<p><b>Yes</b></p>



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Structured Indexing Fields (from VocabLists)	Description of fields	Examples
<b>Exhibition</b>	<p>Structured data about this object in an exhibit. Most of this will not be display in collections.si.edu [use freetext for display], however it will be output with the &lt;exhibition&gt; block for other applications using the Metadata Delivery Service, potentially for something like a virtual gallery tour.</p> <p>NOTE: this is not a historical record. Current and future exhibitions only!</p> <pre>&lt;exhibition&gt;   &lt;exhibitionTitle&gt;   &lt;exhibitionType&gt;   &lt;building&gt;   &lt;room&gt;   &lt;displayUnit&gt;   &lt;externalLink type="audio, etc."&gt;   &lt;exhibitionCurator&gt;   &lt;exhibitionOrganizer&gt;   &lt;exhibitionSponsor&gt;   &lt;exhibitionLabel&gt; &lt;/exhibition &gt;</pre> <p>The external Link is for THIS OBJECT IN THIS EXHIBIT. To include an audio- or video-tour link on an object record, the link MUST point to a position marker in the audio/video file where this object is discussed.</p> <pre>&lt;externalLink type="audio"&gt;http://audio-file-link#marker</pre>	<p><b>Ex.</b></p> <pre>&lt;exhibitionTitle&gt;   A Brave New World, August   9, 2010 – August 29, 2010   (use dates as appropriate)</pre> <pre>&lt;exhibitionType&gt;   A controlled list   • Online Exhibit   • Smithsonian exhibition   • Traveling exhibition   • Loan   • ??</pre> <pre>&lt;building&gt;   Sackler Gallery &lt;room&gt;   Gallery 13 &lt;displayUnit&gt;   Case 10</pre> <pre>&lt;externalLink&gt;   A controlled list   • exhibitWebsite   • audio   • video   • image   • URL</pre>
<b>Date</b>	<p>Any dates in a normalized form.</p> <pre>&lt;date&gt;</pre>	<p><b>Ex:</b></p> <p>1870s 1910s 1950s</p>
<b>Name</b>	<p>Any people, groups (except cultures), titled presentations (exhibitions, expeditions) associated with the object or resource, from vocabulary lists.</p> <pre>&lt;name&gt;</pre>	<p><b>Ex:</b></p> <p>Calder, Alexander Washington, George Apple Computer Hyde Exploring Expedition</p>
<b>Culture</b>	<p>Any culture terms from vocabulary lists.</p> <pre>&lt;culture&gt;</pre>	<p><b>Ex:</b></p> <p>Dogon (African people) Limba (African people) Kiowa Indians Cheyenne Indians</p>



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Structured Indexing Fields (from VocabLists)	Description of fields	Examples
<b>Data Source</b> (both data_source and unit_code are mandatory, non-repeatable)	The unit or project by whom the data was contributed. <data_source> <unit_code> just shorthand	<b>Ex:</b> National Air and Space Museum Archives Smithsonian Institution Libraries <unit_code>SIL
<b>Online Media Type</b>	Any types of associated <u>online media</u> associated with this record, using authorized terms. This is included to enable users to scope searches only to records with a specified kind of online media. <online_media_type>	<b>Ex:</b> Images Finding aids Transcripts Sound recordings Online exhibits Online publications Online collections
<b>Rights for Online Media File</b>	Ideally we will have standard terms. This is included to enable users to scope searches only to images without copyright restrictions. <online_media_rights>	<b>Ex:</b> No Restrictions Restrictions May Exist Restrictions Exist
<b>Related Record</b>	Use any one of the related object's identifiers. This could be used for <ul style="list-style-type: none"> <li>• Taxonomy → Specimen</li> <li>• Art Inventories → SAAM objects</li> <li>• Parts → Whole</li> <li>• Illustrations → Objects</li> <li>• Bibliographies → Books &amp; Articles</li> <li>• Collection descriptions → Finding Aids</li> </ul> <related_record_identifier> for 'scoping' or 'redirecting' to the related record(s) with the matching identifier.	<b>Ex:</b> 1989.0496.10006 (that's the accession# of the other record)
<b>Taxon-Kingdom</b>	Taxonomic terms for Kingdom <tax_kingdom>	<b>Ex:</b> Animalia Plantae Fungi Protista Archaea Eubacteria
<b>Taxon-Phylum</b>	Taxonomic terms for Phylum <tax_phylum>	<b>EX:</b> Chordata Arthropoda
<b>Taxon-Division</b>	Taxonomic terms for Division <tax_division>	<b>Ex:</b> Magnoliophyta



