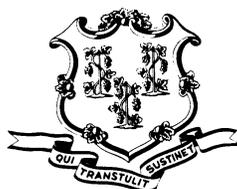


Recommendations of the State Librarian for Establishing Standards and Guidelines for the Preservation and Authentication of Electronic Documents



Connecticut State Library
Hartford, Connecticut

January 5, 2012

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Issued in accordance with Public Act 11-150, Sec. 28

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Recommendations of the State Librarian for Establishing Standards and Guidelines for the Preservation and Authentication of Electronic Documents

Introduction

On June 21, 2011, the Connecticut General Assembly passed Public Act 11-150, which was signed by Governor Malloy on July 8, 2011. Section 28 of the Act requires the State Librarian to establish standards and guidelines for the preservation and authentication of electronic documents by January 1, 2012. The standards and guidelines shall be established in consultation with the Secretary of the Office of Policy and Management; the Commissioner of the Department of Administrative Services; the Chief Information Officer of the Bureau of Enterprise Systems and Technology; the Executive Director of the Office of Legislative Management; and the Chief Court Administrator of the Judicial Branch.

See [Annex 1](#) for the text of section 28 of the Act.

Statutory Authority

This report is issued in accordance with Sec. 28 of Public Act 11-150. In accordance with Sec. 11-2 of the *General Statutes of Connecticut* (CGS), the State Librarian is the administrative officer of the Connecticut State Library and shall administer the state's principal law library (CGS Sec. 11-1a), State Archives (CGS Sec. 11-1c), State Records Management Program (CGS Sec. 11-8a), and State Documents Depository Program (CGS Sec. 11-9c). In addition, CGS Sec. 2-11, Sec. 2-13, Sec. 2-23, Sec. 2-27, Sec. 2-49, Sec. 11-4a, and Sec. 11-4c require submission of certain records to the State Library.

State Library Task Force

For over 150 years, the Connecticut State Library has collected, organized, and preserved Connecticut records. Building on this history and in response to P.A. 11-150, the State Librarian created a task force comprised of State Library professional staff from Access Services, Bibliographic Services, Collection Management, Office of the Public Records Administrator, Office of the State Librarian, and State Archives. These representatives met six times between July 22 and the end of November 2011.

The task force first discussed how the State Library currently manages and retains electronic records, including preserving state publications, state agency websites, legal material, and other public records. The task force then researched best practices for the preservation and authentication of electronic records, related statutory requirements and whether any changes to the statutes were necessary, implementation of guidelines and standards, implementation of a digital repository for permanent electronic records, and related staff and funding resources.

The Task Force submitted its recommendations on December 5, 2011 to the State Librarian.

Consultation

The State Librarian provided the Task Force's recommendations to, and consulted with, the Secretary of the Office of Policy and Management, the Commissioner of the Department of Administrative Services, the Chief Information Officer of the Bureau of Enterprise Systems and Technology, the Executive Director of the Office of Legislative Management of the Legislative Branch, and the Chief Court Administrator of the Judicial Branch.

The State Librarian solicited input from the above-listed officials, in accordance with the State Library's mission, which is "to preserve and make accessible Connecticut's history and heritage and to advance the development of library services statewide."

State Librarian Recommendations

In order to satisfy the requirements of P.A. 11-150, the State Librarian makes the following recommendations, recognizing that in some cases additional funding will be needed:

1. Standards for the Authentication and Preservation of Electronic Records

The Office of the Public Records Administrator, in consultation with the state's Chief Information Officer and the Office of Policy and Management, shall issue a Public Records Policy, which establishes standards for the authentication and preservation of electronic records.

Under the authority granted by CGS Sec. 11-8, this policy will apply to all state agencies within the Executive Branch, as well as the towns, cities, boroughs, districts, and other political subdivisions of the state. The policy shall include a statement that while it does not apply to the Legislative Branch or Judicial Branch, those branches may consider adopting any or all parts of the policy for use within their own branches.

See [Annex 2](#) for further details and an outline of the policy.

2. Recommendations for Legislative Action

Legislative Proposal #1

CGS Sec. 1-9 Alkaline Paper for Permanent Records

Modify statute to allow for the preservation of permanent records in formats other than paper.

