

# EAD Tools Survey

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## Executive Summary

This survey seeks to provide a sketch of the current tool landscape in order to present information about tools available to smaller institutions which may help expedite wider adoption of the standard. The survey includes two parts: identification and description of the tools available; and results from a survey of users conducted in May and June 2005 to provide anecdotal information about tools and highlight perceived needs for the future. The survey looks at four categories of tools (authoring, publishing, discovery and knowledge) and includes commentary on various characteristics. It concludes with specific recommendations based upon user responses. Appendices include an alphabetical list of tools and a copy of the user survey.

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## Introduction

Encoded Archival Description (EAD) is nearly ten years old. Wide-spread adoption of the standard attests to the involvement and support of the archival community. The Society of American Archivists (SAA) has an EAD Working Group, which maintains the standard, and an EAD Roundtable, which provides a framework for community involvement and dissemination of information regarding the application of the standard. Both have become increasingly international in scope, from conference Roundtable presentations on applications in France and Germany, to Working Group membership representing six countries outside the United States. These efforts provide a solid foundation for the maintenance of the standard, but for many small repositories, technology, expertise, and staff resources still represent serious barriers to the implementation of EAD. Many areas have turned to statewide or regional consortial efforts for support. Other institutions have relied on the development and provision of tools available online or through personal connections. In addition, an electronic list maintained by SAA provides opportunities for person-to-person assistance in this community setting.

EAD provides enriched access to archival finding aids through a complex set of elements and attributes specified in an XML DTD. EAD provides a widely applicable standard, but its complexity and flexibility also create potential problems in application. In addition, it is the first standard to use the power of XML to leverage information about materials in an archival setting. Many large and sophisticated institutions have implemented XML in other settings and have capable staff experienced with the syntactic and technological requirements. Other institutions struggle with the technological requirements.

In addition to the adoption of XML as the most robust and long-lasting of the potential electronic methods for representing archival information, EAD emerged almost simultaneously with the open source community. Many of the technological solutions have been handled in an open source way. This includes wide publication of documentation and best practice guidelines and widespread community participation to provide access to tools for anyone interested in implementing the standard. But as we have learned from other open source ventures, even free things have a cost. Tools borrowed from other institutions or consortia require customization and some understanding of their functionality to improve effectiveness.

From the outset of the standard, archivists have noted the potential barriers to implementation brought on by the technological issues inherent in the implementation of EAD. In a 1998 article, Tatem outlined potential barriers to implementation brought on by the technological issues inherent in the process.<sup>1</sup> Using Everett Rogers' theory of the diffusion of innovation as a framework, Tatem identified not only specific technological problems but attitudinal obstacles that can impede implementation. Repositories implementing EAD have succeeded in overcoming many of the obstacles outlined by Tatem, particularly evidenced by the increasing numbers of institutions that report implementation.<sup>2</sup> Some obstacles noted by Tatem include the concept of EAD as a preventive innovation, inexperience in electronic publishing, a professional culture steeped in "lone-arrangers" and isolation, perception of complexity (which she predicts will be alleviated by the adoption of XML and the proliferation of easy-to-use software), and the invisibility of the benefits of adoption.

In 2001, Roth revisited the issues raised by Tatem in his examination of the deployment of EAD. He surveyed participating institutions and found that "initially, archivists selected their deployment methods for EAD finding aids based on relative ease of use, accessibility, availability, and affordability." "After a few years of implementing the EAD structure and delivering EAD finding aids through various deployment methods," he continued, "archivists have found that several problems or challenges remain."<sup>3</sup> Roth noted that technological aspects of deployment continue to provide obstacles for implementing EAD, and that technological volatility creates an atmosphere of instability. Like Tatem, he concluded by focusing on the need for research on effectiveness of archival finding aids in the online environment as a next frontier in order to better assess the usefulness of the standard and assist in its continuing development.

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<sup>1</sup> Jill Tatem, "EAD: Obstacles to Implementation, Opportunities for Understanding" in *Archival Issues*, 23(2), (1998), pp. 155-169.

<sup>2</sup> In 2001, Roth (James M. Roth, "Serving Up EAD: An Exploratory Study on the Deployment and Utilization of Encoded Archival Description Finding Aids" in *American Archivist*, 64, (2001), pp. 214-237) cited 47 institutions listed on the EAD web site. As of 11 July 2005 the EAD Sites Annotated web site (<http://www.archivists.org/saagroups/ead/sitesann-index.html>) lists 64 sites and 20 cooperative projects. Note that this does not reflect in absolute numbers the growth of EAD implementation but does show expansion. Roth's article does not provide a list or count of consortia extant at the time of his study, but currently it is clear that consortia are playing an active role in implementation.

<sup>3</sup> Roth, p. 233.

In 2001, Prom discussed the extension made to one toolset available to the community, the *EAD Cookbook*.<sup>4</sup> He outlined macros developed to expedite encoding and concluded that “the *Cookbook* provided [the University of Illinois] with a superior, easily customizable display mechanism... the *Cookbook* allowed us to concentrate our efforts on developing a good production environment rather than developing our own tag library.”<sup>5</sup> He followed this exposé on his own adaptation of the *EAD Cookbook* with a survey and usability study of the *Cookbook* in 2002.<sup>6</sup> This survey highlighted most of Tatem’s concerns, directly or not, in an interpretive environment. Many adopters surveyed were from academic environments, already curious about technology and therefore willing and able to surpass the desire for immediate pay-off. This attitude is confirmed by Dow’s confessions in her article about EAD implementation at the University of Vermont.<sup>7</sup> Prom’s respondents showed faith in the advance of technology. For example, several of them noted that XML browsers were the root of the problem, not EAD or its coding. Prom hinted that this faith may display a basic misunderstanding of the technology behind EAD because XML “browsers” (those that can read native XML documents) already existed and only four of the 27 respondents planned to have any kind of search and retrieval mechanism accompanying their XML documents.<sup>8</sup> Prom concluded that the *EAD Cookbook* is an effective tool for implementing EAD but that there is not a clear understanding of the effectiveness of EAD finding aids to the end user. Taking all this research in combination, the recurring theme of end user impact demonstrates the anxiety that is exacerbated by the apparent technological difficulties of implementation.

### “Tools” definition

For the purposes of this survey, the term “tools” is defined as any technological solution created by EAD implementers and made freely available for the EAD community for use with or without software for the creation, publication, or discovery of EAD instances. The definition also encompasses knowledge tools such as Best Practice Guidelines that are published on the web.

### Identifying the tools

Several different approaches were used in order to be as comprehensive as possible in the survey. Google searches uncovered many different resources on EAD that have been published on the web. The EAD Sites Annotated (<http://www.archivists.org/saagroups/ead/sitesann-index.html>) provides descriptions and links to EAD projects at individual institutions and consortiums that promote the creation of EAD instances. Each of the institutions was investigated to see if they provided tools, or referred to tools used in their own project development. Finally, the EAD Tools User Survey (see below) provided information about tools available.

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<sup>4</sup> Christopher J. Prom, “Extending the Capabilities of the *EAD Cookbook*” in *OCLC Systems & Services*, 17, (2001), pp. 89-95.

<sup>5</sup> Prom, “Extending the Capabilities of the *EAD Cookbook*,” p. 90.

<sup>6</sup> Christopher J. Prom, “The *EAD Cookbook*: A Survey and Usability Study” in *American Archivist*, 65, (2002), pp. 257-275.

<sup>7</sup> Elizabeth H. Dow, “EAD and the Small Repository” in *American Archivist*, 60, (1997), pp. 446-447 and reprinted in *Encoded Archival Description: Context, Theory, and Case Studies*, Jackie M. Dooley, ed. (Chicago: Society of American Archivists, 1999), pp. 165-173.

<sup>8</sup> Prom, “The *EAD Cookbook*,” pp. 264-265.

## EAD Help Pages

The EAD Help Pages (<http://www.archivists.org/saagroups/ead/>), maintained by the EAD Roundtable, is intended to be a repository for tools developed by the EAD community.<sup>9</sup> This site represents the most logical place for information about available tools. "Tools" on the EAD Help Pages refers to macros, templates, and scripts, and relies upon a web site hosted at North Carolina State University Libraries ([http://www.lib.ncsu.edu/archives/tech\\_serv/eadtools.html](http://www.lib.ncsu.edu/archives/tech_serv/eadtools.html)). As of 10 August 2005, the link was no longer active. The related site included macros for WordPerfect, MSWord, and other tools developed by a variety of active community members. Most tools referred to in the page were for legacy systems and SGML encoding. It demonstrates the maintenance issues that are the heart of tool provision.

Also included on the EAD Help Pages was one sample stylesheet and EAD examples of an oral history project at the Bancroft Library, University of California, Berkeley. Other links included tools for Author/Editor, OpenText LiveLink (an indexing software), XMetaL, Microsoft Word, and Corel WordPerfect. Additions to these pages could include EAD-version information as well as encoding standards that the tools are written in.

Despite some problems with legacy data and other issues, the Help Pages provides an appropriate framework for a repository of tools for authoring, publishing, and discovery. The Help Pages have been an established source of information for repositories embarking on EAD implementation or revisiting their existing encoding protocols. For example, a "Normalize dates" tool has been added to these pages recently. This Perl Script can be used to automatically generate @NORMAL attributes for <unitdate> elements within an EAD document with accompanying ISO 8601 values for the content of the element. The EAD community has long been calling for this kind of script to automate a task that is time-consuming. The addition of this script represents the kind of open community envisioned by EAD creators and leaders. In addition, access to the tool is accompanied by a description of what it is and how it works, and any caveats to the tool that potential users might encounter. Most importantly, contact information for the tool's creator is also included. The addition of this tool and the EAD *Cookbook* provide excellent models for future tool repository maintenance. Description, instructions, and developer contact information will be necessary for sharing EAD implementation tools.