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<b>Taxon-Class</b>	Taxonomic terms for Class <tax_class>	<b>Ex:</b> Chondrichthyes Aves Malacostraca
<b>Taxon-Order</b>	Taxonomic terms for Order <tax_order>	<b>Ex:</b> Orectolobiformes Lamniformes Passeriformes Decapoda
<b>Taxon-Family</b>	Taxonomic terms for Family <tax_family>	<b>Ex:</b> Rhincodontidae Cetorhinidae Vireonidae
<b>Tabxon-Sub-Family</b>	Taxonomic terms for sub-family if one exists <tax_sub-family>	<b>Ex:</b> Bambusoideae Etmopterinae Imbricariinae
<b>Scientific_name</b>	Taxonomic terms for genus and species <scientific_name>	<b>Ex:</b> Rhincodon typus Cetorhinus maximus Vireo philadelphicus
<b>Common name</b>	Common names <common_name>	<b>Ex:</b> basking shark blue crab Philadelphia Vireo
<b>Geo-age-Era</b>	Geological Age Era <geo_age-era>	<b>Ex:</b> Archean Cenozoic Mesozoic Proterozoic
<b>Geo-Age-System</b>	Geological Age System <geo_age-system>	<b>Ex:</b> Eoarchean Mesoarchean Neoarchean
<b>Geo-Age-Series</b>	Geological Age Series <geo_age-series>	<b>Ex:</b> Holocene Miocene Pleistocene Plio-Pleistocene





## EDAN Phase 1 – Index Metadata Model

Structured Indexing Fields (from VocabLists)	Description of fields	Examples
<b>Geo-Age-Stage</b>	Geological Age Stage <geo_age-stage>	<b>Ex:</b> Aptian Changhsingian Norian
<b>Strat-Group</b>	Stratigraphy Group <strat_group>	<b>Ex:</b> Absaroka Volcanic Super Group Admire Group Allegheny Group
<b>Strat-Formation</b>	Stratigraphy Formation <strat_formation>	<b>Ex:</b> Harpersville Fm Inferior Oolite Fm Pottsville Fm
<b>Strat-Member</b>	Stratigraphy Member <strat_member>	<b>Ex:</b> Francis Creek Sh Mbr Black Creek Coal Bed Jefferson Coal Bed
<b>Usage Flag</b>	Short codes to group records into project sets so an external applications can be locked down to specific sets of records. <usage_flag>	<b>Ex:</b> SPI LVM



## 6 Concept Illustration: Indexing vs. Description Fields

The following color-coded diagram is for concept illustration only, showing use of structured indexing fields vs. descriptive text fields. It is not meant to represent a finished product. There are two corresponding tables below with descriptions of the field content.

VocabList terms on the left side.

Brief records are displayed on the right side.

Structured Indexing Fields from <VocabList> values

Descriptive Fields <FreeText> values

Search results for: bees | Collections Search Center, Smithsonian Institution - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://collections.si.edu/search/results.jsp?view=&dsort=&date\_slider=&q=bees

Search results for: bees | Collections...  
MODIFY YOUR SEARCH

Search Term  
bees  
 Only return results with online media  
apply

Online Media  
Frequency Alphabetical  
Images + - (2293)  
Electronic resource + - (34)  
Full text documents + - (31)  
Finding aids + - (6)  
Catalog Cards + - (4)

Type  
Frequency Alphabetical  
Taxonomic type specimens + - (3168)  
Holotypes + - (811)  
Books + - (422)  
Lectotypes + - (392)  
Paintings + - (147)  
Archival materials + - (80)  
Photographs + - (75)  
Trade catalogs + - (72)  
Portraits + - (68)  
Syntypes + - (43)  
[see all](#)

Search Results  
5252 documents - page 1 of 263

bees

**Peponapis pruinosa (Say)** expand

PREPARATION: Pen & Ink on Scratchboard  
TAXONOMY: Peponapis pruinosa (Say) : Animalia : Arthropoda : Insecta : Hymenoptera : Apidae  
DATA SOURCE: NMNH - Entomology Dept.