Legislative Proposal #2

CGS Sec. 1-14 “Certified Copy” Defined

Expand to include a definition of “official record copy.”

Legislative Proposal #3

CGS Sec. 11-8 Records Management Program

Restore State Library cooperation with emergency management and preparedness authorities in carrying out an essential records program; and provide for the identification and protection of essential records.

Legislative Proposal #4

CGS Sec. 11-8a(f) RMLO Designation

Expand to include specific requirements for the employee’s position within the agency; expand the requirement to designate an RMLO to municipalities; and change the designee’s title from RMLO to RMO (Records Management Liaison Officer to Records Management Officer).

See [Annex 3](#) for recommended statutory changes in detail.

3. Uniform Electronic Legal Material Act (UELMA)

The State Librarian shall encourage the adoption of the Uniform Electronic Legal Material Act (UELMA) in Connecticut, and in particular, the expansion of the Act to include additional legal material, such as state publications, as discussed in the *Electronic Legal Material Act (With Prefatory Note and Comments)*, on page 6, lines 13 – 39.

See [Annex 4](#) for a summary of UELMA, links to the Act, and related documents.

4. Best Practices for the Production of State Publications

The State Librarian shall issue best practices for the production of state publications.

Under the authority granted by CGS Sec. 11-9c, these best practices will apply to every state office, officer, department, division, bureau, board and commission, permanent or temporary in nature, whether legislative, executive or judicial, and any subdivisions of each, including state-supported institutions of higher education as defined in CGS Sec. 11-9b(c).

See [Annex 5](#) for further details and an outline of the best practices.

5. Connecticut Electronic Records Archives (CTERA)

The State Archives shall implement, in coordination with the Bureau of Enterprise Systems and Technology, the Connecticut Electronic Records Archives (CTERA), a digital repository for preserving and making available the permanent electronic historical records of the State of Connecticut, or seek out opportunities to collaborate with the University of Connecticut or other archival institutions.

Under the authority granted by CGS Sec. 11-1c, the State Library is the archival repository for the historical records of Connecticut state government, regardless of physical format. CTERA will be designed to be scalable, in order to preserve archival documents as well as to be used by the State Library to preserve intangible state publications submitted as part of the State Documents Depository Program (CGS Sec. 11-9c) and certain legislative records submitted to the State Library (pursuant to CGS Sec. 2-11, Sec. 2-13, Sec. 2-23, Sec. 2-27, Sec. 2-49, and Sec. 11-4a).

See [Annex 6](#) for further details.

6. State Library Resources

The State Librarian will seek the necessary monetary and staff resources to carry out these recommendations, including requesting additional funding through the appropriations process.

Under the authority granted by CGS Sec. 11-2, the State Librarian is the administrative officer of the State Library and shall administer, coordinate and supervise the library. The State Library accepts thetas Force's recommendation that, at a minimum, hiring an electronic records archivist to assist with implementing and managing CTERA. The electronic records archivist is a specialized position that would assist in evaluating the administrative, fiscal, legal, and historical value of electronic records generated by state and local government agencies; evaluate current best practices concerning electronic records; and recommend electronic records policies, rules, and guidelines concerning the management of electronic records, which may include data description, capture, handling, and access methods, data warehousing, digital security, and encryption, based on sound archival and records and information management principles. Additional positions and staff training may be required to effectively administer CTERA.

The State Librarian shall also collaborate with other state agencies, such as the Department of Administrative Services, Bureau of Enterprise Systems and Technology for back-end systems hosting and/or support.

Annex 1. Public Act No. 11-150, Sec. 28

Substitute House Bill No. 6600

Public Act No. 11-150

AN ACT IMPLEMENTING THE RECOMMENDATIONS OF THE LEGISLATIVE PAPERLESS TASK FORCE AND THE TASK FORCE TO STUDY THE REDUCTION OF STATE AGENCY PAPER AND DUPLICATIVE PROCEDURES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Sec. 28. (NEW) (*Effective from passage*) Not later than January 1, 2012, the State Librarian shall, in consultation with the Secretary of the Office of Policy and Management, the Commissioner of Administrative Services, the Chief Information Officer of the Department of Information Technology, the executive director of the Joint Committee on Legislative Management and the Chief Court Administrator of the judicial branch, establish standards and guidelines for the preservation and authentication of electronic documents.

