

Best Practice Guidelines for the Implementation of EAD Version 2002 in Florida Institutions

March 2006

John R. Nemmers

Table of Contents

Introduction	1
How to Use the Best Practices Guidelines	2
General Guidelines	3
Stylesheets	3
Automatic Authoring of EAD Finding Aids	3
Consistent Filename Practices	3
Upper and Lower Case	4
Opening and Closing Element Tags	4
Special Characters	4
Attribute Values	4
ID attributes	5
Encoding Names and Subjects	5
Date Normalization	5
The <frontmatter> element	6
The <emph> and <title> Elements	6
The <list> Element	6
Finding Aid Encoding Template and Commentary	8
Additional Encoding Guidelines	26
XML Declaration, DOCTYPE Declaration, and Declaration Subset	26
External Linking	27
Internal Linking	29
Referencing External Entities	29
Describing New Additions to Collections	30
References and Resources	32
Appendix A: Example of an Encoded Finding Aid	33

Introduction

These best practice guidelines have been developed as part of **Opening Archives: Improving Access to Primary Sources in Florida**, a project funded by a grant from the Florida Division of Library and Information Services, through the Library Services and Technology Act (LSTA). This project involves the implementation of archival finding aids in Florida using the Encoded Archival Description (EAD) Version 2002 standard. Partner institutions include the Florida Center for Library Automation (FCLA), the State Library and Archives of Florida, the Tampa Bay Library Consortium (TBLC), Florida International University, Florida State University, the University of Central Florida, and the University of Florida. Additional information about the Opening Archives project is available online at <http://www.fcla.edu/dlini/OpeningArchives/>.

This document replaces the *Best Practice Guidelines for the Implementation of EAD Finding Aids in Florida Institutions* produced by the 2001 LSTA-funded pilot project, "Enhanced Access to Special Collections in the Libraries of Florida's State Universities."

About EAD

EAD (Encoded Archival Description), the international standard for encoding archival finding aids using Extensible Markup Language (XML), is maintained by the Library of Congress and the Society of American Archivists (<http://www.loc.gov/ead/>). As stated in the *EAD Application Guidelines*:

Encoded Archival Description (EAD) is a data structure standard for preserving the hierarchy and designating the content of descriptive guides to archival holdings worldwide. It enables Internet delivery of these guides and also ensures their permanence by providing a stable, non-proprietary data storage environment from which data can be transferred to other software environments as necessary. In technical terms, EAD comprises a Document Type Definition (DTD) for encoding archival finding aids that is written following the syntactic rules of...Extensible Markup Language (XML).

Since the time of its initial release in the mid-1990s, EAD has become widely accepted and adopted by archives, libraries, and other cultural heritage institutions. The EAD standard permits a great deal of flexibility in representing the diversity of information included in archival finding aids. It accommodates simple or complex encoding to support varying levels of description. By providing a uniform data structure, EAD facilitates the dissemination and sharing of finding aids, particularly through the creation of online discovery systems and union databases.

In addition to these guidelines, participants should consult the *EAD Tag Library* and the *EAD Application Guidelines*, available at: <http://lcweb.loc.gov/ead/>.

Acknowledgements

Several individuals participated in the creation of the *Best Practice Guidelines for the Implementation of EAD Version 2002 in Florida Institutions* including Chuck Thomas and Lucy Patrick of Florida State University, Beth Golding of the State Library and Archives of Florida, Liz Konzak of the University of Central Florida, and Maureen Kelly and Priscilla Caplan of the Florida Center for Library Automation. Kathy Wisser of NC ECHO provided valuable advice and her 2004 [NCEAD Best Practice Guidelines EAD 2002](#) served as an exemplary model for these Florida Guidelines.

How to Use the Best Practices Guidelines

The main section of this best practices document is comprised of a “Finding Aid Encoding Template and Commentary” section. The encoding template walks you through a complete EAD finding aid, presenting EAD elements followed by a commentary on each encoding section of the finding aid. The commentary includes a discussion of the EAD elements, recommendations and options for encoding, and additional encoding examples. Each encoding template section is enclosed in a border to distinguish it from the commentary. A full EAD finding aid template can be found in [Appendix 1](#).

Within each template or example provided in the Guidelines, there are items of information that need to be filled in by the finding aid author at each institution. Most of this data will vary from one finding aid to the next. These items are indicated by the use of [brackets] and inside each set of [] is a brief description of the data that should replace the []. For example, if a line in a template reads:

```
<titleproper>Guide to the [title of collection or archival unit being described]</titleproper>
```

Then, when using this line to encode the finding aid for the “Enoch Soames Papers” you would enter:

```
<titleproper>Guide to the Enoch Soames Papers</titleproper>
```

Note that the [] and the content inside of the brackets were replaced entirely by the title of the collection.

Throughout this best practices document, EAD elements are hyperlinked to the online [Encoded Archival Description Tag Library Version 2002](#) for more precise definitions and further examples. In addition, it includes references to the Society of American Archivists' *Describing Archives: A Content Standard* (DACS), which currently is not available online.

General Guidelines

In addition to the specific best practice guidelines provided in the Finding Aid Encoding Template and Commentary section below, there are several general guidelines recommended as best practice for creating EAD finding aids in Florida. Many of these guidelines relate to elements and issues that affect multiple parts of the EAD finding aid, including the use of stylesheets, the normalization of dates, proper XML syntax, and certain elements that require a general introduction.

Stylesheets

The encoding of EAD finding aids as XML files requires the use of external stylesheets to transform these finding aids into a format suitable for display or printing. In particular, most EAD files require stylesheets so that they can be transformed from XML into HTML for display in Internet web browsers.

Stylesheets are written in XSL (Extensible Stylesheet Language) and specify the way in which the elements in the XML file should be displayed. EAD itself is primarily concerned with content and not display, so XSL stylesheets are used to handle display issues.

These Guidelines do not attempt to provide best practices for stylesheets. For many people XSL is more difficult to learn than EAD because XSL is much more like a programming language. Also, the variations in how finding aid elements should be displayed are unlimited, making it impractical to try to cover all variations in one help document. There are several existing resources online providing both sample stylesheets and instructions on how to create/modify stylesheets. For example, Michael Fox's EAD Cookbook (<http://www.archivists.org/saagroups/ead/ead2002cookbookhelp.html>) includes sample stylesheets and basic instructions on how to modify them. In addition, refer to the "EAD Help Pages - EAD in XML" web site (<http://www.archivists.org/saagroups/ead/xml.html>).

Automatic Authoring of EAD Finding Aids

In order to automate and standardize encoding practice in Florida, the Opening Archives project will create and disseminate basic authoring tools and templates to be used during finding aid creation. It also is recommended that institutions investigate and/or create customized templates, macros, and software tools that will lead to automatic authoring of EAD finding aids. For example, descriptive information entered into a database can be exported as a report that automatically inserts valid EAD markup. Macros can be created in word-processing applications that automatically tag information that is in a consistent format (e.g., container lists). Each institution should explore the technique that works best for them while adhering to the general instructions and templates presented in these Guidelines.

Authoring tools created as part of the Opening Archives project will be freely available to all EAD implementers. These tools will require some customization at the local level, but documentation will be provided to accomplish this customization. Information about the availability of these tools will be made available on the Opening Archives web site (<http://www.fcla.edu/dlini/OpeningArchives/>) and the Florida Center for Library Automation (FCLA) web site (<http://www.fcla.edu>).

Consistent Filename Practices

The filename of the EAD finding aid document should be unique within each institution (i.e., no institution

should have two EAD documents with the same filename). When naming files, it is a good idea to use collection names or numbers in combination with an institutional identifier, such as the institution's acronym or MARC Organization Code. For example, "fsu8801.xml" might be a good filename to identify Manuscript Collection 88:01 at FSU. Regardless of the naming convention selected by each institution, it is important that the institution is consistent in the naming of files so as to avoid duplicate filenames.

Upper and Lower Case

All element tags and attribute names in EAD finding aid documents must typed be in lowercase characters to ensure XML compliance. Generally, it is a good idea to avoid the use of all upper case characters.

Opening and Closing Element Tags

In XML, all elements must be closed as well as opened. For example, every opening <date> tag must have a closing </date> tag with a slash preceding the element name. Most elements will open and close relatively close together but some elements, such as <ead> or <archdesc>, may be opened at the top of the finding aid document and not closed until the very end of the document. One of the most common errors encountered when authoring EAD finding aids is neglecting to close an element tag set.

Certain elements are exceptions to this open/close tag rule: <extptr>, <extptrloc>, <ptr>, <ptrloc>, etc. Rather than creating a second element to close the open tag, XML allows these tags to be automatically closed by including a "/" immediately before the final angle bracket. For example:

```
<extptr show="embed" entityref="libseal"/>
```

Note: These elements cannot contain other elements nested within them or PCDATA (parsed character data).

Special Characters

Special characters are frequently used in EAD finding aids; particularly in finding aids which include non-English content. EAD XML finding aids require the use of hexadecimal references when using such characters. The following are just a few of the commonly used hexadecimal references. For more information, consult the *EAD Application Guidelines*.

```
é &#x00E9;  
ñ &#x00F1;  
& &#x0026;  
© &#x00A9;
```

A potential problem is data with ISO character names like "©". These entity reference names will not be recognized in an XML implementation of EAD and will produce validation errors if they are not converted to numeric hexadecimal references. For more information, see the "EAD in XML" section of the EAD Help Pages: <http://www.archivists.org/saagroups/ead/xml.html>

Attribute Values

When supplying attribute values, always surround the value with double quotes (e.g., "value").