**Apis adansonii** expand

PREPARATION: Pen & Ink on Bristol  
TAXONOMY: Apis adansonii : Animalia : Arthropoda : Insecta : Hymenoptera : Apidae  
DATA SOURCE: NMNH - Entomology Dept.

**Apis adansonii** expand

PREPARATION: Pen & Ink on Bristol  
TAXONOMY: Apis adansonii : Animalia : Arthropoda : Insecta : Hymenoptera : Apidae

Done



## 7 Appendix / Reference

### 7.1 Abbreviations and Acronyms

AAA	[SI] Archives of American Art
AAG	[SI OFEO HSD] Archives of American Gardens
ACM	[SI] Anacostia Community Museum
ACNMAH	Archives Center NMAH
CFCH	[SI] Center for Folklife and Cultural Heritage
CHNDM	[SI] Cooper Hewitt National Design Museum
CIO	Chief Information Officer
CIS	Collection Information System
CM	Configuration Management
COTS	Commercial Off-The-Shelf [software]
CSI	Cross Search Interface
CTO	Chief Technology Officer
DAMS	[Artesia] Digital Asset Management System
DBA	Database Administrator
DBMS	Database Management System
DDD	Detailed Design Document
DR	Discrepancy Report
EDAN	[SI] Enterprise Digital Asset Network
EEPA	[SI NMAfA] Eliot Elisofon Photographic Archives
EMu	[KE] Electronic Museum
ETL	Extract, Transform, Load
FSGA	[SI] Freer and Sackler Galleries of Art
HIP	[SirsiDynix] Horizon Information Portal
HLA	High-Level Architecture
HMSG	[SI] Hirshhorn Museum and Sculpture Garden
IDS	Image Delivery Service (as used here – more commonly an Intrusion Detection System)
IRM	Information Resource Management
JSON	JavaScript Object Notation
LCM	Life Cycle Management (aka SDLCM / System Development Life Cycle Management)
MARC	MAchine-Readable Cataloging
METS	Metadata Encoding and Transmission Standard
Mimsy	[Willoughby] Mimsy XG (previously Multi Mimsy)
MODS	Metadata Object Description Schema
N/A	Not Applicable



## EDAN Phase 1 – Index Metadata Model

NAA	[SI NMNH] National Anthropological Archives
NASM	[SI] National Air and Space Museum
NMAAHC	[SI] National Museum of African American History and Culture
NMAfA	[SI] National Museum of African History
NMAH	[SI] National Museum of American History
NMAI	[SI] National Museum of the American Indian
NMNH	[SI] National Museum of Natural History
NPG	[SI] National Portrait Gallery
NPM	[SI] National Postal Museum
NZP	[SI] National Zoological Park
OCIO	[SI] Office of the Chief Information Officer
ODBC	Open DataBase Connectivity
OFE0	[SI] Office of Facilities Engineering and Operations
OITO	[SI OCIO] Office of Information Technology Operations
OSM	[SI OCIO] Office of System Modernization
PA	Product Assurance
RDBMS	Relational Database Management System
SAAM	Smithsonian American Art Museum
SAPA	[SI OCIO] System Architecture and Product Assurance
SD	Smithsonian Directive
SI	Smithsonian Institution
SIL	Smithsonian Institution Libraries
SIRIS	Smithsonian Institution Research Information System
SITES	Smithsonian Institution Traveling Exhibition Service
SLC	Smithsonian Latino Center
SPI	Smithsonian Photography Initiative
SPS	Smithsonian [Office of] Photographic Services
SQL	Structured Query Language
TBD	To Be Determined
TMS	[Gallery Systems] The Museum System
TN	Technical Note
TRB	Technical Review Board
TSG	Technical Standard and Guideline
XML	Extensible Markup Language

### 7.2 Associated Documentation and References

- EDAN Phase 1 SDLCM Documentation: Project Management Plan
- EDAN Phase 1 SDLCM Documentation: Functional Requirements and Constraints
- Smithsonian Directive 920 – Life Cycle Management, August 2002