## Authoring Tools

Authoring tools are defined as those tools that help archivists generate encoded documents representing archival finding aids. These include tools created for specific XML editors, web forms, and related tools necessary for authoring EAD documents. These tools are described according to their accessibility, documentation, customizability, level of support, and comprehensiveness. Specific software requirements and accompanying components are also noted.

In evaluating authoring tools created by the EAD community, it became clear that very few tools are independent of an institution or consortial application. Not surprisingly, most tools

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<sup>9</sup> The 1999 EAD Roundtable minutes discuss the establishment of the EAD Help Pages (<http://www.archivists.org/saagroups/ead/eadrtminutes1999.html>). In those minutes, the Help Pages are described as "The web site was created as a means of sharing information on EAD and among other items contains FAQs, general background information, etc. It was decided not to include links to products, but rather provide links to implementers, and annotated sites with contact information." This model has changed over the years.

are accompanied by encoding guidelines or protocols that set requirements specific to that application. Much of the language involved in discussing these tools focuses on the requirement that they remain within the guidelines established by the institution or consortium, particularly in terms of customizations that may be available. It is clear that an advanced knowledge of the standard and an understanding of the assumptions built into the tools regarding the structure and content of EAD records are necessary when using these tools. An exception to this is the EAD *Cookbook*. This tool was intentionally created for widespread adaptation. Many tools have institutional or consortium-specific practices that may not be desirable for other institutions. While this survey does not document those customizations, adapting an online tool requires careful analysis of its output in EAD to see where institutions or consortium-specific information will need to be amended or erased.

### *A Note about XML Editing Programs*

It is clear from the user survey discussed below and the EAD Site Annotated web site that many institutions focus on the choice of XML editors in which to encode their EAD when discussing their EAD programs. XML editors discussed in the user survey and EAD Site Annotated web site are covered below, but an in-depth review of different XML editors programs is beyond the scope of this tools survey.<sup>10</sup> Reviewing the EAD Sites Annotated page may be a useful point of reference for institutions exploring that aspect of implementation.

### *Agile Image Movers EAD Conversion*

<http://www.agileimage.com/html/ead/>

*EAD Conversion* is a freely available proof of concept Java Web Start application that converts textual documents to EAD files. "This program reads two styles of input describing both the logical structure of a collection and the distribution of the collection in various containers and generates an EAD xml document." It is capable of reading spreadsheet formats or will convert valid EAD xml documents and re-generate the container lists using xml parent-id relationships. The tool is in the development stages, and it is noted that "You may use *Ead Conversion* freely. However, since this is still a proof of concept application, *it can and will change without notice*. If you would like a snapshot of a particular version, please contact me. Any comments, bugs, observations, or wish list requests are welcome." Documentation regarding the various input structures is provided but there is no discussion of the Encoded Archival Description output, links to the EAD Application Guidelines for Version 1.0 are provided instead. It does not provide areas for customization, although it is clear that as this application is further developed, the creator(s) will be open to suggestions and issues and may be able to provide customizations that way.

### *AMIGOS*

<http://www.amigos.org/training/walker/ead/index.html>

This tool is based on XMLSpy software, and can be used in either the purchased or free versions. It includes installation instructions, including information about file management specifications established to ensure that parsing and validating functions work properly. Other than that, there are no directions included with the AMIGO EAD training kit. It

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<sup>10</sup> See Thijs van den Broek, "Choosing an XML editor," <http://ahds.ac.uk/creating/information-papers/xml-editors/>.

appears that the tool is created to help learn EAD rather than as a customized version of EAD creation.

*Archives Hub*

<http://www.archiveshub.ac.uk/arch/dc.shtml>

The Archives Hub is a union database for archival description written in EAD. In order to assist contributors to the Archives Hub, they have created authoring tools. These consist of a web form (<http://www.archiveshub.ac.uk/eadform2002.html>) that provides boxes to complete and then “generates” EAD encoding in a separate window. This EAD can then be pasted into an xml editor for further enhancements. Note that while in the web form, no EAD tags are visible.

In addition to the web form, the Archives Hub provides tools for the creation of EAD records in xml editors. These include Dreamweaver MX, XMLSpy, oXygen, and XMetaL. Each of these includes not only templates and/or macros, but some instructions on the use of that software for EAD creation.

*EAD and Databases (Perl and ADO on MSWindows)*

<http://sunsite3.berkeley.edu/ead/tools/eaddb/>

Developed by Alvin Pollock of the Digital Publishing Group at the University of California – Berkeley, this set of tools combines the use of relational databases and EAD using perl programming language and the Microsoft ActiveX Data Objects (available for free download at <http://msdn.microsoft.com/library/default.asp?url=/downloads/list/dataaccess.asp>). Instructions and links are included for the various components required for this toolkit, including Perl 5.005 or later, MDAC 2.6 or later, and an eaddb.zip package which includes an XML parser and the necessary EAD files. These instructions include explicit paths for installation to assist in their use. The sample databases included in the kit are Microsoft Access databases, which carries with it field-character limitations. Suggestions to alleviate that problem include conversion to an SQL server. There are also some concerns about indexed and non-indexed fields in the initial Microsoft application. The documentation for this toolkit is relatively complete; it includes information about the underlying architecture and the conceptual framework that will help in the application of the tools. The toolkit comes with example programs, including a sample database, SGML file, import and export scripts, and a page of commentary. It also includes incorporated parsers and provides many options for the user to ensure that valid xml and EAD instances are imported to the database.

Accompanying documentation on the Conversion of Microsoft® Access Databases into EAD-encoded Finding Aids developed by Gabriela A. Montoya, Electronic Text Unit, UC Berkeley Library, provides step by step directions on converting from Access to EAD (based upon Version 1.0). These instructions can be found at:

<http://sunsite.berkeley.edu/FindingAids/uc-ead/tools/database/>

*EAD Cookbook 2002*

<http://www.iath.virginia.edu/ead/ead2002cookbookhelp.html>

First appearing in 2000, the *Cookbook* was a direct response to the archival community's need for assistance in implementing EAD. By all accounts, it has been the most widely adopted tool in the EAD community (see User survey below). It strives for platform independence by providing a variety of implementations based upon the software

implemented by institutions. It includes modules for XMetaL, <oxygen/>, and NoteTab. Instructions are included for installation and customization of the tools.

*Library of Congress EAD 1.0 to 2002 Conversion Toolkit*

[http://lcweb2.loc.gov/music/eadmusic/eadconv12/ead2002\\_r.htm](http://lcweb2.loc.gov/music/eadmusic/eadconv12/ead2002_r.htm)

The Conversion Toolkit is a “bare bones” open source conversion toolkit for EAD 1.0 to EAD 2002 for Windows 2000 and XP environments only. It uses an xsl stylesheet, includes installation instructions for the tool, James Clark’s SP, Michael Kay’s Saxon and includes a detailed listing of files required for the conversion process. It also includes conversions from SGML to XML, Version 1.0 to EAD 2002 as well as XML to HTML. It allows for batch runs to be made on these conversions. It includes FAQs and its creator, Mike Ferrando, often posts updates to the EAD listserv.

*NCEAD*

[http://www.ncecho.org/ncead/tools/tools\\_home.htm](http://www.ncecho.org/ncead/tools/tools_home.htm)

This toolkit is based upon the application of NoteTab software. It includes templates and libraries (bundles of macros) for the software to generate EAD instances. The web site includes instructions on the downloading of the tools, including a note about dictated file paths for appropriate application. The kit can be loaded as one, or individual parts can also be downloaded. Includes all the necessary programs for the creation of EAD instances, including a parsing function and provide contact information for toolkit development. The tools are based upon the NCEAD Best Practice Guidelines EAD 2002 (see Knowledge Tools below).

*New York University – EAD Production Guide*

<http://library.nyu.edu/findingaids/ead/>

This toolkit is based on NoteTab as the xml editor and uses templates files. Template files are constructed according to local guidelines, which are also in conformance with RLG’s Best Practice Guidelines and Michael Fox’s EAD Cookbook. Michael Kay’s Saxon software is used for parsing, and is included on the tools website. The foundation of these tools is those developed through the EAD Cookbook, but some adjustments have been made and various interpretations are available for review. See below in publishing tools for a discussion of their multiple stylesheets available for download.

*Northwest Digital Archives*

<http://nwda.wsulibs.wsu.edu/NWDABestPracticesfinal103.htm>

This toolkit is an XMetaL based toolkit with installation instructions for that software. It also provides some guidance on how to use XMetaL to encode EAD finding aids. The NWDATemplate.xml is constructed according to the NWDA Encoding Guidelines developed by a Best Practices Working Group (see Knowledge Tools below), but they provide some directions on customization. While they note that customizations should remain compliant with NWDA, the tools are available for customization outside of that consortium. NWDA XML Template documents and the accompanying guidelines provide the framework upon which the tools have been built to allow for more radical customizations if that is what is desired. They provide some specific directions on some XMetaL customizations as well, such as

prompts and element groupings. This toolkit is developed for a union database, with the tools focusing primarily on assisting the document creation, although an ead.css file accompanies the tools. Contact information for the Northwest Digital Archives is available, but it is unclear how accessible they would be to non-consortial members.

The Northwest Digital Archives also provides a toolkit for converting EAD 2002 to the MarcXML format (<http://staff.washington.edu/carlsonm/>). Conversion to the MARC communications format requires a further MARC conversion tool such as MARCEdit available here: <http://oregonstate.edu/~reese/marcedit/html/>.