ID attributes

Although some EAD help documents, such as Michael Fox's *EAD Cookbook* (<http://www.archivists.org/saagroups/ead/ead2002cookbookhelp.html>), recommend the use of ID attributes in major finding aid elements to simplify the creation of a table of contents and other internal hyperlinks, Florida institutions should not use ID attributes unless there is no alternative. Table of contents can be created using stylesheets without the use of ID attributes, and internal linking can be accomplished on an as-needed basis using <ref> elements.

Encoding Names and Subjects

Names and subjects are to be encoded where specified in the [Finding Aid Encoding Template and Commentary](#) section of this document. It is not necessary to tag each and every instance of a name or subject. For example, if you use a <persname> element around "Enoch Soames" in the <bioghist> element, you do not have to encode that name again throughout the <dsc> contents list. All names and subjects should be encoded in the <controlaccess> elements. More detailed tagging of names and subjects is at the discretion of individual repositories.

Date Normalization

The process of normalizing dates involves providing alternative dates in a standard machine-readable format (according to ISO 8601). For example, the date "March 1, 1971" can be recorded in various formats:

1 March 1971
3/1/1971
03-01-1971
01-03-1971
etc.

To normalize these dates, simply convert them to the format YYYY-MM-DD. For example, all of the above dates would be normalized as "1971-03-01".

To normalize dates in the EAD finding aid, include the NORMAL attribute in the <date> and <unitdate> elements.

```
<date normal="1971-03-01">March 1, 1971</date>  
<date normal="1971-03-01">3/1/1971</date>  
<date normal="1971-03">March 1971</date>  
<date normal="1971">1971</date>  
<date normal="1971">1971</date>  
<date normal="1970-12-23/1971-03-01">December 23, 1970 - March 1, 1971</date>  
<date normal="1970-12/1971-03">December 23, 1970 - March 1, 1971</date>  
<date normal="1970/1971">1970-1971</date>
```

For broken date spans (e.g., "1971, 1990-2006"), encode the dates in separate <unitdate> tags:

```
<unitdate normal="1971">1971</unitdate>, <unitdate normal="1990/2006">1990-2006</unitdate>
```

For open-ended date spans use an interval and set the end date to 9999:

```
<unitdate normal="1971/9999">1971-present</unitdate>
```

For approximate dates (e.g., “ca. 1970” or "1970s"), normalize as an approximate date range:

```
<unitdate normal="1968/1972">ca. 1970</unitdate>  
<unitdate normal="1970/1979">1970s</unitdate>
```

For unknown dates normalize as an interval using the collection date span or life of the creator. If it is impossible to estimate a date for undated materials, do not use the NORMAL attribute.

```
<unitdate normal="1971/2006">undated</unitdate>  
<unitdate>undated</unitdate>
```

It is possible to use the NORMAL attribute for any <date> or <unitdate> element in the EAD finding aid, but date normalization is required only for <date> and <unitdate> elements in the <eadheader>, collection-level <archdesc> elements, and series-level <c01> elements in the <dsc>.

Although the ISO 8601 date normalization standard can be expressed either with or without the hyphens (e.g., the normalized date "1971-03-01" is the same as "19710301"), the use of hyphens is recommended.

The <frontmatter> element

The <frontmatter> element is an optional element in EAD that is not used in Florida encoded finding aids. It is intended to serve as a title page for the finding aid (title, author, etc.), but all of the information necessary for a formal title page for the finding aid already exists in the <eadheader> element. Rather than using information included in a redundant <frontmatter> element, the stylesheet will pull information for display from the <eadheader> element.

The <emph> and <title> Elements

Use the RENDER attribute to set a specific font style. When using the <emph> and <title> elements with the RENDER attribute set to “quoted”, make sure that any leading or trailing spaces are outside of the <emph> or <title> element tags (e.g., “A Memory of Soames” rather than “ A Memory of Soames ”). If no attribute is specified, no formatting will result. Specific values available for these elements are listed in the *EAD Tag Library*.

The <list> Element

The <list> element can be used as a simple list of individual words or phrases, or as a definition list that pairs a word/phrase with another word/phrase. It is also possible to generate lists that are numbered/lettered (type=”ordered”) or bulleted (type=”marked”). List elements can be used in many elements within the finding aid. Template for simple list:

```
<list type=”simple”>  
<head>[Optional heading for list]</head>
```

```
<item>[Word or phrase]</item>  
<item>[Word or phrase]</item>  
<item>[Word or phrase]</item>  
<item>[Word or phrase]</item>  
</list>
```

Finding Aid Encoding Template and Commentary

The encoding template that follows presents the encoding for an EAD finding aid, along with commentary, examples, and optional practices. All of the encoding recommended as best practice by these Guidelines can be found in the bordered boxes. The commentary for each section of encoding immediately follows the bordered boxes. In some cases, commonly used optional EAD elements are presented in bordered boxes, and these elements are clearly indicated as “Optional.” All other encoding sections presented in the bordered boxes below should be considered required for Florida EAD finding aids.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/xsl" href="[stylesheetfilename].xsl"?>
<!DOCTYPE ead PUBLIC "-//ISBN 1-931666-00-8//DTD ead.dtd (Encoded Archival Description (EAD)
Version 2002)//EN" "ead.dtd">
```

EAD finding aids encoded in XML should begin with the XML Declaration, which specifies the version of XML being used. In first line above, XML Version 1.0 is declared and the ISO standard 8859-1 is declared as the character set used for encoding.

The second line identifies a stylesheet that will be used to transform the XML finding aid into another format for display, printing, sharing, or some other purpose. Stylesheets most frequently are used to transform an XML finding aid into an HTML finding aid for display on the Internet. For more information, please refer to the [Stylesheets](#) section above.

The DOCTYPE Declaration states that the document conforms to the rules of the EAD DTD. Note that this declaration points to the actual “ead.dtd” file on your computer or server. When viewing or parsing EAD finding aids, keep in mind that the DOCTYPE Declaration is declaring that the “ead.dtd” file exists in a specific location. In the template above, because there is simply a filename (ead.dtd) without a directory path of any kind, the browser or software attempting to load the EAD finding aid will expect the “ead.dtd” file to be in the same directory as the EAD finding aid itself. If the ead.dtd file exists in another directory, then you will need to alter this path accordingly. For example, if the ead.dtd file exists in a subdirectory named “eadfiles” on the computer or server, then the path would need to be changed to “/eadfiles/ead.dtd”.

In order to download the ead.dtd file and associated files, visit the EAD DTD Version 2002 page (<http://www.loc.gov/ead/ead2002a.html>) and follow the download instructions.

The DOCTYPE Declaration also can include a Declaration Subset in which you can include any additional entities in your finding aid. Entities are external objects (e.g., images, encoded text files, etc.) that often are used to display information that occurs commonly in an institution’s finding aids. For example, an institutional address can be included as an entity. Rather than typing the address fully in the finding aid, the address can be stored in a separate XML file and referenced from within the finding aid. For more information, please refer to the [XML Declaration, DOCTYPE Declaration, and Declaration Subset](#) section of this document.

```
<ead relatedencoding="MARC21">
<eadheader langencoding="iso639-2b" countryencoding="iso3166-1" repositoryencoding="iso15511"
dateencoding="iso8601" scriptencoding="iso15924">
```

Following the XML and DOCTYPE declarations, the EAD finding aid begins with the <ead> element. The RELATEDENCODING attribute provides for a crosswalk between EAD elements and their respective MARC elements. Throughout the <archdesc> section of the template, elements with corresponding MARC fields will include ENCODINGANALOG attributes containing the MARC field numbers.

LANGENCODING and the other encoding attributes in <eadheader> indicate the international standards to which the EAD finding aid document will subscribe.