- Smithsonian Technical Standard and Guideline IT-920-09 Data Management Planning, Version 1.1, March 2006

DRAFT



## 8 Appendix: Guidelines for the geoLocation tag

### 8.1 Overview of the <geoLocation> structure

Six levels are explicitly supported, L1 through L5 plus “Other”. They must be in descending order, from general to specific. Each tag is optional and repeatable, as long as the data makes sense in descending order. Each geoLocation tag represents ONE place name.

```
<geoLocation>
  <L1 type=[Continent | Ocean]>
  <L2 type=[Country | Nation | Sea | Gulf | Bay | Sound]>
  <L3 type=[State | Province | Department | Country | District | Republic | Sea | Gulf | Bay]>
  <L4 type=[County | Island]>
  <L5 type=[City | Town]>
  <Other type = [anything: examples = Neighborhood, Street, Desert, Park, etc.]>
  <points label=[text] dates="yyyy-yyyy">
    <point>
      <latitude type=[decimal | degrees]>
      <longitude type=[decimal | degrees]>
    </point>
    <point>
      <latitude type=[decimal | degrees]>
      <longitude type=[decimal | degrees]>
    </point>
    <point>
      <latitude type=[decimal | degrees]>
      <longitude type=[decimal | degrees]>
    </point>
  </points>
</geoLocation >
<geoLocation >
  Blah blah
</geoLocation >
```

#### **PURPOSE**

- This will enable data contributors to submit data in a standard form, so users can
  - scope searches by clicking on a geopolitical entry on a map (e.g., give me everything in Massachusetts).
  - Include narrower terms automatically (e.g., “United States” will include items cataloged as plain “Maryland”), and allow users to drill down in a hierarchical fashion.
  - See places in a result set represented on the map.



## 8.1.1 Example 1. Missing level: A neighborhood, without a county.

```
<geoLocation>
  <L1 type="Continent">          North America          </L1>
  <L2 type="Country">           United States           </L2>
  <L3 type="District">         District of Columbia    </L3> -- no county (L4)
  <L5 type="City">             Washington             </L5>
  <Other type="Neighborhood">  Adams Morgan           </Other>
</geoLocation>
```

## 8.1.2 Example 2. Two "others", still from bigger to smaller. Missing level: A city park in a borough, without a county.

```
<geoLocation>
  <L1 type="Continent">          North America          </L1>
  <L2 type="Country">           United States           </L2>
  <L3 type="State">             New York                </L3>
  <L5 type="City">              New York                </L5> -- no county (L4)
  <Other type="Borough">       Manhattan              </Other>
  <Other type="Park">          Central Park            </Other>
</geoLocation>
```

## 8.1.3 Example 3. A fully-qualified city, showing the *United States in North America*.

```
<geoLocation>
  <L1 type="Continent">          North America          </L1>
  <L2 type="Country">           United States           </L2>
  <L3 type="State">             New York                </L3>
  <L4 type="County">           Dutchess County         </L4>
  <L5 type="City">             Poughkeepsie           </L5>
</geoLocation>
```

## 8.1.4 Example 4. A national park, showing the *United States in the Pacific Ocean*.

```
<geoLocation>
  <L1 type="Ocean">             Pacific                  </L1>
  <L2 type="Country">           United States           </L2>
  <L3 type="State">             Hawaii                  </L3>
  <L4 type="Island">           Hawaii                  </L4>
  <Other type="Park">          Volcanoes National Park </Other>
</geoLocation>
```

## 8.1.5 Example 5. The Ross Ice Shelf

```
<geoLocation>
  <L1 type="Continent">          Antarctica              </L1>
  <Other type="Ice shelf">      Ross Ice Shelf          </Other>
</geoLocation>
```



**8.1.6 Example 6. A country which has “Departments” instead of states or provinces.**

```

<geoLocation>
  <L1 type="Continent">          South America          </L1>
  <L2 type="Country">           Bolivia                 </L2>
  <L3 type="Department">       La Paz                 </L3>
  <L4 type="Province">         Eliodoro Comacho       </L4>
  <L5 type="City">             Puerto Acosta          </L5>
</geoLocation>

```

**8.1.7 Example 7. Showing a country which has “Provinces” instead of states.**

```

<geoLocation>
  <L1 type="Ocean">            Indian Ocean           </L1>
  <L2 type="Country">         Indonesia             </L2>
  <L3 type="Province">       Riau Islands          </L3>
  <L4 type="Island">         Batam                 </L4>
</geoLocation>

```

**8.2 Ambiguity is not uncertainty**

All levels are repeatable, as long as it doesn't break the hierarchy.