*Old Dominion University*

<http://libstaff.lib.odu.edu/sgml/forms/ead/eadgenerator/>

The EAD Generator is an experimental tar file that includes the web forms and scripts that are used to generate EAD SGML on a Unix server. Directions on downloading and unpacking the tar file are available and a README file is part of the package which provides further instructions. Note that the EAD Generator requires CGI.pm, available for free at <http://stein.cshl.org/WWW/software/CGI>, in order to operate properly. Although the tool itself is based on an out-dated version of EAD, there are instructions on customizing the tools that may allow for adaptation to EAD 2002. The instructions include some necessary customizations to implement/use by institutions, including title page and header entities that should be customized. The generator provides options for four different container lists: folder listing, series and folder listing, series, subseries and folder listings, or manual editing which allows you to enter the container listing using an XML editor. The developer also provides contact information for assistance.

*Online Archives of California*

<http://oactools.cdlib.org/toolkit/>

The OAC Toolkit was created for institutions participating in the Online Archive of California to "assist in the creation, editing, manipulation, proofing and viewing their EAD-encoded finding aids." The toolkit includes installation instructions with layers of zipped files. The Online EAD Web Templates are constructed for various OAC institutions, but they also provide a version of the template itself for downloading and examples to help in the construction of a customized template. They note that the "The cgi program itself, with several sample templates, is available for download. Unfortunately, there currently is no documentation on the template syntax and creating your own templates. For now you should use the numerous examples to guide you." The tools include a Help document for the templates which focuses on input guidelines more so than template functionality (<http://oactools.cdlib.org/templates/help>). These tools are developed for the Windows 95 environment and will not work in a Windows NT environment, but instructions on how to work around that problem are provided. The tools include parsers and other tools included in the kit to automate such functions as conversion from EAD Beta to Version 1, a parser package, unitdate encoder (recognizes date information in EAD-encoded container lists and marks them as <unitdate>), persname encoder (recognizes inverted personal names in EAD-encoded container list <unittitle> elements and encodes them with <persname>. Some restrictions to this tool are outlined in an accompanying README.txt file), and container list tabularizer that overlays tabular markup onto non-tabular container lists. Each of these individual tools comes with an accompanying README.txt document that provides further information about the tool. These tools are developed for EAD Version 1.0; there do not appear to be accompanying EAD 2002 tools available at this time.



*RLG EAD Report Card*

[http://www.rlg.org/en/page.php?Page\\_ID=20513](http://www.rlg.org/en/page.php?Page_ID=20513)

The RLG EAD Report Card is a web application used to check the quality of encoding in EAD documents. It supplements the RLG Best Practice Guidelines for Encoded Archival Description (see Knowledge tools below) and allows users to compare their encoded documents against the best practices outlined in that document. It flags discrepancies and cites relevant guidelines in order to improve the encoding consistency. Plans for this tool include making the EAD Report Card code available to allow users to download and run it on their desktop to improve checkup speed. In addition, as an open source tool, this will allow customization to other best practices. The Report Card itself currently allows two different levels of checking: you may choose to check Mandatory (and MA) BPGs only or against the entire BPG.

*University of Minnesota*

<http://wiki.lib.umn.edu/Staff/FindingAidsInEAD>

Tools developed by the University of Minnesota are complementary to the EAD Cookbook 2002. These include tools that assist in converting Access databases to EAD (relying upon the UC-Berkeley instructions discussed above for <c01> level encoded finding aids and additional instructions made by the University of Minnesota for multiple level finding aids), and an accompanying sample database with reports that may be copied for the Access to EAD conversion. Note that the reports need to be copied into existing databases that contain information to convert into EAD and need some configuring in order to make this work. In addition to these conversion tools, a minimum requirements template is available that provides skeletal encoding for the University of Minnesota. Because this template is an xml document, it does not have an individual software platform and could be used in any XML editor. The tools do provide instructions for customizing the EAD templates and fonts and colors in XMetaL.

*University of Notre Dame*

<http://classic.archives.nd.edu/ead/>

This is a web form tool to generate EAD through a series of screens. The EAD generated should be cut and paste into an XML editor. An alternative version using JavaScript is available at <http://classic.archives.nd.edu/ead/ead.htm> No documentation accompanies this tool, and there is not a link of the University of Notre Dame web site for these tools or any information about their EAD program. While this tool does not have some of the customizability that can be required for effective EAD creation, it does provide a simple, straight-forward way to create EAD with little authoring-interaction with the elements and xml syntax.

*Virginia Heritage Project*

<http://lib.virginia.edu/small/vhp/admin.html>

The Virginia Heritage Project tools include a clip library written for NoteTab software that can be downloaded. This clip library includes some version history and clips for encoding <dsc> elements, formatting elements, and digital archival objects. Other tools developed by the Virginia Heritage Project are not available for adaptation by non-VHP institutions. VHP

does not include publishing tools because the model is a union database and EAD records are entered into the system and are rendered there.

## Publishing Tools

Publishing tools refers to the creation of eXtensible Stylesheet Language (XSL) or Cascading Style Sheets (CSS) for the delivery of EAD encoded finding aids on the web, either in XML, HTML or PDF formats. The survey looked at stylesheets made freely available for downloading and customizing, information accompanying or imbedded within the stylesheet regarding its functionality and purpose, and level of support available for assistance in using or making modifications to an existing stylesheet.

### *Archives Hub*

<http://www.archiveshub.ac.uk/arch/preview.shtml>

The Archives Hub provides a stylesheet for previewing EAD finding aids that can be adapted for institutional use. This stylesheet is intended to mirror how a finding aid would look in the Archives Hub service, and provides information for participants to contact the Archives Hub if there are issues with the way the stylesheet renders individual finding aids. That will expedite the inclusion of those finding aids in the Archives Hub. It does not provide assistance for the adoption of this stylesheet outside of Archives Hub, although the stylesheet does provide some directions and labeling within it.

### *EAD 2002 Cookbook*

<http://www.iath.virginia.edu/ead/ead2002cookbookhtml.html>

The EAD 2002 Cookbook provides a full range of stylesheets for adaptation by institutions. Included are nineteen XSL stylesheets for use with EAD finding aids. These work in conjunction with the encoding protocol outlined in Section 3 of the Cookbook. The developer, Michael Fox, assumes that the use of these stylesheets will uncover “bugs or unwanted side-effects” and encourages users to contact him with any information or questions. Modifications and customizations to the stylesheets are encouraged for applicability in individual situations.

Instructions are included at the top of the stylesheets for users. An example of these instructions are taken from eadcds5.xsl:

```
<!-- This stylesheet generates a Table of Contents inline-
at the top of document. It is an update to eadcb1.xsl designed
to work with EAD 2002.-->
```

```
<!--This stylesheet does not format the <dsc> portion of a finding aid. Users
need to select another stylesheet for the dsc and reference that file
in the <xsl:include> statement that appears at the end of this file.-->
```

Note that revision history and other aspects of the stylesheet are highlighted. Throughout the rest of the stylesheet, comments are included to indicate the purpose of each particular section and customization instructions are included.

### *NCEAD*

[http://www.ncecho.org/ncead/tools/tools\\_home.htm](http://www.ncecho.org/ncead/tools/tools_home.htm)

The NCEAD tools include five stylesheets for adoption. Three of these stylesheets work in coordination with each other, with the option for a frames or non-frames display. Within that suite, there is a customization stylesheet that allows for color and appearance of the finding aids, a general stylesheet for displaying the finding aids, and a frames or non-frames stylesheet that works with the eadcust.xsl and eadshared.xsl. In addition, a stylesheet is available for the transformation to pdf format, eadfo.xsl. While no detailed instructions exist within the stylesheets themselves for customization or modification, comments providing information about different functions are embedded. NCEAD provides contact information to the NC ECHO metadata coordinator, who provides support for the tools.

NCEAD has one section that is under-developed. They have tried to develop a shared space with other stylesheets developed within the consortium, "NCEAD encourages individuals creating stylesheets that have specific applications to share those with other institutions. To contribute a stylesheet, please contact [Kathy Wisser](#), NC ECHO Metadata Coordinator." However, no stylesheets have been contributed at this time.

*New York University—XSLT Stylesheets*

<http://library.nyu.edu/findingaids/ead/stylesheets.html>

This page lists a variety of stylesheets developed for multiple applications within New York University. It includes choices in banners and background colors and some differences in the placement of <frontmatter> elements. Included are a series a stylesheets that can be used with Tomcat and are intended to couple EAD with "dynamic navigation of hierarchies using METS..." These stylesheets are specific to New York University but are available for customization by other institutions. Contact information is available to the developers for permission and questions. These stylesheets include specific encoding instructions within them to provide a direct connection between encoding choices and the application of display elements. The stylesheet suite represented here provides both xslt and css stylesheets available for adaptation.

*University of Minnesota*

<http://wiki.lib.umn.edu/Staff/FindingAidsInEAD>

Adaptations from EAD Cookbook Version 1.0 stylesheets are available for further adoption. One stylesheet requires the use of a cascading stylesheet as well as the XSL document. These stylesheets provide little to no instruction or description of their functionality either within or accompanying the files.

## **Discovery Tools**

Discovery tools focus on open source or freely-available search and retrieval tools developed and adopted by EAD implementers. The ability to leverage Encoded Archival Description metadata in an online environment has been a promise since its implementation, and remains one of the least well-developed aspects of EAD. In reviewing the discovery tools available to the EAD community, it should be noted that many of are based upon just a few

different technologies. The tools reviewed below include those kits that are comprehensive rather than individual parts that are necessary to be combined with the others.