```
<eadid countrycode="us" mainagencycode="[NUC organization code]" publicid="[formal public
identifier]">[unique identifier such as the filename without the file extension]</eadid>
```

The <eadid> element is a required element of <eadheader> that contains a unique identifier for a given EAD finding aid. In addition to the attributes, the <eadid> element consists of the institution's local filename for the EAD finding aid document. This filename should be unique within each institution (i.e., no institution should have two EAD documents with the same filename). When combined with the formal public identifier, this filename also will serve as the unique identifier for the finding aid when submitted to a union database. The filename should be entered as a text value in the <eadid> element, but do not include the file extension (e.g., "ufms123" is acceptable, but "ufms123.xml" is not).

When naming files, it is a good idea to use collection names or numbers in combination with an institutional identifier, such as the institution's acronym or MARC Organization Code. For example, "fsu8801.xml" might be a good filename to identify Manuscript Collection 88:01 at FSU.

The MAINAGENCYCODE attribute in <eadid> is used to identify the repository, and should consist of the repository's NUC organization code. For example, "fu" is the code for the University of Florida, and "fts" is used for the University of South Florida. For more information, refer to the MARC Code List for Organizations (<http://lcweb.loc.gov/marc/organizations/>).

The PUBLICID attribute contains the formal public identifier for the EAD finding aid. It provides information about the finding aid's institution. To construct the formal public identifier use this format:

```
--/us::[organization code from the MARC Code List for Organizations]//TEXT us::[organization code from the
MARC Code List for Organizations]:[local filename of EAD finding aid]//EN
```

An EAD finding aid with the filename "ufarchms63.xml" at the University of Florida would have the following formal public identifier:

```
--/us::fu//TEXT us::fu::ufarchms63.xml//EN
```

```
<filedesc>
<titlestmt>
<titleproper>Guide to the [title of collection or archival unit being described]</titleproper>
<author>Finding aid prepared by [name of person responsible for creating the intellectual content of the finding aid]</author>
</titlestmt>
```

The <filedesc> element includes bibliographic information about the content of the encoded finding aid. In other words, this element describes the finding aid file itself and not the archival unit being described in the finding aid. The <filedesc> element consists of two subelements: <titlestmt> and <publicationstmt>.

The <titlestmt> element is a wrapper element that consists of other elements identifying title and author information for the finding aid. According to DACS (*rule 2.3 Title Element, pp. 17-23*), the title of the collection should contain the personal/family/corporate name first followed by the type of material (e.g., papers, records, etc.).

The <titleproper> is the formal title of the finding aid, not the archival collection described by it (e.g., if the collection title is "Enoch Soames Papers" then the <titleproper> is "Guide to the Enoch Soames Papers"). The <titleproper> of the finding aid should be distinguished from the <unittitle> of the finding aid by the addition of a prefatory phrase such as "A Guide to the ..." or "Inventory of the ..." or "Register of the ..." If the finding aid is not a register or inventory, then use whatever descriptive phrase is appropriate.

It is possible to include the date range for the collection by adding a <date> element inside of the <titleproper> element in this format:

```
<titleproper>Guide to the [title of the collection], <date normal="[normalization of dates]">[collection dates]</date></titleproper>
```

Use standardized forms for dates (e.g., yyyy-yyyy), and use "Undated" if the dates are unidentified. Also, use the NORMAL attribute to include normalized dates (for more information, refer to the [Normalized Dates](#) section above). See DACS *rule 2.4, p. 28* for examples of encoding the date element according to

The <author> element contains the name of the individual(s) responsible for the intellectual content of the finding aid. If the name of the author is unknown, use a general attribution such as "Department Staff" or "Library Staff". You can list multiple authors within the author element (e.g., <author>Finding aid prepared by Jane Smith, John Jones, and Brian Brown</author>).

Do not confuse the author with the name of the person responsible for encoding the finding aid, if they are two separate people. The name of the individual responsible for the XML encoding should be included within the <creation> subelement of the <profiledesc> element. If the person responsible for creation of the intellectual content of the finding aid and the encoding are the same, then encode the name within the <author> element and again within the <creation> element.

Optional <titlestmt> elements:

<[sponsor](#)>[sponsor statement]</sponsor>

The <sponsor> element can be used to acknowledge support from funding sources such as donors or granting agencies. For example:

<sponsor>Funded by the Library Services and Technology Act (LSTA), with support provided by the Florida Center for Library Automation (FCLA).</sponsor>

Note that it is good practice also to include a <sponsor> element in the <archdesc><processinfo> element whenever donors or granting agencies provide funds for processing of collections.

<[publicationstmt](#)>

<[publisher](#)>[Department name], [Institution name]</publisher>

<[address](#)><[addressline](#)>[city], Florida, USA</addressline></address>

</publicationstmt>

The name and location of the institution responsible for creating the finding aid should be included in the <publicationstmt> element. The <publisher> element contains the department and institution names (e.g., <publisher>Special Collections, Smathers Libraries, University of Florida</publisher>). The <address><addressline> element contains the city, state, and country.

Optional <publicationstmt> element:

<p><[date](#) normal=""[normalization of date]""© [Copyright date] </date> [Copyright holder]. All rights reserved.</p>

Copyright information for the finding aid can be provided within <publicationstmt> using a paragraph <p> tag. Use "©" to include the character entity reference for the copyright symbol within the text of a finding aid. The copyright holder is usually the name of the institution or government body.

In the <date> element, use the NORMAL attribute to include normalized dates (for more information, refer to the [Normalized Dates](#) section above).

```
</filedesc>
<profiledesc>
<creation>Finding aid encoded by [name of person responsible for encoding the EAD finding aid], <date
normal="[normalization of date]">[Month Year]</date></creation>
<language>Description is written in <language langcode="eng">English</language>.</language>
<descrules>Finding aid prepared using <title>DACS</title></descrules>
</profiledesc>
```

The <profiledesc> element contains information about the creation of the encoded finding aid. The <profiledesc><creation> element provides the name of the person responsible for encoding the finding aid and the date (month and year) the finding aid was encoded. It is also possible to include information concerning the method used to convert an original finding aid to EAD, the format of the original, etc. For example:

```
<creation>Machine-readable finding aid derived from
[paper by means of scanning and OCR] -OR-
[word processing program (version number if known)] -OR-
[typescript by rekeying] -OR-
[database (name and version number if known) by means of machine processing] -OR-
[text conversion and EAD tagging provided by Vendor X] , <date>[Month Year]</date></creation>
```

The precise date, if known, should be given. If the date can be estimated, then give the date in the form <date>Circa 19__.</date>", supplying the decade, and if possible, year.

In the <date> element, use the NORMAL attribute to include normalized dates (for more information, refer to the [Normalized Dates](#) section above).

The <language> element identifies the language of the finding aid, not the language of the material being described. If more than one language is used in the finding aid, separate each language name with a <language></language> tag set.

Each <language> element should include a LANGCODE attribute with the value determined by the ISO 639-2b standard.

The <descrules> element identifies the content standard or rules used in describing the collection. The current standard in the U.S. is *Describing Archives: A Content Standard* (DACS), which replaced APPM. Other content standards (e.g., RAD) also may be used. See *DACS Rule 8.1.4, p. 81*.

Optional <eadheader> elements:

```
<revisiondesc>  
<change>  
<date normal="[normalization of date]">[date of change]</date>  
<item>[brief textual description of change, name of person responsible]</item>  
</change>  
</revisiondesc>
```

The <revisiondesc> element is used to indicate significant changes to the content of the description after the initial creation of the finding aid. Minor changes to correct encoding and typographical errors are not significant changes.

If revision information is important for researchers, it also should be encoded in the <archdesc><processinfo> section of the finding aid.

In the <date> element, use the NORMAL attribute to include normalized dates (for more information, refer to the [Normalized Dates](#) section above).

```
</eadheader>  
<archdesc level="[level of description]">
```

The <archdesc> element is a wrapper element for the body of an EAD finding aid document, and contains all of the information describing the content, context, and extent of a unit of archival materials. Information is organized in hierarchical levels that allow for a descriptive overview of the whole to be followed by more detailed views of the parts.

The LEVEL attribute, which identifies the highest level of description represented in the finding aid, is required. Possible values include: collection, file, fonds, item, recordgrp, series, subseries, and otherlevel. Use the "otherlevel" value if none of the given values is appropriate, but its use in the LEVEL attribute requires the use of an OTHERLEVEL attribute describing the nature of the level of description.

The <archdesc> element contains several important subelements:

- <did> - Collection-level descriptive identification
- <bioghist> - Biographical/historical information about the collection creator(s)
- <scopecontent> - Scope and content note
- <controlaccess> - Subject terms and access points
- <dsc> - Description of subordinate components (the container list)

In addition to the elements above, there are also a number of elements that can be used to record administrative

information about the archival unit (e.g., use restrictions, access restrictions, preferred citations, etc.).

```
<did>  
<head>Descriptive Summary</head>
```

The <did> element is a wrapper element that groups together the core information used for the description of the archival unit. The <did> element is required at each level of an encoded finding aid and forms the basic unit of description for EAD. The first occurrence of the <did> element, which represents the highest level of description for the archival unit, should allow a researcher to determine whether the materials are pertinent to their research without having to read too deep into the finding aid.

The <archdesc><did> element should include:

- <head> - Heading for the section: “Descriptive Summary”.
- <unittitle> - Title of the archival unit being described (i.e., the collection title)
- <unitdate> - Date (inclusive and/or bulk dates)
- <unitid> - Accession number or similar collection identifier
- <origination> - Origination
- <physdesc> - Quantity/extent
- <repository> - Repository
- <abstract> - Abstract