**8.2.1 Example 8. Yellowstone National Park is in three states, but the “Old Faithful” geyser is only in Wyoming.**

This way, if the user scopes to any of the three states, Wyoming, Montana, or Idaho, he will get records about the whole Yellowstone park. But if he scopes to Montana or Idaho he won't get the record about Old Faithful.

```

<geoLocation>
  <L1 type="Continent">       North America          </L1>
  <L2 type="Country">       United States          </L2>
  <L3 type="State">         Wyoming               </L3>
  <L3 type="State">         Montana               </L3>
  <L3 type="State">         Idaho                 </L3>
  <Other type="Park">       Yellowstone National Park </Other>
</geoLocation>
<geoLocation>
  <L1 type="Continent">       North America          </L1>
  <L2 type="Country">       United States          </L2>
  <L3 type="State">         Wyoming               </L3>
  <Other type="Park">       Yellowstone National Park </Other>
  <Other type="Geyser">     Old Faithful           </Other>
</geoLocation>

```

**8.2.2 Example 9. The Sahara and Chihuahuan deserts cover multiple countries.**

```

<geoLocation>
  <L1 type="Continent">       Africa                 </L1>
  <L2 type="Country">       Algeria                </L2>

```





<L2 type="Country">	Chad	</L2>
<L2 type="Country">	Egypt	</L2>
<L2 type="Country">	Libya	</L2>
<L2 type="Country">	Mali	</L2>
<L2 type="Country">	Mauritania	</L2>
<L2 type="Country">	Morocco	</L2>
<L2 type="Country">	Niger	</L2>
<L2 type="Country">	Western Sahara	</L2>
<L2 type="Country">	Sudan	</L2>
<L2 type="Country">	Tunisia	</L2>
<Other type="Desert">	Sahara Desert	</Other>
</geoLocation>		
<geoLocation>		
<L1 type="Continent">	North America	</L1>
<L2 type="Country">	United States	</L2>
<L2 type="Country">	Mexico	</L2>
<Other type="Desert">	Chihuahuan Desert	</Other>
</geoLocation>		

### 8.2.3 Example 10. The Russian Federation is on two continents, but its Chechen Republic is only in Asia.

<geoLocation>		
<L1 type="Continent">	Europe	</L1>
<L1 type="Continent">	Asia	</L1>
<L2 type="Country">	Russian Federation	</L2>
</geoLocation>		
<geoLocation>		
<latitude> ...		
<longitude> ...		
<L1 type="Continent">	Asia	</L1>
<L2 type="Country">	Russian Federation	</L2>
<L3 type="Republic">	Chechnya	</L3> -- no county
<L5 type="City">	Grozny	</L5>
</geoLocation>		

### 8.2.4 Example 11. The Snake River is in two counties in Minnesota.

<geoLocation>		
<L1 type="Continent">	North America	</L1>
<L2 type="Country">	United States	</L2>
<L3 type="State">	Minnesota	</L3>
<L4 type="County">	Aitkin County	</L4>
<L4 type="County">	Pine County	</L4>
<Other type="River">	Snake River	</Other>
</geoLocation>		



## 8.3 Entering coordinates

It looks like coordinates can be entered in a few different ways, distinguishable by patterns. This means do not omit any 0-padding! I'm not sure if we should eliminate some of these options...