*Cheshire II and Cheshire 3*

<http://cheshire.lib.berkeley.edu/>

Cheshire is an XML search engine supported by SourceForge.net with all the required software packages included. Cheshire 3 is currently under development but available and includes complete documentation (<http://cheshire3.sourceforge.net/>). Cheshire was developed ten years ago through a collaboration between the University of California, Berkeley and the University of Liverpool. The tool includes installation and configuration decisions as well as the building of a database.

*Cocoon*

<http://cocoon.apache.org/>

Cocoon is a web development framework and constitutes a servlet which can be used in conjunction with other open source software, such as Lucene (<http://lucene.apache.org/java/docs/>). Shepherd details the decisions made by the Five Colleges Archives and Manuscript Collections project to use a combination of Cocoon and Lucene to provide search and retrieval to their EAD finding aids (<http://asteria.fivecolleges.edu/index.html>).<sup>11</sup> Both of these products are from the Apache Software Foundation, and while the Five Colleges Archives and Manuscripts Collections does not provide these tools in combination for others to download, the article includes a section for Consideration for Other EAD implementers which provide guidelines and insight on implementation by aspect pertinent and important questions.

*dlxs search engine (Bentley Historical Library Finding Aids)*

<http://dlxs.org/products/inde.html>

dlxs is a open source middleware and when used in conjunction with XPAT software provides search and retrieval functionality. XPAT can either be licensed for a fee or XPAT Lite is freely available but does have a datasize limit. This toolkit includes documentation for the implementation. It should be noted that XPAT Lite does not include support for dlxs directly.

*eXtensible Text Framework*

<http://www.cdlib.org/inside/projects/xtf/>

Created by the California Digital Library, this is a flexible indexing and query tool that can be downloaded from SourceForge.net. It is an architecture based on a servlet container (such as TomCat from Apache). It includes extensive documentation both in downloading and installing and also in programming or configuring the file for individual implementation needs.

*PLEADE*

<http://www.pleade.org/>

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<sup>11</sup> Kelcy Shepherd, "Five Colleges Archives & Manuscript Collections: Building a Dynamic, Searchable Web Site of EAD Finding Aids" in *NEA Newsletter*, v. 31, 2004, pp. 28-30.

PLEADE is open source software using a java virtual machine (<http://java.sun.com/j2se/1.4.2/download.html>) and a servlet engine such as Apache Jakarta TomCat. PLEADE is an SDX application that provides downloads for multiple platforms. Instructions are available on how to download all three parts (Java virtual machine, servlet engine, and SDX components). This is a highly configurable and multilingual web publication framework for EAD documents. It is described as a layer on top of SDX, it takes control of tasks such as indexing, organizing and displaying EAD documents. It also supports the use of thesauri for searching. Searching includes basic full-text or advanced options; advanced options are defined by the installation, including searchable fields. The administrator is provided with various options such as choosing archival levels, hierarchical levels, or EAD elements. Examples are available for review at: <http://daf.archivesdefrance.culture.gouv.fr/sdx/pl/>

## Knowledge Tools

Knowledge tools refer to best practice guidelines or encoding assistance documentation that are made available via the Web. Best practice guidelines provide insight to repository or consortial interpretations of the standard. One perception common among new implementers of EAD is that there is a "right" way to do encoding. By the sheer number of best practice guidelines and interpretations available, it is clear that this perception is misguided. However, those entering the EAD community for the first time may not fully understand the flexible and interpretive nature of the standard. Reviewing best practice guidelines is one way to learn about this quality, but it seldom decreases the anxiety faced by new implementers. At some point, decisions need to be made in order to provide consistent and cohesive EAD documents.

Best practice guidelines also provide a window into the general encoding milieu of the standard across interpretations. In 2002, Frost used nine best practice guidelines as a basis for comparison.<sup>12</sup> She was investigating the similarities and differences in encoding practices discussed in guidelines in order to uncover EAD implementation across multiple repositories. Her conclusions include a confirmation that according to encoding guidelines there is consistency to EAD encoding across multiple interpretations, particularly for high-level descriptive data. This is particularly encouraging for discovery implications, union database solutions and the like, as consistency at that level will assist in uniform retrieval.

Frost also discovered that current encoding practices did not meet minimum standards for international guidelines.<sup>13</sup> This conclusion highlights one of the most perplexing problems facing new EAD implementers. While EAD best practice guidelines generally focus on the inclusion and interpretation of particular elements, descriptive content is rarely attended to. This can be seen by the very streamlined approach to encoding guidelines that the Research Libraries Group has taken with their award-winning Best Practice Guidelines *RLG Best Practice Guidelines for Encoded Archival Description*.<sup>14</sup> These guidelines include brief introductory information on topics such as attributes and values, date normalization, and digital objects, and some XML-specific guidelines for system entities, punctuation and white space, and character encoding. Following this introductory text are a series of tables that provide information about specific elements and attributes, their requirement status,

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<sup>12</sup> Hannah C. Frost, "Guidelines Counseling: A Comparative Analysis and Evaluation of EAD Implementation Guidelines" in *Journal of Archival Organization*, v. 1 (2002), pp. 73-86.

<sup>13</sup> Frost, p. 83.

<sup>14</sup> RLG EAD Advisory Group, *RLG Best Practice Guidelines for Encoded Archival Description*, August 2002, <http://>

comments and application notes, and various encoding analogs. Nowhere in these guidelines is there a concentration on descriptive information structures. They are solely encoding guidelines. This can be contrasted with the Library of Congress's EAD practices (Version 2002).<sup>15</sup> These guidelines provide appropriate information about encoding and XML syntactic requirements but also include content suggestions and are over 200 pages long in print form. This comprehensive approach to guidelines endorses control over the encoding and description at the Library of Congress. Other guidelines provide a more middle-of-the-road approach to encoding and content. For instance, New York University provide encoding guidelines for the <eadheader> and <archdesc> portions of the EAD document, but also provides a separate "Dates Formatting Guide" on the appropriate input for dates both as normalized values as well as text within the <unitdate> element.<sup>16</sup>

It should be noted that Frost was analyzing these guidelines prior to the 2004 publication of *Describing Archives: a Content Standard* (DACS). It will be interesting to see what kind of impact this new content standard will have on the shape of best practice guidelines. For instance, the NCEAD *Best Practice Guidelines EAD 2002* has recently been revised to include references to appropriate DACS rules and page numbers in order to align content and encoding.<sup>17</sup> It is assumed that other guidelines will also be including or referencing DACS content rules.

Best practice guidelines are a reflection of interpretation of the standard. This survey provides a list of those available online for review by implementers. Given the changes in EAD, the appearance of more guidelines, and the appearance of DACS, it seems appropriate to revisit Frost's initial study and conduct a content analysis to revisit some of her findings. That kind of detailed comparison of the guidelines is beyond the scope of this survey but would enhance our understanding of EAD and its diffusion.

### Best Practice Guidelines

- Archives Hub  
(includes a variety of guidelines on various aspects of description and encoding)  
Data Creation Guidelines: <http://www.archiveshub.ac.uk/arch/dcg0505.pdf>  
Access Points Creation Guidelines: <http://www.archiveshub.ac.uk/arch/arch/apg.pdf>  
Mandatory Fields: <http://www.archiveshub.ac.uk/arch/formats.shtml>  
Access points: <http://www.archiveshub.ac.uk/arch/access.shtml>  
Place names: <http://www.archiveshub.ac.uk/arch/geoghelp.shtml>  
Multi-level descriptions: <http://www.archiveshub.ac.uk/arch/dsc.shtml>
- Bentley Library EAD 2002 Tag Set  
<http://www.umich.edu/~bhl/EAD/bhltags.htm>
- EAD 2002 Cookbook  
<http://www.archivists.org/saagroups/ead/ead2002cookbookhelp.html>
- Harvard EAD Guidelines

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<sup>15</sup> Library of Congress, *Recommended Best Practices for Encoded Archival Description Finding Aids at the Library of Congress (EAD Version 2002)*, Draft, December 9, 2004, <http://www.loc.gov/ead/practices/lcp2002.html>, viewed on 26 July 2005.

<sup>16</sup> New York University, EAD Production Guide, <http://library.nyu.edu/findingaids/ead/>, viewed 9 August 2005.

<sup>17</sup> Katherine M. Wisser, *NCEAD Best Practice Guidelines EAD 2002*, 2<sup>nd</sup> edition, <http://www.ncecho.org/ncead/documents/ead2002/bestpracticeguidelines2.htm>, viewed on 9 August 2005.

<http://hul.harvard.edu/ois/systems/oasis/eadguide.html>

- Library of Congress Recommended Best Practices for Encoded Archival Description Finding Aids at the Library of Congress (EAD Version 2002)  
<http://www.loc.gov/ead/practices/lcp2002.htm>
- NCEAD Best Practice Guidelines EAD 2002, 2<sup>nd</sup> Edition  
<http://www.ncecho.org/ncead/documents/2002/bestpracticeguidelines2.htm>
- New York University  
EAD eadheader guide:  
[http://library.nyu.edu/findingaids/ead/docs/guides/header\\_b06.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/header_b06.pdf)  
EAD archdesc guide:  
[http://library.nyu.edu/findingaids/ead/docs/guides/archdesc\\_b06.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/archdesc_b06.pdf)  
Dates formatting guide:  
[http://library.nyu.edu/findingaids/ead/docs/guides/dates\\_b01a.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/dates_b01a.pdf)
- EAD Training Manual for NGSW Project  
<http://www.mus.edu/user/robin179/VVL/EADTraining.htm>
- Northwest Digital Archives  
<http://nwda.wsulibs.wsu.edu/temp/bestpract.pdf>
- Online Archive of California  
<http://www.cdlib.org/inside/diglib/guidelines/bpgead/>
- RLG Best Practice Guidelines for Encoded Archival Description  
<http://www.rlg.org/en/pdfs/bpg.pdf>
- Texas Archival Resources Online EAD 2002 Tagging Guidelines  
<http://www.lib.utexas.edu/taro/admin/howdoi/2002tagguidelines.html>
- University of Minnesota  
<http://staff.lib.umn.edu/asc/documents/bestpracticesv2.doc>
- Virginia Heritage Project Best-Practice Guidelines for Encoded Archival Description Revised March 2004  
<http://www.lib.virginia.edu/small/vhp/download/VHBPG2004.pdf>

## **EAD Tools User Survey**

The EAD Tools User survey (see Appendix A) was conducted via the web from May 23, 2005 to June 15, 2005. A total of 70 responses were submitted from a variety of institutions.