```
<unittitle label="Title:" encodinganalog="245$a">[title of collection], <unitdate label="Dates:"  
normal="[normalized date]" type="inclusive" encodinganalog="245$f">[inclusive dates of  
collection]</unitdate></unittitle>
```

The required <unittitle> element contains the title of the archival unit described in the finding aid, not the title of the finding aid itself (e.g., "Enoch Soames Papers" not "Guide to the Enoch Soames Papers").

The LABEL attribute in <unittitle> and <unitdate> is for display purposes in frequently used stylesheets, such as those found in the *EAD Cookbook*.

The <unitdate> element is entered as part of the <unittitle> element. This is not required by the EAD DTD, and it is possible to separate <unitdate> from <unittitle>. This Best Practices Guidelines document recommends that <unitdate> should be part of <unittitle> at this level of description because this date information is an integral part of the archival description and because it ensures unique collection titles. At lower levels of description (i.e., when entering series and folder titles), the <unitdate> element is entered separately from the <unittitle> element, as explained elsewhere in this document.

In the <unitdate> element, use the NORMAL attribute to include normalized dates (for more information, refer

to the [Normalized Dates](#) section above).

The TYPE attribute in the <unitdate> element most often will have a value of “inclusive”, but it also is possible to include bulk dates by repeating the <unitdate> element and using a type=”bulk” attribute value. When including a second <unitdate> element for bulk dates, use the label=”Bulk:” attribute and the encodinganalog=”245\$g” attribute. For example, a collection with bulk dates might be encoded as follows:

```
<unittitle label="Title:" encodinganalog="245$a">Enoch Soames Papers, <unitdate label="Dates:"
normal="1917-1976" type="inclusive" encodinganalog="245$f">1917-1976</unitdate><unitdate
label="Bulk:" normal="1947/1966" type="bulk" encodinganalog="245$fg">1947-
1966</unitdate></unittitle>
```

```
<unitid label="Collection Identifier:" countrycode="us" repositorycode="[NUC organization code]"
encodinganalog="099">[Collection identification such as a Collection Number]</unitid>
```

The <unitid> element contains the code or number that uniquely identifies the collection, such as a collection or accession number. A default value of "Consult Repository" may be used if there is no unique identifier for the collection. The REPOSITORYCODE attribute contains the MARC Organization Code for the holding institution (e.g., “fu” for University of Florida). For more information, see DACS *rule 2.1, pp. 13-15*.

```
<origination label="Creator:" encodinganalog="100"><persname>[Name of creator entered in authority name
form]</persname></origination>
```

The <origination> element specifies the individual, family, or organization responsible for the creation, donation, accumulation, or assembly of the described materials. This element is required, if known. The name should be entered in authority form, and adherence to AACR2 and DACS rules for generating authority names is recommended. For example, the authority form for author Peter H. Rolfs is “Rolfs, P. H. (Peter Henry), 1865-1944”. For more information see DACS *rule 2.6, p. 33 and Chapter 9: Identifying Creators, p. 89-92*.

The personal name <persname> element can be changed to a family name <famname> or corporate name <corpname> as needed, but also change the value of ENCODINGANALOG attribute accordingly.

```
<physdesc label="Extent:">
<extent encodinganalog="300$a">5.8 linear feet. (13 Boxes)</extent>
</physdesc>
```

The <physdesc> element describes the quantity of material in cubic feet, linear feet, number of containers, number of items, or any other physical characteristics. For more information see DACS *rule 2.5, p. 29-32*

Within the <physdesc> element, additional elements such as <dimensions>, <physfacet>, and <genreform> are available.

```
<repository label="Repository:"><corpname>[Holding repository name in authoritative form]</corpname></repository>
```

The <repository> element identifies the institution responsible for holding and providing access to the materials being described. Within <repository>, encode the corporate name (<corpname>) of the repository in authority form. If the name is preceded by an article, encode as follows: <repository>The <corpname>Repository Name</corpname></repository>. For more information see DACS *rule 2.2, p. 16*.

```
<abstract label="Abstract:" encodinganalog="520$a">[Brief abstract of archival unit being described]</abstract>
```

The <abstract> content serves as the high-level description of the intellectual content of the collection. This very brief statement in the high-level <did> provides users with enough information to determine the nature of the collection. Most of the <abstract> can be written by using information from the <scopecontent> and <bioghist> elements, such as the name of the creator(s), the types and dates of materials, etc.

Optional <archdesc><did> element:

```
<langmaterial label="Language of Material:" encodinganalog="546$a">Material in <language langcode="[language code]">[Language]</language>.</langmaterial>
```

If the archival materials being described are written in English, then the <langmaterial> element is not necessary. However, if the archival collection contains a significant quantity of materials written in other languages, use this element to indicate the language of the materials being described. It includes a LANGCODE attribute in the <language> subelement that reflects the ISO 639-2b code for languages. If a collection contains more than one language, the <language> element within <langmaterial> should be repeated for each language. Please note that this element is used to specify the languages present in the archival materials, not the language in which the finding aid is written. For more information see DACS *rule 4.5, p. 54*.

Optional <archdesc><did> element:

```
<physloc label="Location:">[Brief description of physical location or instructions for locating the materials]</physloc>
```

The <physloc> element is used whenever the archival materials being described have a special physical

location that researchers will need to know about. For example, if a collection is stored off-site (e.g., in a warehouse), this element could contain a note such as: "Collection is stored off campus. For access, please contact archivist prior to your visit." See *DACS rule 4.2.6, p. 46-47*.

```
</did>
<bioghist encodinganalog="545">
<head>Biographical/Historical Note</head>
<p>[Biographical/historical paragraph describing the creator(s) of the collection]</p>
<chronlist>
<chronitem><date>[yyyy]</date><event>[Description of event]</event></chronitem>
<chronitem><date>[yyyy]</date><event>[Description of event]</event></chronitem>
</chronlist>
</bioghist>
```

The <bioghist> element contains biographical or historical information about the creator(s) of the archival materials being described. This information can be entered as a narrative using one or more <p> paragraph elements, or as a chronological list using the <chronlist> element containing multiple <chronitem> elements, or as a combination of both narrative and chronological list. For more information see *DACS rule 2.7, p. 34 and Chapter 10: Administrative/Biographical History, p. 93-104*.

Note that the <chronitem> element also has an <eventgrp> element that can be used to group a series of events under one date.

```
<scopecontent encodinganalog="520">
<head>Collection Scope and Content</head>
<p>[Paragraph describing the scope and content of the collection]</p>
</scopecontent>
```

The <scopecontent> element consists of one or more <p> paragraph elements describing the scope and content of the archival materials. For more information see *DACS rule 3.1, p. 35-39*

It is possible to include information regarding the arrangement of the collection in the <scopecontent> element, but it is recommended that this information be entered in the <arrangement> element within <scopecontent>. The <arrangement> element contains information about the collection's hierarchical organization (e.g., series and subseries titles) and/or the filing arrangement (e.g., alphabetically or chronologically). For more information see *DACS rule 3.2, p. 40-42*.

To include an <arrangement> element within <scopecontent>, use this format:

```
<scopecontent encodinganalog="520">
```

```
<head>Collection Scope and Content</head>
<p>[Paragraph describing the scope and content of the collection]</p>
```

```
<arrangement>
<p>Arrangement: [paragraph describing the arrangement of the collection]</p>
</arrangement>
</scopecontent>
```

Use of content tagging such as <persname>, <corpname>, <geogname>, <subject>, and <title> for important subjects/access points within the text of <scopecontent> is highly recommended.

```
<accessrestrict encodinganalog="506">
<head>Access Restrictions</head>
<p>[Brief statement of access restrictions].</p>
</accessrestrict>
```

If physical access to the collection is restricted due to donor restrictions, privacy concerns, etc., the <accessrestrict> element should include a brief statement of these restrictions. Even if no restrictions exist, use "Collection is open for research" or some other appropriate text. For more information see DACS *rule 4.1, p. 43-45*.

```
<userrestrict encodinganalog="540">
<head>Use Restrictions</head>
<p>[Brief statement of use restrictions and/or a copyright notice]</p>
</userrestrict>
```

The <userrestrict> element contains any restrictions placed upon the use of materials after physical access has been granted, including reproduction and publication restrictions. Copyright information should be included in this element, and the use of a formal copyright statement is highly recommended. For more information see DACS *rule 4.4, p. 50-53*.

```
<prefercite>
<head>Preferred Citation</head>
<p>[Identification of item], [title of collection], [department, institution], [city], Florida.</p>
</prefercite>
```

Modify the structure of the <prefercite> element depending on institutional preferences. For more information see DACS, *rule 7.1.5, p. 78*.

Note that "[Identification of item]" is part of the preferred citation statement and should be displayed as such to the researcher. All of the other bracketed information (title, institution, city) should be replaced with the appropriate data. For example, the preferred citation element for Special Collections materials at the University of Florida might read:

```
<prefercite>
<head>Preferred Citation</head>
<p>[Identification of item], Enoch Soames Papers, Special and Area Studies Collections, George A.
Smathers Libraries, University of Florida, Gainesville, Florida.</p>
</prefercite>
```

```
<acqinfo encodinganalog="541">
<head>Acquisition Information</head>
<p>[Brief statement describing acquisition information]</p>
</acqinfo>
```

The <acqinfo> element contains information explaining how the repository obtained the archival materials being described. For example, include "Gift of..." or "Purchased in..." or similar statements that include acquisition sources and dates, if known. If this information cannot be made public or is unknown this element can be skipped (its use is optional in such cases). For more information see *DACS rule 5.2, p. 61-62*.