- **Degrees/minutes/seconds** (hddmmss (hemisphere-degrees-minutes-seconds)).  
E.g., E0790000 N0200000
- **Decimal degrees** (hddd.dddddd (hemisphere-degrees.decimal degrees))  
E.g., E079.533265 S012.583377
- **Decimal degrees** (+/- ddd.dddddd (hemisphere[+/-]-degrees.decimal degrees [+ for N and E, - for S and W with + being optional])  
E.g., +079.533265 +086.216635
- **Decimal minutes** hddmm.mmmm (hemisphere-degrees-minutes.decimal minutes)  
E.g., E07932.5332 S01235.5421
- **Decimal seconds** hddmmss.sss (hemisphere-degrees-minutes-seconds.decimal seconds)  
E.g., E0793235.575 S0123536.895

### 8.3.1 Example 12. A single point.

```

<geoLocation>
  <L1 type="Continent"> Europe </L1>
  <L2 type="Nation"> United Kingdom </L2>
  <L3 type="Country"> England </L3>
  <L4 type="Region"> Northwest England </L4>
  <L5 type="City"> Manchester </L5>
  <points label="[text]">
    <point>
      <latitude type="degrees"> 53° 28' 0" N </latitude>
      <longitude type="degrees"> 2° 14' 0" W </longitude>
    </point>
  </points>
</geoLocation>

```

### 8.3.2 Example 13. A bounding polygon.

```

<geoLocation>
  <L1 type="Continent"> North America </L1>
  <L2 type="Country"> United States </L2>
  <L3 type="State"> Minnesota </L3>
  <points label="[text]">
    <point>
      <latitude type="degrees"> N049.5000 </latitude>
      <longitude type="degrees"> W097.5000 </longitude>
    </point>
    <point>
      <latitude type="degrees"> N049.5000 </latitude>
      <longitude type="degrees"> W089.0000 </longitude>
    </point>
    <point>
      <latitude type="degrees"> N043.0000 </latitude>
      <longitude type="degrees"> W097.5000 </longitude>
    </point>
  </points>
</geoLocation>

```



```

    <point>
      <latitude type=degrees>      N043.0000      </latitude>
      <longitude type=degrees>     W089.0000      </longitude>
    </point>
  </points>
</geoLocation>

```

### 8.3.3 Example 14. A bounding polygon, varying by date.

We'll just have to see what we're working with if and when we get data like this. The degree of temporal granularity might depend on the source of the data and thus be different for different records. Note that East Germany, 1945-1990, and West Germany, 1945-1990, overlap in time, but would both be acceptable hits for "Germany" during that period.

```

<geoLocation>
  <L1 type="Continent">      Europe      </L1>
  <L2 type="Country">       Germany     </L2>
  <points label="German Confederation" dates="1815-1866">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="North German Confederation" dates="1866-1871">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="German Empire" dates="1871-1918">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="Weimar Republic" dates="1918-1933">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="Third Reich" dates="1933-1945">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="Greater Germany" dates="1938-1945">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="West Germany" dates="1945-1990">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="East Germany" dates="1945-1990">
    Enough <point> elements to describe a bounding box.
  </points>
  <points label="Germany" dates="1990-">
    Enough <point> elements to describe a bounding box.
  </points>
</geoLocation>

```

### 8.3.4 Example 15. Another bounding polygon, varying by date.

```

<geoLocation>
  <L1 type="Continent">      Europe      </L1>
  <L2 type="Country">       Sweden     </L2>
  <points label="[text] dates="1721-1917">
    <point>
      <latitude type=decimal>    N0690000      </latitude>
      <longitude type=decimal>   E0110000      </longitude>
    </point>
  </points>

```



```

<point>
  <latitude type=decimal>      N0690000
  <longitude type=decimal>     E0320000
</point>
<point>
  <latitude type=decimal>      N0550000
  <longitude type=decimal>     E0110000
</point>
<point>
  <latitude type=decimal>      N0550000
  <longitude type=decimal>     E0320000
</point>
</points>
<points label=[text] dates="1917-">
  <point>
    <latitude type=decimal>    N0690000
    <longitude type=decimal>   E0110000
  </point>
  <point>
    <latitude type=decimal>    N0690000
    <longitude type=decimal>   E0240000
  </point>
  <point>
    <latitude type=decimal>    N0550000
    <longitude type=decimal>   E0110000
  </point>
  <point>
    <latitude type=decimal>    N0550000
    <longitude type=decimal>   E0240000
  </point>
</points>
</geoLocation>

```

## 8.4 Bodies of Water

This gets strange.