Responses came primarily from institutions within the United States, but four other countries were represented: the United Kingdom, New Zealand, Australia, and Sweden. 26

states were represented from the United States: California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Virginia, Washington, and Wisconsin, as well as the District of Columbia.

The sizes of the institutions also provided a wide range of survey respondents. Of the 70 institutions, 43% (30) were institutions reporting less than five FTE employees. The next level, 5-9 FTE, 20% (14); 10-14, 15-19 and 20-24 comprised 13% (3 in each category) and over 25 FTE comprised 24% (17). To understand this kind of statistical breakdown, it is necessary to compare this to overall statistics for FTE in archival institutions. While comparative statistics for archival institutions are not available, it is clear that institutions of small or relatively small size are engaged in the creation or EAD finding aids and are invested in the tools available, since two-thirds of the respondents to this survey are from institutions that have less than ten FTE employees. While response to the survey isn't a clear marker of the number of institutions participating or engaged in EAD, it does provide some indication about the community.

In looking at the authoring tools used by respondents of the survey, over half (59%, 41) responded that they had used the EAD Cookbook either in full or as a starting point. For those institutions with less than five FTE employees, almost two-thirds (63%, 19) indicated the use of the cookbook. It is interesting that of the 11 institutions with less than five FTE employees that responded negatively to the question of the use of the cookbook did not indicate another tool. For these six institutions, it appears that they are not using anything presently. In fact, in three of those surveys, the needs indicated were: "All of the above," "Stylesheets that work and have built in tools for images and thumbnails," and "Templates best practice guidelines." The other five that indicated they were not using the cookbook are either part of a consortium, such as the Online Archive of California or the Guide to Australian Literary Manuscripts Project, which have developed and provide tools for their consortium members, use XMetal software, or have benefited from tools provided by Daniel Pitti at his Rare Book School course. Two institutions indicated that they developed their own stylesheets and one developed a system using an Excel spreadsheet as a markup template and XMLSpy software for editing. For the next level up, institutions reporting 5-9 FTE employees, the use of the Cookbook is a closer division (8 (57%) reported yes, 6 (43%) reported no). This is closer to the overall reporting of cookbook use, which was 59% yes and 41% no. Not surprisingly, the large institutions (over 25 FTE) were a slight deviation from this trend, in that only 47% reported using the cookbook and 53% reported not using it. This is inline with the current thinking that larger institutions have resources of their own to solve technological and descriptive problems with EAD that the Cookbook seeks to assist in.

Several different consortia were represented in the survey: the Center for Jewish History, Ediffah, Five College Archives & Manuscript Collections, Guide to Australian Literary Manuscripts Project, Harvard/OASIS, North Carolina EAD (NCEAD), the Northwest Digital Archives (NWDA), the Online Archive of California (OAC), the Philadelphia Area Consortium of Special Collections (PACSCL), State University System of Florida, Texas Archival Resources Online (TARO), and The Archives Hub.

It is interesting to note that of the 26 responses that indicated that they were part of a consortium, 50% also indicated that they used the Cookbook. There does not seem to be a direct correlation between belonging to a consortium and the need or use of external online tools such as the Cookbook for creating an encoding protocol.



While the intention of this survey was to provide information about the identification of various tools available to the wider EAD community, only a few tools were actually named aside from the EAD Cookbook and materials provided by Daniel Pitti's Rare Book School course. Another intention was to provide anecdotal evidence of the use of tools and stylesheets. A selection of comments is provided below, separated into comments regarding the Cookbook specifically, XML-authoring program experiences, and then miscellaneous comments. It should be noted that many of the anecdotal comments focused on different XML authoring programs rather than tools developed by the community to assist in EAD-encoding.

### **Cookbook**

The majority of the comments regarding the EAD *Cookbook* were positive and provide ample testimony to the effectiveness of this toolkit for a wide variety of institutions. Comments included the use of templates and stylesheets. As one institution noted:

the EAD Cookbook is very useful. You can follow the instructions step by step to make the XML tags work and to get all the files in the right place on your software. I had some difficulties with that process, but the Cookbook answered all my questions. Also the author is very helpful with email questions if you have a problem. The EAD stylesheets provide a variety of ways in displaying your xml. The dsc is split off as a separate sheet so that you can mix and match styles.

Other institutions applauded the *Cookbook* but also noted that modifications were necessary such as, "Chris' work has made [NoteTab] a very valuable tool for small operations to make EAD possible....with some modifications sample stylesheets available with the Cookbook have served us well" and "Began with the first version of the Cookbook, modified the stylesheets for local use, and continue to modify as needed. Created a template in NoteTab to automatically encode finding aids. When Chris Prom's templates for NoteTab were made available, modified my own template to incorporate some of his ideas." Other institutions noted that they used the *Cookbook* as a starting point from which to make decisions about encoding protocols and tools, "We used the EAD Cookbook to get an idea of whether or not it would be helpful for our institution. We decided that it would not be a viable solution for us, but found it useful as a starting point for familiarizing ourselves with EAD" and "templates in the Cookbooks, both for EAD and the stylesheets were our starting point. Very helpful..."

Only a few comments were critical about the *Cookbook*, including "EAD Cookbook stylesheets, fairly cumbersome to modify" and "we adapted Fox's print output stylesheet for our needs and style. It was not easy." When compared with the comment, "generally hacks of the Cookbook have been fine for us," it seems clear that institutions that have some experience (note the word "hacks") in technology had positive experiences with the *Cookbook*, and those with less experience or new to the technologies may have more problems. It was noted, though, that there was developer support (see above) that was appreciated by the EAD community adapting the tool.

### **XML Authoring Programs**

Authoring programs mentioned in the EAD Users Tool Survey and the EAD Sites Annotated web site, as well as others mentioned on the EAD listserv include the following:

<Oxygen/> (<http://www.oxygenxml.com/>)

jEdit (<http://www.jedit.org/>)

NoteTab (<http://www.fookes.com/>)

XMetaL (<http://www.xmetal.com/>)

XMLSpy Home Edition 2004 ([http://www.altova.com/download\\_spy\\_home.html](http://www.altova.com/download_spy_home.html))

### Software Applications Use\*

| Software      | # of institutions<br>(institutions can be using<br>more than one kind of<br>software) | Comments<br>(from EAD Tools Survey)   |
|---------------|---|---|
| NoteTab       | 7   | "Having used two other editors before using this one (NoteTab), I must state that NoteTab is by far the easiest to learn, train with, and least expensive."                                       |
| <oxygen/>     | 0   | "Oxygen is simple to use and brings the user closer to the markup."   |
| WordPerfect   | 2   |   |
| XMetaL        | 17  | "Setting up Preview in XMetaL was very time-consuming and difficult."   |
| XMLSpy        | 3   | "Altova's XMLSpy home edition is free, but has a lot of bugs which caused it to crash frequently. I work for a city and have no budget to purchase software so this seemed to be my only option." |
| Author/Editor | 10  | no comments   |
| Other         | 2   | (XMLMind, MidosaXML)  |

\*Note: The numbers represented in this chart refer to the information provided on the EAD Sites Annotated web site (<http://www.archivists.org/saagroups/ead/sitesann-index.html>), where 64 institutions have provided descriptions of the EAD implementation. Due to the nature of the information presented on this website, there is no way to measure the accuracy of this information. Therefore, some comments regarding different software from the EAD Users Survey are included in the third column.

The Arts and Humanities Data Service (AHDS) has created a summary of the features of different XML editors that would be useful for individuals considering the choice of software. Note that this summary is not comprehensive (XMLSpy for instance is not featured) but does provide information about terminology used in discussing various components of editors as well as feature charts on the editors that it does review. In addition, it provides information such as developer, version, operating systems, schema languages, cost, and website information as well as whether or not the software is open source.

This review by Thijs van den Broek can be found at: <http://ahds.ac.uk/creating/information-papers/xml-editors/>.

## Needs

A question about needs stimulated many interesting responses. 30 (42%) responses noted some need. Of those 30 responses, almost one quarter (23%) mentioned stylesheets specifically as a need. Other common needs were templates and best practice guidelines. Some needs were more specific, including authoring tools for more complex areas of an EAD document, such as the <dsc>, date normalization, training modules for in-house staff training, and conversion tools. A few respondents even noted "all of the above." That indicates that some institutions responding to the tools survey are new to the standard but interested in implementation and perhaps weighed down by its required technological sophistication.