```
<processinfo>
<head>Processing Information</head>
<p>[Brief processing history statement]</p>
</processinfo>
```

The <processinfo> element consists of a brief statement regarding the processing of the collection, including the name of the processor and the date of completion, if known. For example:

```
<p>The collection was processed by John Doe, August 1998 Additional processing was completed by
John Brown, March 2001.</p>
```

In addition to the processing history statement, the <processinfo> element also may include finding aid revision information (identical or similar to the information included in the <eadheader><revisiondesc> element) and/or sponsor information for donor- or grant-funded processing activities. If this information is unknown this element can be skipped (its use is optional in such cases). For more information see *DACS rule 8.1.5, p. 82*.

```
<controlaccess>
```

```
<head>Selected Subjects and Access Points</head>
```

```
<p>These and related materials can be found under the following headings in online catalogs:</p>
```

```
<[name of subject element] encodinganalog="[6xx]" source="[source code]">[access heading term]</[name of subject element]>
```

```
<[name of subject element] encodinganalog="[6xx]" source="[source code]">[access heading term]</[name of subject element]>
```

```
</controlaccess>
```

The <controlaccess> element is used to identify access points such as subject headings, organization names, and personal names. This list should be the same as the access points used in collection-level MARC records if the collection is cataloged. Always use the SOURCE attribute to record the code for the authority list.

In the template above, each occurrence of [name of subject element] should be replaced by an appropriate element name from the following list:

- [<corpname>](#)
- [<famname>](#)
- [<genreform>](#)
- [<geogname>](#)
- [<persname>](#)
- [<subject>](#)
- [<title>](#)

For example:

```
<corpname encodinganalog="610" source="lcnaf">University of Florida. Herbarium.</corpname>
```

```
<famname encodinganalog="600" source="lcnaf">Soames family.</famname>
```

```
<genreform encodinganalog="655" source="gmGPC">Photographic prints</genreform>
```

```
<subject encodinganalog="650" source="lcsH">Agricultural extension work.</subject>
```

```
<geogname encodinganalog="651" source="lcsH">Minas Gerais (Brazil).</geogname>
```

```
<persname encodinganalog="600" source="lcnaf">Rolfs, P. H. (Peter Henry), 1865-1944.</persname>
```

```
<title encodinganalog="630" source="lcnaf">Where the Wild Things Are.</title>
```

Optional collection-level <archdesc> element:

```
<separatedmaterial>
<head>Separated Material</head>
<p>[Brief description of separated material]</p>
</separatedmaterial>
```

The <separatedmaterial> element describes any materials that have been removed from the collection for preservation, storage, access, or other reasons.

Optional collection-level <archdesc> element:

```
<relatedmaterial>
<head>Related Material</head>
<p>[Brief description of related material]</p>
</relatedmaterial>
```

The <relatedmaterial> element identifies other collections or resources that are related to the described collection but are not a part of it. When finding aids for other collections exist online, it is recommended that hyperlinks be provided within the <relatedmaterial> description. See *DACS rule 6.3, p. 73-74*.

Optional collection-level <archdesc> element:

```
<descgrp type="admininfo">
<head>Administrative Information</head>
[Elements such as <accessrestrict>, <userrestrict>, <prefercite>, etc.]
</descgrp>
```

The <descgrp type="admininfo"> wrapper element can be used for grouping together information such as access/use restrictions, acquisition/processing information, and preferred citations. Elements containing administrative information pertaining to the materials being described, such as <accessrestrict>, <userrestrict>, <prefercite>, etc. (as described in templates above), can be inserted within the <descgrp> wrapper element. Note that elements such as <bioghist>, <scopecontent>, <controlaccess>, and <dsc> should not be inside of the <descgrp> element, but should remain at the <archdesc> wrapper level.

```
<dsc type="combined">
<head>Contents List</head>
```

The <dsc> element is a required wrapper that contains series descriptions, container lists, and other levels of description for the materials in the archival collection. Given the variations in collection organization and descriptive practices, it is impossible to provide just one template for the <dsc> that covers all possibilities. In addition, the <dsc> almost always is the most complicated and labor-intensive section of the EAD finding aid. For additional information, including examples of variations, refer to the [EAD Tag Library](#) and [EAD Application Guidelines](#).

A TYPE attribute is required to identify the structural framework of the descriptive information. The TYPE attribute offers three values:

- combined - Series descriptions and container lists are combined together in one long description.
- analyticcover - Series descriptions are separated from the container list. The series descriptions are listed under “analyticcover” while the container list elements are listed under “in-depth”.
- in-depth - Container lists are separated from series descriptions. The series descriptions are listed under “analyticcover” while the container list elements are listed under “in-depth”.

Florida participants should set the TYPE attribute to “combined” for all finding aids, which will indicate a model in which series or subseries description will immediately be followed by a description of its component parts. All finding aids will be encoded using the “combined” method. If desired, XSL stylesheets can be used to display the <dsc> to the researcher with the series descriptions separate from the container lists.

```
<c01 level="series">
<did>
<unittitle>[series title], </unittitle><unitdate type="inclusive" normal="[normalized date]">[series
dates]</unitdate>
<physdesc><extent>[extent of series]</extent></physdesc>
</did>
<scopecontent>
<p>[one or more paragraphs containing the series scope and content note]</p>
</scopecontent>

<c02 level="subseries">
<did>
<unittitle>[subseries title]</unittitle>
</did>

<c03>
<did>
<container type="box">[box #]</container>
<unittitle>[folder or item title], </unittitle><unitdate type="inclusive">[folder/item dates]</unitdate>
</did>
</c03>

<c03>
<did>
<container type="box">[box #]</container>
<unittitle>[folder or item title], </unittitle><unitdate type="inclusive">[folder/item dates]</unitdate>
</did>
</c03>
</c02>

<c02 level="subseries">
<did>
<unittitle>[subseries title]</unittitle>
</did>
```

```

<c03>
<did>
<container type="box">[box #]</container>
<unittitle>[folder or item title], </unittitle><unitdate type="inclusive">[folder/item dates]</unitdate>
</did>
</c03>
</c02>
</c01>

<c01 level="series">
<did>
<unittitle>[series title], </unittitle><unitdate type="inclusive" normal="[normalized date]">[series
dates]</unitdate>
<physdesc><extent>[extent of series]</extent></physdesc>
</did>
<scopecontent>
<p>[one or more paragraphs containing the series scope and content note]</p>
</scopecontent>

<c02>
<did>
<container type="box">[box #]</container>
<unittitle>[folder or item title], </unittitle><unitdate type="inclusive">[folder/item dates]</unitdate>
</did>
</c02>

<c02>
<did>
<container type="box">[box #]</container>
<unittitle>[folder or item title], </unittitle><unitdate type="inclusive">[folder/item dates]</unitdate>
</did>
</c02>
</c01>

```

All component descriptions use the enumerative <c01>, <c02> ... <c12> elements. Note that the hierarchical structure of the collection is reflected by the nesting of the <c0x> elements. For example, the first <c01> element is a series that contains two subseries encoded as <c02> elements. In turn, these <c02> subseries contain multiple <c03> elements representing folders/items within boxes. It is important to understand that the <c01> tag does not close until after both <c02> elements have opened and closed within it. Likewise, each of the <c02> elements do not close until after all of the <c03> elements have opened and closed within them. It is not until after all folders/items in both subseries in the first series have been encoded that the closing </c01> tag is encoded and the second series begins with a new <c01> tag.

The LEVEL attribute on the <c01> ... <c12> must be set when the component being described is a series or subseries (e.g., <c01 level="series"> and <c02 level="subseries">). The LEVEL attribute below subseries is

optional.

Every numbered and unnumbered <c01> ... <c12> element is required to have a <did> element.

All of the elements available at the collection level within <archdesc> (e.g., <scopecontent>, <bioghist>, etc.) are also available for use in the <c01> ... <c12> levels of description. However, the majority of these elements will not be needed because the lower levels of description inherit the information recorded in higher levels of description. For example, there is no need to repeat a <bioghist> element for a series because the <archdesc><bioghist> already describes the biographical/historical information for the entire collection. The <scopecontent> is frequently used at <c01> ... <c12> levels in series and subseries descriptions, but it is not necessary to repeat information that already has been recorded in higher level descriptions.

Every <c0x> element must include a <unittitle> element describing the component. In the case of higher level series or subseries components, the <unittitle> element will consist of series titles. In the case of lower level components, the <unittitle> element will consist of folder or item titles.

The <container> element is used to describe the physical containment of components within the container list. The TYPE attribute must be set to an appropriate value such as box, folder, reel, volume, etc.

The <unitdate> TYPE attribute should be "inclusive" even if the date is a single year. If bulk dates are to be included use a second <unitdate> element with the type="bulk" attribute value. For example:

```
<unittitle>Speeches and Writings, </unittitle><unitdate type="inclusive" normal="1956/1965">1956-1965</unitdate> <unitdate type="bulk" normal="1961/1962">(1961-1962)</unitdate>
```

Note that within the <dsc> section of the finding aid, all <unitdate> elements are entered separately from the <unittitle> elements. The <unittitle> element is entered first and it contains only the title of the series, container or item. The <unitdate> element is entered after the closing </unittitle> tag. The EAD Tag Library does not require this, and it is possible to enter the <unitdate> element inside of the <unittitle> element if that is institutional preference. For example, within a Chronological Correspondence series each folder might simply be identified by a date or date range:

```
<unittitle><unitdate type="inclusive">1956</unitdate></unittitle>  
<unittitle><unitdate type="inclusive">1957-1958</unitdate></unittitle>
```

Keep in mind that the NORMAL attribute used to include normalized dates is required at the <c01> series level, but not at lower levels of description. For more information, refer to the [Normalized Dates](#) section above.

The <physdesc> element can be used within each <c0x><did> to provide information about the extent and format of materials within that section of the collection (e.g., the <extent>, <dimensions>, <genreform> elements are particularly useful). The <physdesc> element is most often used at the <c01 level="series"> component level, but it is not recommended for lower levels of description unless institutional practices dictates otherwise. Note that the <physdesc> element must be outside <unittitle> but within <did>.