### 8.4.1 Example 16. A gulf within a sea: The Persian Gulf

```

<geoLocation>
  <L1 type="Ocean">          Indian Ocean
  <L2 type="Sea">           Arabian Sea
  <L3 type="Gulf">          Persian Gulf
</geoLocation>

```

### 8.4.2 Example 17. The Strait of Hormuz

```

<geoLocation>
  <L1 type="Ocean">          Indian Ocean
  <L2 type="Sea">           Arabian Sea
  <L3 type="Gulf">          Gulf of Oman
  <Other type="Strait">     Strait of Hormuz
</geoLocation>

```



#### 8.4.3 Example 18. A gulf within a gulf: The Persian Gulf

```
<geoLocation>
  <L1 type="Ocean"> Indian Ocean </L1>
  <L2 type="Sea"> Arabian Sea </L2>
  <L3 type="Gulf"> Gulf of Oman </L3>
  <L4 type="Gulf"> Persian Gulf </L4>
</geoLocation>
```

#### 8.4.4 Example 19. A gulf within a sea: The Red Sea

```
<geoLocation>
  <L1 type="Ocean"> Indian Ocean </L1>
  <L2 type="Sea"> Arabian Sea </L2>
  <L3 type="Gulf"> Gulf of Aden </L3>
  <L4 type="Sea"> Red Sea </L4>
</geoLocation>
```

#### 8.4.5 Example 20. A sea within a sea within a sea: The Adriatic Sea

```
<geoLocation>
  <L1 type="Ocean"> Atlantic Ocean </L1>
  <L2 type="Sea"> Mediterranean Sea </L2>
  <L3 type="Sea"> Ionian Sea </L3>
  <L4 type="Sea"> Adriatic Sea </L4>
</geoLocation>
```

#### 8.4.6 Example 21. The Gulf of Mexico

```
<geoLocation>
  <L1 type="Ocean"> Atlantic Ocean </L1>
  <L2 type="Gulf"> Gulf of Mexico </L2>
</geoLocation>
```

#### 8.4.7 Example 22. The Carribean Sea

```
<geoLocation>
  <L1 type="Ocean"> Atlantic Ocean </L1>
  <L2 type="Sea"> Caribbean Sea </L2>
</geoLocation>
```

#### 8.4.8 Example 23. A gulf within a sea: The Gulf of Venezuela

```
<geoLocation>
  <L1 type="Ocean"> Atlantic Ocean </L1>
  <L2 type="Sea"> Caribbean Sea </L2>
  <L3 type="Gulf"> Gulf of Venezuela </L3>
</geoLocation>
```

#### 8.4.9 Example 24. Cayman Trough: An oceanic trench

```
<geoLocation>
```



```
<L1 type="Ocean">
  <L2 type="Sea">
    <Other type="Trough">
</geoLocation>
```

Atlantic Ocean	</L1>
Caribbean Sea	</L2>
Cayman Trough	</Other>

## 8.4.10 Example 25. James Bay: A bay within a bay

```
<geoLocation>
  <L1 type="Ocean">
    <L2 type="Bay">
      <L3 type="Bay">
</geoLocation>
```

Atlantic Ocean	</L1>
Hudson Bay	</L2>
James Bay	</L3>

## 8.4.11 Example 26. Lake Michigan

```
<geoLocation>
  <L1 type="Continent">
    <Other type="Lake">
</geoLocation>
```

North America	</L1>
Lake Michigan	</Other>

OR, depending on the focus of the record, if you want it to come up in a search on United States:

```
<geoLocation>
  <L1 type="Continent">
    <L2 type="Country">
      <Other type="Lake">
</geoLocation>
```

North America	</L1>
United States	</L2>
Lake Michigan	</Other>

## 8.4.12 Example 27. The Columbia River: a river within two countries

```
<geoLocation>
  <L1 type="Continent">
    <L2 type="Country">
      <L2 type="Country">
      <Other type="River">
</geoLocation>
```

North America	</L1>
United States	</L2>
Canada	</L2>
Columbia River	</Other>

## 8.4.13 Example 28. Long Island Sound

```
<geoLocation>
  <L1 type="Ocean">
    <L2 type="Sound">
</geoLocation>
```

Atlantic Ocean	</L1>
Long Island Sound	</L2>