A few responses defy the tools concept noting needs such as more time to do encoding, "time to concentrate on the tools are probably 'out there'" or related activities such as creating internal documentation, personnel such as "A person dedicated to working on stylesheets, macros, and templates for encoding. We've got the day-to-day encoding practice going all right, but the translation to the web is the piece for which we don't have much support" and support, such as this comment, "It would be wonderful if the EAD Working Group would offer services for proofreading the encoding of EAD finding aids. DLG (Digital Library of Georgia) has been very helpful to me, but I'm sure that there are many people out there, including me, who could use this kind of support" or this comment "links on EAD homepage to standards such as countryencoding iso3166-1, dateencoding iso 8601, langencoding iso 639-2b, and repositoryencoding iso 15511" and "it would be nice if there were application guidelines for version 2002 available. The version 1.0 application guidelines can cause a lot of confusion, especially with linking elements which underwent significant changes in version 2002." The most unusual although most likely more pervasive than its representation in the survey respondents was the comment, "All of the above, we need to start an EAD program. Some folks in the organization though are unconvinced of EAD's staying power and thus stingy when it comes to allocating resources and time for relevant training. Is there an EAD eye-opener kit?"

It is clear that some of these needs are being met by the EAD Working Group, the EAD community, and SAA; one comment called for an EAD to MARC Converter. Just recently, SAA's Education Program hosted a web seminar on that topic, which included the provision of tools that will do that kind of work. Another asked for a "good bpg encoding checker." RLG has released their RLG Report Card (noted by other survey respondents with positive comments such as "the RLG report card is also a great tool" and "I used the EAD report card to check our inhouse EAD template for errors and missing tags.") These needs all reaffirm the need for vigilance on the part of the community to what is available as well as continuing efforts at maintaining open communication between implementers. One comment stated that, "it might be useful to have a place where EAD implementers could share templates and stylesheets they've developed. We'd be willing to share the ones we've developed or adapted if just to provide ideas to others. We would certainly use the others posted for that purpose."

## Conclusion

Institutions interested in implementing Encoded Archival Description face multiple challenges. EAD not only requires a high level of knowledge, it has many technological requirements that can be intimidating to the novice encoder. New institutions considering participating in the community are striving for experience from early implementers, tools to assist in their efforts, and guidelines to help them through the decision-making process. It

appears that the EAD community is committed to an open community that shares knowledge and expertise, but that many do not understand the complexity and potentials involved in borrowing tools, know where to go for resources, have connections with other institutions working on implementation, or partake in the communication structures extant at this time.

Specific Recommendations include:

- In 1997, Michael Fox wrote an excellent article entitled "Implementing Encoded Archival Description: An Overview of Administrative and Technical Considerations."<sup>18</sup> This article could be revisited and updated to today's standard. It was written at a time when EAD was an SGML standard and XML was still emerging. EAD is now firmly in the XML environment, and the new version includes its own administration and technical considerations that were not applicable in 1997. In addition, a revised edition of the EAD Application Guidelines would provide elementary information about the technical and structural requirements of EAD.
- A community-driven effort to create a tools portal is one likely way to address the issues of communication and provision of tools. The EAD Roundtable Help Pages is the most likely arena for this kind of solution and has been a part of the EAD Roundtable efforts since its establishment in 1999. There are several challenges to maintaining this kind of resource, though. Particularly included are issues of sustainability, currency, and active participation by the EAD community. Society representatives generously volunteer their time for a variety of roles, but most members also have jobs that have their own requirements.

This kind of effort seems beyond the scope of a Roundtable webmaster and might be better suited as a subcommittee of the Roundtable that works together to test tools and provide information about them. In addition, it would be useful for community leadership to actively endorse and encourage the sharing of tools. It should be noted that several respondents to the user survey indicated that they were willing or would be in the future to sharing the tools they had created. Caveats included the perception that individualized tools may not be useful for other repositories. The more generalized *Cookbook* provides a clear non-institution specific tool kit that many institutions have used. There may be a perception that those are the only kinds of tools that are appropriate for sharing. In addition, institutions may be willing to provide tools, but because EAD is a dynamic process, tools are constantly under revision in institutions as problems arise. As well, clear communication about how the tools were developed, the technological infrastructure or environment required, and encoding protocols supported by the tools are necessary components to sharing. It may be useful to provide a detailed submission guideline for tools in this tools repository to ensure that all the appropriate information is gathered. The internet provides much promise for communication, but also is full of landmines in terms of data maintenance and currency. Without vigilance on the part of the repository management, it could become a graveyard of outdated or legacy practices rather than an arena for sharing and assisting that it was intended to be.

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<sup>18</sup> Michael Fox, "Implementing Encoded Archival Description: An Overview of Administrative and Technical Considerations" in *American Archivist*, 60, (1997), pp. 300-343 and reprinted in *Encoded Archival Description: Context, Theory, and Case Studies*, Jackie M. Dooley, ed. (Chicago: Society of American Archivists, 1999), pp. 67-79.

- A research agenda could be endorsed by the community leadership to address the anxiety of user effectiveness of EAD. This will help in the overall endorsement of the standard. Within the past few years there have been some efforts at alleviating this problem.<sup>19</sup> However, more research needs to include users directly in the information discovery process in order to fully understand the implications of EAD implementation. In addition, research topics on discovery tools, indexing problems, and relevancy will provide a wide framework from which to interpret and enhance EAD for the archival user.

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<sup>19</sup> See Elizabeth Yakel, "Encoded Archival Description: Are Finding Aids Boundary Spanners or Barriers for Users?" in *Journal of Archival Organization*, 2, (2004), pp. 63-77.

## Appendix A

### Alphabetical List of Tools by Name and/or institution

#### *Agile Image Movers*

##### *EAD Conversion*

<http://www.agileimage.com/html/ead/>

*EAD Conversion* is a freely available proof of concept Java Web Start application that converts textual documents to EAD files. "This program reads two styles of input describing both the logical structure of a collection and the distribution of the collection in various containers and generates an EAD xml document." It is capable of reading spreadsheet formats or will convert valid EAD xml documents and re-generate the container lists using xml parent-id relationships. The tool is in the development stages, and it is noted that "You may use *Ead Conversion* freely. However, since this is still a proof of concept application, *it can and will change without notice*. If you would like a snapshot of a particular version, please contact me. Any comments, bugs, observations, or wish list requests are welcome." Documentation regarding the various input structures is provided but there is no discussion of the Encoded Archival Description output, links to the EAD Application Guidelines for Version 1.0 are provided instead. It does not provide areas for customization, although it is clear that as this application is further developed, the creator(s) will be open to suggestions and issues and may be able to provide customizations that way.

#### *AMIGOS*

<http://www.amigos.org/training/walker/ead/index.html>

This tool is based on XMLSpy software, and can be used in either the purchased or free versions. It includes installation instructions, including information about file management specifications established to ensure that parsing and validating functions work properly. Other than that, there are no directions included with the AMIGO EAD training kit. It appears that the tool is created to help learn EAD rather than as a customized version of EAD creation.

#### *Archives Hub*

<http://www.archiveshub.ac.uk/arch/dc.shtml>

The Archives Hub is a union database for archival description written in EAD. In order to assist contributors to the Archives Hub, they have created authoring tools. These consist of a web form (<http://www.archiveshub.ac.uk/eadform2002.html>) that provides boxes to complete and then "generates" EAD encoding in a separate window. This EAD can then be pasted into an xml editor for further enhancements. Note that while in the web form, no EAD tags are visible. In addition to the web form, the Archives Hub provides tools for the creation of EAD records in xml editors. These include Dreamweaver MX, XMLSpy, oXygen, and XMetaL. Each of these

includes not only templates and/or macros, but some instructions on the use of that software for EAD creation.

The Archives Hub provides a stylesheet for previewing EAD finding aids that can be adapted for institutional use. This stylesheet is intended to mirror how a finding aid would look in the Archives Hub service, and provides information for participants to contact the Archives Hub if there are issues with the way the stylesheet renders individual finding aids. That will expedite the inclusion of those finding aids in the Archives Hub. It does not provide assistance for the adoption of this stylesheet outside of Archives Hub, although the stylesheet does provide some directions and labeling within it.

#### Best Practice Guidelines

(Archives Hub includes a variety of guidelines on various aspects of description and encoding)

Data Creation Guidelines: <http://www.archiveshub.ac.uk/arch/dcg0505.pdf>

Access Points Creation Guidelines: <http://www.archiveshub.ac.uk/arch/apg.pdf>

Mandatory Fields: <http://www.archiveshub.ac.uk/arch/formats.shtml>

Access points: <http://www.archiveshub.ac.uk/arch/access.shtml>

Place names: <http://www.archiveshub.ac.uk/arch/geoghelp.shtml>

Multi-level descriptions: <http://www.archiveshub.ac.uk/arch/dsc.shtml>

#### *Cheshire II and Cheshire 3*

<http://cheshire.lib.berkeley.edu/>

Cheshire is an XML search engine supported by SourceForge.net with all the required software packages included. Cheshire 3 is currently under development but available and includes complete documentation (<http://cheshire3.sourceforge.net/>). Cheshire was developed ten years ago through a collaboration between the University of California, Berkeley and the University of Liverpool. The tool includes installation and configuration decisions as well as the building of a database.

#### *Cocoon*

<http://cocoon.apache.org/>

Cocoon is a web development framework and constitutes a servlet which can be used in conjunction with other open source software, such as Lucene (<http://lucene.apache.org/java/docs/>). Both of these products are from the Apache Software Foundation.

#### *dlxs search engine (Bentley Historical Library Finding Aids)*

<http://dlxs.org/products/inde.html>

dlxs is a open source middleware and when used in conjunction with XPAT software provides search and retrieval functionality. XPAT can either be licensed for a fee or XPAT Lite is freely available but does have a datasize limit. This toolkit includes documentation for the implementation. It should be noted that XPAT Lite does not include support for dlxs directly.