```
</dsc>
```

```
</archdesc>
```

```
</ead>
```

Optional Bibliography Element within <archdesc>:

```
<bibliography>
```

```
<head>Bibliography</head>
```

```
<p>[Optional brief statement explaining the nature of the bibliography]</p>
```

```
<bibref>
```

```
<persname>[author of resource]</persname>. <title render="italic">[title of resource]</title>. [Place of publication: publisher name, date, page numbers, volume/issue information for serials, etc.].
```

```
</bibref>
```

```
</bibliography>
```

If used, the <bibliography> element usually is placed at the end of the finding aid, following the close of the <dsc> and preceding the close of the <archdesc> element. Include <head> and <p> elements to identify the bibliography and provide a brief description of it (e.g., “Articles and Books Published by Enoch Soames.”). Each entry in the bibliography is encoded in the <bibref> element. Use elements such as <persname>, <corpname>, <title>, etc. to identify specific pieces of data within each entry.

Optional Index Element within <archdesc>:

```
<index>
```

```
<head>Index</head>
```

```
<p>[Optional brief statement explaining the nature of the index]</p>
```

```
<indexentry>
```

```
<persname>[index term]</persname>
```

```
<ref>[text for link]</ref>
```

```
</indexentry>
```

```
</index>
```

If used, the <index> element usually is placed at the end of the finding aid, following the close of the <dsc> and preceding the close of the <archdesc> element. Include <head> and <p> elements to identify the index and provide a brief description of it (e.g., “Index of names in the Enoch Soames Papers.”). Each entry in the index is encoded in the <indexentry> element. Use elements such as <persname>, <corpname>, etc. to identify specific pieces of data within each entry. For example, in the template above replace the <persname> tags with <corpname>, <subject>, <title>, etc., depending on the nature of the index term. The <ref> element provides the internal link to that portion of the finding aid that contains the index term. For more information on linking, please refer to the [Internal Linking](#) section. Consult the [EAD Tag Library](#) for additional information on <index>, including the grouping of multiple <ref> links associated with one index entry term.

Additional Encoding Guidelines

In addition to the encoding issues presented in the encoding template and commentary section above, there are multiple issues that require in-depth discussion. These include XML and document declarations, external and internal linking elements, and the description of new additions to collections.

XML Declaration, DOCTYPE Declaration, and Declaration Subset

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/xsl" href="[stylesheetfilename].xsl"?>
<!DOCTYPE ead PUBLIC "-//ISBN 1-931666-00-8//DTD ead.dtd (Encoded Archival Description (EAD)
Version 2002)//EN" "ead.dtd" [
<!ENTITY libseal PUBLIC "-//Florida State University::Florida State University Libraries//NONSGML (FSU
library seal)//EN" "libseal.gif" NDATA gif>
<!ENTITY libaddress PUBLIC "-// Florida State University::Florida State University Libraries//TEXT (FSU
library address)//EN" "libaddress.xml">
]>
```

EAD finding aids encoded in XML should begin with the XML Declaration, which specifies the version of XML being used. In first line above, XML Version 1.0 is declared and the ISO standard 8859-1 is declared as the character set used for encoding.

The second line identifies a stylesheet that will be used to transform the XML finding aid into another format for display, printing, sharing, or some other purpose. Stylesheets most frequently are used to transform an XML finding aid into an HTML finding aid for display on the Internet. For more information refer to the [Stylesheets](#) section of this document.

The DOCTYPE Declaration states that the document conforms to the rules of the EAD DTD. Note that this declaration points to the actual “ead.dtd” file on your computer or server. When viewing or parsing EAD finding aids, keep in mind that the DOCTYPE Declaration is declaring that the “ead.dtd” file exists in a specific location. In the template above, because there is simply a filename (ead.dtd) without a directory path of any kind, the browser or software attempting to load the EAD finding aid will expect the “ead.dtd” file to be in the same directory as the EAD finding aid itself. If the ead.dtd file exists in another directory, then you will need to alter this path accordingly. For example, if the ead.dtd file exists in a subdirectory named “eadfiles” on the computer or server, then the path would need to be changed to “/eadfiles/ead.dtd”.

In order to download the ead.dtd file and associated files, visit the EAD DTD Version 2002 page (<http://www.loc.gov/ead/ead2002a.html>) and follow the download instructions.

The Declaration Subset is the declarations of entities or elements between the open and close brackets [] in the DOCTYPE Declaration. Entities are external objects (e.g., images, encoded text files, etc.) that often are used to display information that occurs commonly in an institution’s finding aids. For example, an institutional address can be included as an entity. Rather than typing the address fully in the finding aid, the address can be stored in a separate XML file and referenced from within the finding aid. The DOCTYPE and ENTITY declaration lines should not have manual line breaks in them, but it is okay if they wrap to the next line automatically.

In the template above, there are two ENTITY declarations. The first declares an entity named “libseal” that is a GIF image of the library’s seal. The second declares an entity named “libaddress” that is an XML text file

containing the library's address. In both entity declarations, the filename for the entity object can be found in quotes at the end of the line. The external object for the "libaddress" entity is a file named "libaddress.xml", for example. Once this entity has been declared, it can be inserted into the finding aid by surrounding the entity name between an ampersand and a semicolon:

```
&libaddress;
```

When the browser or parser software encounters this entity reference in the finding aid, it will read the ENTITY Declaration, locate the "libaddress.xml" file (which should be located in the same directory as the EAD finding aid file), and replace &libaddress; with the contents of the libaddress.xml file.

Non-text entities such as the "libseal" image entity are inserted using a different method than the text entity above. To insert the "libseal" image into the finding aid, for example, use this format:

```
<extptr show="embed" entityref="libseal"/>
```

When the browser or parser software encounters this <extptr> element in the finding aid, it will read the ENTITY Declaration, locate the "libseal.gif" file (which should be located in the same directory as the EAD finding aid file), and insert the image in the same location as the <extptr> element within the finding aid.

External Linking

External linking elements can be added almost anywhere in the EAD finding aid. There are two basic types of links:

1. Links that point to digital objects described in the finding aid. In other words, if you have an item described in your finding aid (e.g., a photo) and this item is available online digitally, then you can link from the description of the item to the digital object itself.
2. Links that simply reference another online file (e.g., such as an HTML link to the online finding aid for a related collection). If you have the records of an organization with a web presence, for example, you might want to include a link to the organization's home page.

References to digital objects usually only occur in the container list (<dsc>) section of the finding aid because that is where items are usually described, but they can be found in <bioghist> or <scopecontent> elements as well. Links to related finding aids or other online files can be found at any level of the finding aid, but are most frequently found in the collection level <archdesc> elements such as <scopecontent>, <bioghist>, <relatedmaterial>, etc.

The external reference and pointing elements include <bibref>, <dao>, <daoloc>, <title>, <extref>, <archref>, and <extptr>. For more information on linking elements, refer to the *EAD Application Guidelines*, available at: <http://lcweb.loc.gov/ead/>.

Linking to Digital Objects

To link to a digital object that is described in the finding aid use the Digital Archival Object (<dao>) or Digital Archival Object Group (<daogrp>) elements. These elements should only be used to link to objects that have been digitized from the collection or are born-digital materials that are part of the collection. Do not use <dao>

or <daogrp> to link to materials not in the archival unit being described. The <dao> tag should be used for linking to individual digital objects. The <daogrp> tag can be used to link to multiple representations of a digital object (e.g., a thumbnail and a larger image).

To include a link to a single digital object, use this encoding:

```
<dao href="[URL for digital object]" title="[Text for link: e.g., View digital object]" />
```

To include links to multiple representations of a digital object, use this encoding:

```
<daogrp>  
<daodesc><p>[digital object description]</p></daodesc>  
<daoloc role="thumbnail" href="[ URL for digital object]" title="[text for HTML alt attribute]"/>  
<daoloc role="high res" href="[ URL for digital object]" title="[text for HTML alt attribute]"/>  
</daogrp>
```

Note that the <daoloc> element is an empty element (i.e., there is no closing </daoloc> tag). This is signified by the “/” that appears at the end of the attributes in the opening <daoloc> tag. This also is true of the <dao> element.

Digital archival objects are found most often in <c0x> components. For example, the encoding below will provide a link to the digital object of the photograph:

```
<c02>  
<did>  
<container type="box">7</container>  
<unittitle>Photograph of Enoch Soames in the British Museum Reading Room, </unittitle><unitdate  
type="inclusive">1997</unitdate>  
<dao href="http://www.fl.edu/images/soames.jpg" title="View digital object" />  
</did>  
</c02>
```

Linking to Other Files

To link to a resource external to the finding aid such as another online file (e.g., an HTML link to the online finding aid for a related collection), use the <extref> element. For example:

```
<extref href="http://www.ufl.edu/example.htm">http://www.ufl.edu/example.htm</extref>
```

Be sure to include the full URL for the link:

Incorrect: www.ufl.edu/example.htm

Correct: <http://www.ufl.edu/example.htm>

It also is possible to use text almost anywhere in the finding aid as the link text. For example, to make the name “Enoch Soames” in the <bioghist> element a link that will open a web page related to Mr. Soames, simply replace the name with:

```
<extref href="http://www.ufl.edu/soames.htm">Enoch Soames</extref>
```

Linking to Institutional Seals or Other External Digital Objects Not Found in the Collection

External digital objects (e.g., image or audio files) should be declared in the declaration subset of the EAD finding aid (in the DOCTYPE declaration). Please see the [Referencing External Entities](#) section for instructions concerning the declaration of different types of entities. To reference a declared entity using an external pointer or reference, supply the Entity Name in the declaration in the ENTITYREF attribute of the pointer or reference element (e.g., <extptr>).

For example, if the declaration subset has a declaration for an institutional seal:

```
<!ENTITY libseal PUBLIC "-//Florida State University::Florida State University Libraries//NONSGML
(FSU library seal)//EN" "libseal.gif" NDATA gif>
```

The external pointer to this seal would be:

```
<extptr entityref="fsuseal" show="embed"/>
```

Internal Linking

Internal links can be created using the <ref> element and ID attribute. For example, to include a link from the <scopecontent> element to a point in the <dsc> container list, use the <ref> element:

```
<scopecontent>
<p>The <ref target="ser1">Publications Series</ref> consists of...</p>
</scopecontent>
```

Then, use the ID attribute in the contents list to provide the link destination:

```
<c01><did>
<unittitle id="ser1">Publications, </unittitle><unitdate type="inclusive" normal="1913/1915">1913-
1915</unitdate>
</did></c01>
```

Within each EAD finding aid document identifiers must be unique (e.g., do not have two ID attributes with the value of "ser1"). Identifiers in the TARGET and ID attributes must be identical, and they may consist of both letters and numbers.

Referencing External Entities

Entity references are used to include information that is repeated in all or many EAD finding aid documents. For example, it is much easier to store a repository address in an external file and then refer to that external entity. That way, if the information in the entity is updated (e.g., the zip code changes) it only needs to be changed in that one location rather than having to make the change in all of the EAD finding aids. Other examples include: a repository seal on the title page, graphics or audio files, and digital representations of materials in the collection.

Once an external entity has been declared, it is very easy to insert that entity into the finding aid document. For example, text entities can be inserted into the finding aid by surrounding the entity name with an ampersand and

a semicolon. This is known as a direct entity reference:

```
&libaddress;
```

The entity declaration for “addr_usf” in the document’s Declaration Subset might appear as:

```
<!ENTITY libaddress PUBLIC "-// Florida State University::Florida State University Libraries//TEXT  
(FSU library address)//EN" "libaddress.xml">
```

Wherever this entity reference occurs in the EAD document, it will be replaced by the contents of the external object (in this case, the library address). The same is true with external image objects. The following <exptr> empty linking element refers to the entity named “libseal” and indicates that it should be embedded within the body of the finding aid at the location of the <exptr> element.

```
<exptr entityref="libseal" show="embed"/>
```

The entity declaration for “fsuseal” in the document’s declaration subset might appear as:

```
<!ENTITY libseal PUBLIC "-//Florida State University::Florida State University Libraries//NONSGML  
(FSU library seal)//EN" "libseal.gif" NDATA gif>
```

Important: It should be noted that there are some important distinctions between the two entity declarations and references in the examples above. In the first example (libaddress), this entity is intended to be parsed along with the rest of the EAD document. Prior to the parsing process, each and every “&addr_usf;” reference is replaced with the contents of the external “libaddress.xml” file. The second example (libseal) also includes the NDATA keyword followed by a notation name indicating the type of external file. By including the NDATA keyword, the processing software knows that the referenced file contains data that should not be parsed. Because the external entity “libseal.gif” is external and not intended for parsing, an EAD linking element (e.g., <exptr>) is used to reference it rather than the direct entity reference using the ampersand and semicolon.

Additional information about the Declaration Subset of an EAD finding aid document can be found in the [XML Declaration, DOCTYPE Declaration, and Declaration Subset](#) section.

More information on entities and notations can be found in the *EAD Application Guidelines*, available online at the official EAD web site: <http://lcweb.loc.gov/ead/>

Describing New Additions to Collections

There are several ways to handle collections that have significant new accessions/additions to existing materials that already have been described in the finding aid. Some institutions may prefer to create a new finding aid for the later accessions to the collection and simply provide links between the finding aids. It also is possible to create a new <dsc> element in the original finding aid containing the description for the additional material. It is recommended, however, that the descriptive information about the addition be added to the end of an existing finding aid in a <c0#> element as an artificial series.

When adding new accessions/additions to the collection, use an appropriate heading in the <unittitle> element at the <c01> level (e.g., "Accession [number]" or “[Year] Addition”). The <unitid> element can be used to distinguish this accession from previous or subsequent additions to the collection. For example:

```
<c01 level="series">
<did>
<unitid>1987-02</unitid>
<unittitle>Addition I (1987-02)</unittitle>
</did>
<scopecontent>
<p>This addition to the collection includes...</p>
</scopecontent>
<c02>
<did>
<container type="box">1</container>
<unittitle>Correspondence, </unittitle><unitdate>1986</unitdate></did>
etc.
```

Keep in mind that significant additions to the <dsc> portion of the finding aid also will dictate changes to collection level elements such as scope and content notes, arrangement notes, physical description/extent, the collection date range, etc. In addition, details of all changes made to the finding aid should be listed in the <revisiondesc> element in the <eadheader>.

References and Resources

Encoded Archival Description (EAD): Official EAD Version 2002 Web Site - <http://www.loc.gov/ead/>

EAD Application Guidelines - <http://www.loc.gov/ead/>

EAD Crosswalks to MARC and ISAD(G) (included in the EAD Tag Library) - http://www.loc.gov/ead/tglib/appendix_a.html

EAD Help Pages (including the *EAD Cookbook* by Michael Fox), hosted by the EAD Round Table of the Society of American Archivists - <http://jefferson.village.virginia.edu/ead/>

EAD Tag Library - <http://www.loc.gov/ead/>

Library of Congress Recommended Best Practices for Encoded Archival Description Finding Aids - <http://www.loc.gov/ead/practices/lcp2002.html>

North Carolina Encoded Archival Description (EAD) Project Best Practice Guidelines for EAD Version 2002 - <http://www.ncecho.org/ncead/ead2002.htm>

PALMM Archival Collections - <http://palmm.fcla.edu/index.html>

Online Archive of California (OAC) Best Practice Guidelines for Encoded Archival Description - <http://www.cdlib.org/inside/diglib/guidelines/bpgead/>

RLG Best Practice Guidelines for Encoded Archival Description: http://www.rlg.org/en/page.php?Page_ID=450

Appendix A: Example of an Encoded Finding Aid

The following example of an encoded finding aid is based on the best practice guidelines developed for Florida institutions. This example includes required and commonly used EAD elements, but it does not include every element available. Please note that this is a fictitious finding aid describing a fictitious archival collection.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<!DOCTYPE ead PUBLIC "-//ISBN 1-931666-00-8//DTD ead.dtd (Encoded Archival Description (EAD)
Version 2002)//EN" "ead.dtd">

<ead>
<eadheader langencoding="iso639-2b" countryencoding="iso3166-1" repositoryencoding="iso15511"
dateencoding="iso8601" scriptencoding="iso15924">

    <eadid countrycode="us" mainagencycode="FCLA" publicid="-//us::FCLA//TEXT
us::FCLA::FCLA2002_01//EN">FCLA2002_01</eadid>

    <filedesc>
        <titlestmt>
            <titleproper>Finding Aid for the Chad Hanging Papers</titleproper>
            <author>Finding aid prepared by Elizabeth Konzak</author>
        </titlestmt>
        <publicationstmt>
            <publisher>FCLA Archives</publisher>
            <address>
                <addressline>5830 NW 39th Avenue</addressline>
                <addressline>Gainesville, FL 32606</addressline>
            </address>
        </publicationstmt>
    </filedesc>

    <profiledesc>
        <creation>Finding Aid Written by Elizabeth Konzak, Encoded by Elizabeth Konzak, <date
normal="2006-03">March 2006</date></creation>
        <language>Description is written in <language langcode="eng">English</language>.</language>
        <descrules>Finding aid prepared using <title>DACS</title></descrules>
    </profiledesc>