*EAD and Databases (Perl and ADO on MSWindows)*

<http://sunsite3.berkeley.edu/ead/tools/eaddb/>

Developed by Alvin Pollock of the Digital Publishing Group at the University of California – Berkeley, this set of tools combines the use of relational databases and EAD using perl programming language and the Microsoft ActiveX Data Objects (available for free download at <http://msdn.microsoft.com/library/default.asp?url=/downloads/list/dataaccess.asp>). Instructions and links are included for the various components required for this toolkit, including Perl 5.005 or later, MDAC 2.6 or later, and an eaddb.zip package which includes an XML parser and the necessary EAD files. These instructions include explicit paths for installation to assist in their use. The sample databases included in the kit are Microsoft Access databases, which carries with it field-character limitations. Suggestions to alleviate that problem include conversion to an SQL server. There are also some concerns about indexed and non-indexed fields in the initial Microsoft application. The documentation for this toolkit is relatively complete; it includes information about the underlying architecture and the conceptual framework that will help in the application of the tools. The toolkit comes with example programs, including a sample database, SGML file, import and export scripts, and a page of commentary. It also includes incorporated parsers and provides many options for the user to ensure that valid xml and EAD instances are imported to the database.

Accompanying documentation on the Conversion of Microsoft® Access Databases into EAD-encoded Finding Aids developed by Gabriela A. Montoya, Electronic Text Unit, UC Berkeley Library, provides step by step directions on converting from Access to EAD (based upon Version 1.0). These instructions can be found at:

<http://sunsite.berkeley.edu/FindingAids/uc-ead/tools/database/>

*EAD Cookbook 2002*

<http://www.iath.virginia.edu/ead/ead2002cookbookhelp.html>

First appearing in 2000, the Cookbook was a direct response to the archival community's need for assistance in implementing EAD. By all accounts, it has been the most widely adopted tool in the EAD community (see User survey below). It strives for platform independence by providing a variety of implementations based upon the software implemented by institutions. It includes modules for XMetaL, <oXygen/>, and NoteTab. Instructions are included for installation and customization of the tools.

The EAD 2002 *Cookbook* provides a full range of stylesheets for adaptation by institutions. Included are nineteen XSL stylesheets for use with EAD finding aids. These work in conjunction with the encoding protocol outlined in Section 3 of the Cookbook. The developer, Michael Fox, assumes that the use of these stylesheets will uncover "bugs or unwanted side-effects" and encourages users to contact him with any information or questions. Modifications and customizations to the stylesheets are encouraged for applicability in individual situations. Instructions are included within stylesheets for users.



There is an implicit instruction in this *Cookbook* that it is created for adoption by a wide variety of institutions. It was not generated with a particular institution, consortium, or application of EAD in mind, and that may attest to its architecture, conscientious documentation, and also its popularity as a tool in the user survey. By all accounts the EAD cookbook is achieving its goals. More detailed examination such as Prom's usability study might provide feedback on potential expansion or improvements to the cookbook, but it is already succeeding in helping institutions with the initial implementation of EAD. Templates, stylesheets, and accompanying encoding guidelines make this one of the most complete toolkits available to the EAD community.

Best Practice Guidelines

<http://www.archivists.org/saagroups/ead/ead2002cookbookhelp.html>

#### *eXtensible Text Framework*

<http://www.cdlib.org/inside/projects/xtf/>

Created by the California Digital Library, this is a flexible indexing and query tool that can be downloaded from SourceForge.net. It is an architecture based on a servlet container (such as TomCat from Apache). It includes extensive documentation both in downloading and installing and also in programming or configuring the file for individual implementation needs.

#### *Harvard University*

Best Practice Guidelines

EAD Guidelines: <http://hul.harvard.edu/ois/systems/oasis/eadguide.html>

#### *Library of Congress*

*EAD 1.0 to 2002 Conversion Toolkit*

[http://lcweb2.loc.gov/music/eadmusic/eadconv12/ead2002\\_r.htm](http://lcweb2.loc.gov/music/eadmusic/eadconv12/ead2002_r.htm)

The Conversion Toolkit is a "bare bones" open source conversion toolkit for EAD 1.0 to EAD 2002 for Windows 2000 and XP environments only. It uses an xsl stylesheet, includes installation instructions for the tool, James Clark's SP, Michael Kay's Saxon and includes a detailed listing of file required for the conversion process. It also includes conversions from SGML to XML, Version 1.0 to EAD 2002 as well as XML to HTML. It allows for batch runs to be made on these conversions. It includes FAQs and its creator, Mike Ferrando, often posts updates to the EAD listserv.

Best Practice Guidelines

*Library of Congress Recommended Best Practices for Encoded Archival Description Finding Aids at the Library of Congress (EAD Version 2002):*

<http://www.loc.gov/ead/practices/lcp2002.html>

### *National Gallery of the Spoken Word*

Best Practice Guidelines

*EAD Training Manual for NGSW Project:*

<http://www.mus.edu/user/robin179/VVL/EADTraining.htm>

### *NCEAD*

[http://www.ncecho.org/ncead/tools/tools\\_home.htm](http://www.ncecho.org/ncead/tools/tools_home.htm)

This toolkit is based upon the application of NoteTab software. It includes templates and libraries (bundles of macros) for the software to generate EAD instances. The web site includes instructions on the downloading of the tools, including a note about dictated file paths for appropriate application. The kit can be loaded as one, or individual parts can also be downloaded. Includes all the necessary programs for the creation of EAD instances, including a parsing function and provide contact information for toolkit development.

The NCEAD tools include five stylesheets for adoption. Three of these stylesheets work in coordination with each other, with the option for a frames or non-frames display. Within that suite, there is a customization stylesheet that allows for color and appearance of the finding aids, a general stylesheet for displaying the finding aids, and a frames or non-frames stylesheet that works with the eadcust.xsl and eadshared.xsl. In addition, a stylesheet is available for the transformation to pdf format, eadfo.xsl. While no detailed instructions exist within the stylesheets themselves for customization or modification, comments providing information about different functions are embedded. NCEAD provides contact information to the NC ECHO metadata coordinator, who provides support for the tools.

Best Practice Guidelines

*NCEAD Best Practice Guidelines EAD 2002, 2<sup>nd</sup> Edition:*

<http://www.ncecho.org/ncead/documents/2002/bestpracticeguidelines2.htm>

### *New York University*

<http://library.nyu.edu/findingaids/ead/>

This toolkit is based on NoteTab as the xml editor and uses templates files. Template files are constructed according to local guidelines, which are also in conformance with RLG's *Best Practice Guidelines* and Michael Fox's *EAD Cookbook*. Michael Kay's Saxon software is used for parsing, and is included on the tools website. The foundation of these tools is those developed through the *EAD Cookbook*, but some adjustments have been made and various interpretations are available for review. See below in publishing tools for a discussion of their multiple stylesheets available for download.

The New York University tools include XSLT Stylesheets A page lists a variety of stylesheets developed for multiple applications within New York University. It includes choices in banners and background colors and some differences in the placement of <frontmatter> elements. Included are a series a stylesheets that can be used with Tomcat and are intended to couple EAD with "dynamic navigation of

hierarchies using METS..." These stylesheets are specific to New York University but are available for customization by other institutions. Contact information is available to the developers for permission and questions. These stylesheets include specific encoding instructions within them to provide a direct connection between encoding choices and the application of display elements. The stylesheet suite represented here provides both xslt and css stylesheets available for adaptation.

Best Practice Guidelines

EAD eadheader guide:

[http://library.nyu.edu/findingaids/ead/docs/guides/header\\_b06.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/header_b06.pdf)

EAD archdesc guide:

[http://library.nyu.edu/findingaids/ead/docs/guides/archdesc\\_b06.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/archdesc_b06.pdf)

Dates formatting guide:

[http://library.nyu.edu/findingaids/ead/docs/guides/dates\\_b01a.pdf](http://library.nyu.edu/findingaids/ead/docs/guides/dates_b01a.pdf)

### *Northwest Digital Archives*

<http://nwda.wsulibs.wsu.edu/NWDABestPracticesfinal103.htm>

This toolkit is an XMetaL based toolkit with installation instructions for that software. It also provides some guidance on how to use XMetaL to encode EAD finding aids. The NWDA Template.xml is constructed according to the NWDA Encoding Guidelines developed by a Best Practices Working Group (see Knowledge Tools below), but they provide some directions on customization. While they note that customizations should remain compliant with NWDA, the tools are available for customization outside of that consortium. NWDA XML Template documents and the accompanying guidelines provide the framework upon which the tools have been built to allow for more radical customizations if that is what is desired. They provide some specific directions on some XMetaL customizations as well, such as prompts and element groupings. This toolkit is developed for a union database, with the tools focusing primarily on assisting the document creation, although an ead.css file accompanies the tools. Contact information for the Northwest Digital Archives is available, but it is unclear how accessible they would be to non-consortial members.

The Northwest Digital Archives also provides a toolkit for converting EAD 2002 to the MarcXML format (<http://staff.washington.edu/carlsonm/>). Conversion to the MARC communications format requires a further MARC conversion tool such as MARCEdit available here: <http://oregonstate.edu/~reaset/marcedit/html/>.