</eadheader>

<archdesc level="collection">

    <did>
        <unitid countrycode="us" repositorycode="FCLA">FCLA2002_01</unitid>
        <unittitle>Chad Hanging Papers, <unitdate>2000-2001</unitdate></unittitle>
        <physdesc>
            <extent>4 Boxes, 6 Linear Feet</extent>
        </physdesc>
        <abstract>Chad Hanging, a political activist known as the "Dean of Voting Machines" rose to infamy
during the 2000 presidential election voting in Florida. The papers document the activities of Chad and
```

the legal battle for the US presidency.</abstract>

<origination>Created and collected by Chad Hanging between 2000-2001.</origination>

<langmaterial>

<language>English</language>

</langmaterial>

<repository><corpname>Florida Center for Library Automation</corpname>

</repository>

</did>

<accessrestrict><p>Selected Files in Box 1 are restricted until 2050.</p></accessrestrict>

<userrestrict><p>The collection is open for research.</p></userrestrict>

<prefercite><p>Chad Hanging Papers, 2000-2001. FCLA Archives. Gainesville, Florida.</p></prefercite>

<custodhist><p>The papers were stored at the home of Chad Hanging's mother, Martha Hanging, before being donated to the FCLA Archives.</p></custodhist>

<acqinfo><p>The papers were donated in 2002 by Chad and Martha Hanging.</p></acqinfo>

<processinfo><p>The collection was processed in 2002. Newspaper clippings were photocopied for longevity.</p></processinfo>

<altformavail><p>Some materials from the collection have been digitized for the online exhibit, Presidential Election Controversy: Documents from the Chad Hanging Papers.</p></altformavail>

<bioghist>

<head>Biographical Note</head>

<p>Chad Hanging found early in life that he loved politics. After helping in elections all over the country by inspecting voting machines, he settled in Florida in 1999. Hanging assisted with voting machine inspection during the 2000 US presidential election; and rose to meteoritic fame after the election was deadlocked while vote recounting and legal cases. Hanging has retired from politics and currently resides in Panama.</p>

<chronlist>

<head>Brief Chronology</head>

<chronitem>

<date>November 7, 2000</date>

<event>Presidential Election Day</event>

</chronitem>

<chronitem>

<date>November 8, 2000</date>

<event>Voting recounts begin.</event>

</chronitem>

<chronitem>

<date>November 27, 2000</date>

<event>Voting recounts legally contested.</event>

</chronitem>

<chronitem>
<date>December 12, 2000</date>
<event>Supreme Court rules to stop recounts.</event>
</chronitem>
</chronlist>
</bioghist>

<scopecontent>
<head>Scope and Content Note</head>
<p>The Chad Hanging papers include correspondence, legal documents, voting machine information, sample ballots, and selected publicity documentation surrounding the voting recounts, such as newsclippings, interview requests, and photographs. The materials consistently document Chad Hanging's experience during 2000-2001. </p>
<arrangement><p>The documents are arranged in three series: Correspondence, 2000-2001, Voting Machine Documentation, 2000-2001, and Publicity, 2000-2001.</p></arrangement>
</scopecontent>

<controlaccess>
<head>Index Terms</head>
<p>Similar records may be found by searching under the following index terms.</p>

<corpname source="lcnaf">United States. Supreme Court.</corpname>
<famname source="lcnaf">Bush Family</famname>
<function source="aat">Politicians</function>
<persname source="lcnaf">Bush, George W. (George Walker), 1946-</persname>
<persname source="lcnaf">Bush, Jeb</persname>
<geogname source="lcsh">Florida</geogname>
<genreform source="aat">News Photographs</genreform>
<occupation source="lcsh">Election Workers</occupation>
<subject source="lcsh">Presidents -- United States -- Election -- 2000 -- Sources.</subject>
<subject source="lcsh">Florida -- Politics and government</subject>
</controlaccess>

<relatedmaterial><p>Related materials may be found in the State Archives of Florida.</p></relatedmaterial>

<separatedmaterial><p>Books donated with the collection have been cataloged individually. Search for the Chad Hanging Collection in the online catalog.</p></separatedmaterial>

<dsc>
<head>Container List</head>

<c01 level="series">
<did>
<unittitle>Series I: Correspondence</unittitle>
<unitdate>2000-2001</unitdate>
<physdesc>
<extent>2 Boxes, 2.5 linear feet</extent>
</physdesc>
</did>

<scopecontent><p>Series I contains correspondence, datebooks, and legal documentation.</p>
</scopecontent>

<c02 level="file">
<did>
<unittitle>Personal Correspondence</unittitle>
<unitdate>2000-2001</unitdate>
<container type="Box">1</container>
<physdesc>
<extent>(3 folders)</extent>
</physdesc>
</did>
</c02>

<c02 level="file">
<did>
<unittitle>Datebooks</unittitle>
<unitdate>2000-2001</unitdate>
<container type="Box">1</container>
<physdesc>
<extent>(4 volumes)</extent>
</physdesc>
</did>
</c02>

<c02 level="file">
<did>
<unittitle>Business Correspondence</unittitle>
<unitdate>2000-2001</unitdate>
<container type="Box">2</container>
<physdesc>
<extent>(5 folders)</extent>
</physdesc>
</did>
</c02>

<c02 level="file">
<did>
<unittitle>Legal Correspondence</unittitle>
<unitdate>2000-2001</unitdate>
<container type="Box">2</container>
<physdesc>
<extent>(7 folders)</extent>
</physdesc>
</did>
<userrestrict><p>Restricted. Files closed until 2050.</p></userrestrict>
<accessrestrict><p>Please contact Curator for access.</p></accessrestrict>
</c02>

</c01>

```

<c01 level="series">
  <did>
    <unittitle>Series II: Voting Machine Documentation</unittitle>
    <unitdate>2000-2001</unitdate>
    <physdesc>
      <extent>1 Box, 1.25 linear feet </extent>
    </physdesc>
  </did>
  <scopecontent><p>Series II contains information on Voting machines, including brochures, ballot
  samples.</p>
  </scopecontent>

  <c02 level="file">
    <did>
      <unittitle>Brochures</unittitle>
      <unitdate>2000</unitdate>
      <container type="Box">2</container>
      <physdesc>
        <extent>(4 folders)</extent>
      </physdesc>
    </did>
  </c02>

  <c02 level="file">
    <did>
      <unittitle>Ballot Samples</unittitle>
      <unitdate>2000</unitdate>
      <container type="Box">2</container>
      <physdesc>
        <extent>(6 folders)</extent>
      </physdesc>
    </did>

    <c03 level="file">
      <did>
        <unittitle>Optical Scan</unittitle>
        <unitdate>2000</unitdate>
        <container type="Box">2</container>
      </did>
    </c03>

    <c03 level="file">
      <did>
        <unittitle>Butterfly</unittitle>
        <unitdate>2000</unitdate>
        <container type="Box">2</container>
      </did>

      <c04 level="file">

```

```

    <did>
      <unittitle>Punched Sample Ballots</unittitle>
      <unitdate>2000</unitdate>
      <container type="Box">2</container>
      <physdesc>
        <extent>(2 folders)</extent>
      </physdesc>
    </did>
  </c04>

  <c04>
    <did>
      <unittitle>Hanging Chad Ballots</unittitle>
      <unitdate>2000</unitdate>
      <container type="Box">2</container>
      <physdesc>
        <extent>(2 folders)</extent>
      </physdesc>
    </did>
  </c04>
</c03>
</c02>
</c01>

<c01 level="series">
  <did>
    <unittitle>Series III: Publicity</unittitle>
    <unitdate>2000-2001</unitdate>
    <container type="Box">3-4</container>
    <physdesc>
      <extent>2 Boxes, 2.5 Linear Feet</extent>
    </physdesc>
  </did>
  <scopecontent><p>Series III consists of publicity materials created during the election recounts. Some materials were selected and pasted into a scrapbook by Chad Hanging's mother, Martha Hanging.</p>
</scopecontent>

  <c02 level="file">
    <did>
      <unittitle>Newsclippings</unittitle>
      <unitdate>2000-2001</unitdate>
      <container type="Box">3</container>
    </did>
  </c02>

  <c02 level="file">
    <did>
      <unittitle>Interview Request Log</unittitle>
      <unitdate>2000-2001</unitdate>

```

```

        <container type="Box">4</container>
    </did>
</c02>

<c02 level="file">
    <did>
        <unittitle>Interview Videos</unittitle>
        <unitdate>2000-2001</unitdate>
        <container type="Box">4</container>
        <physdesc>
            <extent>(10 VHS Tapes)</extent>
        </physdesc>
    </did>
</c02>

<c02 level="file">
    <did>
        <unittitle>Photographs</unittitle>
        <unitdate>2000-2001</unitdate>
        <container type="Box">4</container>
    </did>

    <c03 level="file">
        <did>
            <unittitle>Black and Whites</unittitle>
            <unitdate>2000-2001</unitdate>
            <container type="Box">4</container>
            <physdesc>
                <extent>(10 folders)</extent>
            </physdesc>
        </did>
    </c03>

    <c03 level="file">
        <did>
            <unittitle>Color</unittitle>
            <unitdate>2000-2001</unitdate>
            <container type="Box">4</container>
            <physdesc>
                <extent>(12 folders)</extent>
            </physdesc>
        </did>
    </c03>
</c02>

<c02 level="file">
    <did>
        <unittitle>Scrapbooks</unittitle>
        <unitdate>2000-2001</unitdate>
        <container type="Box">4</container>

```

```
<physdesc>  
  <extent>(2 Volumes)</extent>  
</physdesc>  
</did>  
</c02>  
</c01>  
</dsc>  
  
</archdesc>  
  
</ead>
```