Best Practice Guidelines

<http://nwda.wsulibs.wsu.edu/temp/bestpract.pdf>

### *Old Dominion University*

<http://libstaff.lib.odu.edu/sgml/forms/ead/eadgenerator/>

The EAD Generator is an experimental tar file that includes the web forms and scripts that are used to generate EAD SGML on a Unix server. Directions on downloading and unpacking the tar file are available and a README file is part of the package which provides further instructions. Note that the EAD Generator requires CGI.pm, available for free at <http://stein.cshl.org/WWW/software/CGI/>, in order to

operate properly. Although the tool itself is based on an out-dated version of EAD, there are instructions on customizing the tools that may allow for adaptation to EAD 2002. The instructions include some necessary customizations to implement/use by institutions, including title page and header entities that should be customized. The generator provides options for four different container lists: folder listing, series and folder listing, series, subseries and folder listings, or manual editing which allows you to enter the container listing using an XML editor. The developer also provides contact information for assistance.

#### *Online Archives of California*

<http://oactools.cdlib.org/toolkit/>

The OAC Toolkit was created for institutions participating in the Online Archive of California to "assist in the creation, editing, manipulation, proofing and viewing their EAD-encoded finding aids." The toolkit includes installation instructions with layers of zipped files. The Online EAD Web Templates are constructed for various OAC institutions, but they also provide a version of the template itself for downloading and examples to help in the construction of a customized template. They note that the "The cgi program itself, with several sample templates, is available for download. Unfortunately, there currently is no documentation on the template syntax and creating your own templates. For now you should use the numerous examples to guide you." The tools include a Help document for the templates which focuses on input guidelines more so than template functionality (<http://oactools.cdlib.org/templates/help>). These tools are developed for the Windows 95 environment and will not work in a Windows NT environment, but instructions on how to work around that problem are provided. The tools include parsers and other tools included in the kit to automate such functions as conversion from EAD Beta to Version 1, a parser package, unitdate encoder (recognizes date information in EAD-encoded container lists and marks them as <unitdate>), persname encoder (recognizes inverted personal names in EAD-encoded container list <unittitle> elements and encodes them with <persname>). Some restrictions to this tool are outlined in an accompanying README.txt file), and container list tabularizer that overlays tabular markup onto non-tabular container lists. Each of these individual tools comes with an accompanying README.txt document that provides further information about the tool. These tools are developed for EAD Version 1.0; there do not appear to be accompanying EAD 2002 tools available at this time.

Best Practice Guidelines

<http://www.cdlib.org/inside/diglib/guidelines/bpgead/>

#### *PLEADE*

<http://www.pleade.org/>

PLEADE is open source software using a java virtual machine (<http://java.sun.com/j2se/1.4.2/download.html>) and a servlet engine such as Apache Jakarta TomCat. PLEADE is an SDX application that provides downloads for multiple platforms. Instructions are available on how to download all three parts (Java virtual machine, servlet engine, and SDX components). This is a highly

configurable and multilingual web publication framework for EAD documents. It is described as a layer on top of SDX, it takes control of tasks such as indexing, organizing and displaying EAD documents. It also supports the use of thesauri for searching. Searching includes basic full-text or advanced options; advanced options are defined by the installation, including searchable fields. The administrator is provided with various options such as choosing archival levels, hierarchical levels, or EAD elements. Examples are available for review at:  
<http://daf.archivesdefrance.culture.gouv.fr/sdx/pl/>

#### *Research Libraries Group*

##### *EAD Report Card*

[http://www.rlg.org/en/page.php?Page\\_ID=20513](http://www.rlg.org/en/page.php?Page_ID=20513)

The RLG EAD Report Card is a web application used to check the quality of encoding in EAD documents. It supplements the RLG Best Practice Guidelines for Encoded Archival Description (see Knowledge tools below) and allows users to compare their encoded documents against the best practices outlined in that document. It flags discrepancies and cites relevant guidelines in order to improve the encoding consistency. Plans for this tool include making the EAD Report Card code available to allow users to download and run it on their desktop to improve checkup speed. In addition, as an open source tool, this will allow customization to other best practices. The Report Card itself currently allows two different levels of checking: you may choose to check Mandatory (and MA) BPGs only or against the entire BPG.

##### *Best Practice Guidelines*

*RLG Best Practice Guidelines for Encoded Archival Description:*

<http://www.rlg.org/en/pdfs/bpg.pdf>

#### *Texas Archival Resources Online*

##### *Best Practice Guidelines*

*EAD 2002 Tagging Guidelines:*

<http://www.lib.utexas.edu/taro/admin/howdoi/2002tagguidelines.html>

#### *University of Michigan*

##### *Best Practice Guidelines*

*Bentley Library EAD 2002 Tag Set:* <http://www.umich.edu/~bhl/EAD/bhltags.htm>

#### *University of Minnesota*

<http://wiki.lib.umn.edu/Staff/FindingAidsInEAD>

Tools developed by the University of Minnesota are complementary to the EAD *Cookbook* 2002. These include tools that assist in converting Access databases to EAD (relying upon the UC-Berkeley instructions discussed above for <c01> level encoded finding aids and additional instructions made by the University of Minnesota

for multiple level finding aids), and an accompanying sample database with reports that may be copied for the Access to EAD conversion. Note that the reports need to be copied into existing databases that contain information to convert into EAD and need some configuring in order to make this work. In addition to these conversion tools, a minimum requirements template is available that provides skeletal encoding for the University of Minnesota. Because this template is an xml document, it does not have an individual software platform and could be used in any XML editor. The tools do provide instructions for customizing the EAD templates and fonts and colors in XMetaL.

Adaptations from EAD *Cookbook* Version 1.0 stylesheets are available for further adoption. One stylesheet requires the use of a cascading stylesheet as well as the XSL document. These stylesheets provide little to no instruction or description of their functionality either within or accompanying the files.

Best Practice Guidelines

<http://staff.lib.umn.edu/asc/documents/bestpracticesv2.doc>

#### *University of Notre Dame*

<http://classic.archives.nd.edu/ead/>

This is a web form tool to generate EAD through a series of screens. The EAD generated should be cut and paste into an XML editor. An alternative version using JavaScript is available at <http://classic.archives.nd.edu/ead/ead.htm> No documentation accompanies this tool, and there is not a link of the University of Notre Dame web site for these tools or any information about their EAD program. While this tool does not have some of the customizability that can be required for effective EAD creation, it does provide a simple, straight-forward way to create EAD with little authoring-interaction with the elements and xml syntax.

#### *Virginia Heritage Project*

<http://lib.virginia.edu/small/vhp/admin.html>

The Virginia Heritage Project tools include a clip library written for NoteTab software that can be downloaded. This clip library includes some version history and clips for encoding <dsc> elements, formatting elements, and digital archival objects. Other tools developed by the Virginia Heritage Project are not available for adaptation by non-VHP institutions. VHP does not include publishing tools because the model is a union database and EAD records are entered into the system and are rendered there.

Best Practice Guidelines

*Virginia Heritage Project Best-Practice Guidelines for Encoded Archival Description Revised March 2004:*

<http://www.lib.virginia.edu/small/vhp/download/VHBPG2004.pdf>

## Appendix B

Included below is a copy of the web survey conducted from May 23, 2005 to June 15, 2005 through the EAD community.

### EAD Tools Survey

The EAD Working Group of the [Society of American Archivists](#) is interested in evaluating the tools and stylesheets available to repositories for the implementation of Encoded Archival Description. Please take a few minutes to complete this survey to the best of your ability. If you have any questions regarding this survey, email [Kathy Wisser](#)

#### Purpose of the survey

The tools survey addresses the growing number of tools that are available via the World Wide Web for institutions interested in implementing EAD. Aside from getting a full view of the tools landscape, the survey can also provide evidence for the EAD Working Group to make recommendations for smaller institutions that are interested in implementing EAD but lack either the knowledge or the technical expertise to start from scratch. As the project description states, "the encoding of archival finding aids using EAD can often be a daunting technical challenge - especially in smaller institutions lacking adequate (or indeed, any) IT infrastructure, though this can also be problematic for larger institutions with a highly developed and sophisticated IT staff." This survey seeks to address both the description of the landscape and an evaluation of those tools on a series of variables.

#### "Tools" definition

For the purposes of this survey, the term tools is defined as any technological solution created by EAD implementers and made freely available for the EAD community for use with or without software for the creation, publication, or discovery of EAD instances. It also includes knowledge tools such as Best Practice Guidelines that are published on the web.

**Survey data will be collected until June 15th.**

**Please indicate the size of your institution/department in FTE employees:**

- <5
- 5-9
- 10-14
- 15-19
- 20-24
- >25

**Are you part of an EAD consortium (i.e., a group of institutions that are working on EAD together)?**

- yes  
 no

**If so, which one?**

**Repository location:**

City:   
State:   
Country:

**Encoding Protocols**

**Have you used tools for EAD encoding available from the web?**

- yes  
 no

**If yes, which?**

- EAD Cookbook  
 Other

**Please provide name of Other (1):**

Name of tool:   
Developer:   
URL:

**Please provide name of Other (2):**

Name of tool:   
Developer:   
URL:

If you have more than two tools to list, please include that in the description of your experience.



**Please describe your experience (200 characters maximum):**

## Stylesheets

**Have you used stylesheets available on the web?**

- yes  
 no

**If yes, which?:**

Stylesheet (1) title:   
 Developer:   
 URL:

Stylesheet (2) title:   
 Developer:   
 URL:

If you have more than two stylesheets to list, please include that in the description of your experience.

**Please describe your experience (200 characters maximum):**

**Is there anything that you currently need for your EAD program (e.g. templates, stylesheets, best practice guidelines, etc.)?**

**Have you developed tools on your own that you are willing to share by posting them on the EAD Help Pages? If so, please describe.**

**Optional: Contact information (name and email):**

Note: if there is not enough space in the above form and you would like to include more information, please email that directly to Kathy Wisser at [katherine.wisser@duke.edu](mailto:katherine.wisser@duke.edu). Anonymity will be preserved.