The entire text of Public Act 11-150 is available at www.cga.ct.gov/2011/ACT/PA/2011PA-00150-R00HB-06600-PA.htm.

Annex 2. Standards for the Authentication and Preservation of Electronic Records

The Office of the Public Records Administrator, in consultation with the state's Chief Information Officer, shall issue a Public Records Policy, which establishes standards for the authentication and preservation of electronic records. Under the authority granted by CGS Sec. 11-8, this policy will apply to all state agencies within the Executive Branch, as well as the towns, cities, boroughs, districts, and other political subdivisions of the state. The policy shall include a statement that while it does not apply to the Legislative Branch or Judicial Branch, those branches may consider adopting any or all parts of the policy for use within their own branches.

Proposed Outline for Public Records Policy 04: Standards for the Authentication and Preservation of Electronic Records

The policy shall include the following components:

- Date Issued
- Supersedes
- Scope
- Authority
- Definitions
- Policies
- Procedures
- Contact

The standards (listed under the Policies section above) should include the following components, at a minimum:

- Definitions
- Agency Duties and Responsibilities
- Authentication (including evidentiary value)
- Chain of Custody
- Metadata
- File Name Structure
- Encryption
- File Formats
- Watermarks
- Electronic and Digital Signatures (refer to the Connecticut Uniform Electronic Transactions Act)
- Electronic Document Management System
- Preservation (including migration)
- Retention and Disposition

Annex 3. Recommendations for Legislative Action

The State Librarian will pursue modification of the following statutes. Please note that changes to the statutory language are indicated in brackets (old text to be removed) or underlined (new text to be added).

Legislative Proposal #1

Title of Proposal:

Permanent Electronic Records

Statutory Reference:

[CGS Sec. 1-9](#). Alkaline paper for permanent records.

[CGS Sec. 1-272](#). Legal recognition of electronic records, electronic signatures and electronic contracts.

[CGS Sec. 7-35aa through 7-35gg](#). Uniform Real Property Electronic Recording Act.

Proposal Summary:

Update Sec. 1-9 to allow for preservation of permanent records in formats other than paper.

Proposal Background:

Sec. 1-9 requires permanent paper for recording purposes. However, a number of other statutes allow records in electronic and other formats. The Connecticut Uniform Electronic Transactions Act (CUETA) establishes the legal recognition of electronic records in Sec. 1-272. Public Act 08-56 established the Uniform Real Property Electronic Recording Act (Sec. 7-35aa-gg), which allowed for electronic recording. Land records are considered permanent records. As a result, Sec. 1-9 needs to be updated to accommodate the preservation of permanent records in formats other than paper.

Proposal Impact:

The proposal affects all agencies in the Executive Branch of state government, as well the towns, cities, boroughs, districts, and other political subdivisions of the state for the purposes of records retention and disposition. The State Library Task Force did not research the fiscal impacts or policy and programmatic impacts.

Proposed Language:

Sec. 1-9. Alkaline paper for permanent records. No person having custody of any permanent record or register in any department or office of the state, or of any political subdivision thereof, or of any probate district, shall use or permit to be used for recording purposes any paper other than alkaline paper that meets or exceeds the American National Standards Institute standards for permanent paper and meets such additional specifications as may be issued by the Public Records Administrator, unless such paper is not available. [Said administrator shall furnish to each person having custody of any such permanent record a list of such papers.] Permanent electronic

records shall be maintained in accordance with electronic authentication and preservation standards issued by the Public Records Administrator. Any person who violates any provision of this section shall be fined not more than one hundred dollars.

Legislative Proposal #2

Title of Proposal:
Official Record Copy

Statutory Reference:
[CGS Sec. 1-14](#). "Certified copy" defined.

Proposal Summary:
Update Sec. 1-14 to include a definition of "official record copy."

Proposal Background:
For purposes of authentication, it is necessary to designate an official record copy. The statutory change is necessary to define "official record copy."

Proposal Impact:
The proposal affects all agencies in the Executive Branch of state government, as well the towns, cities, boroughs, districts, and other political subdivisions of the state for the purposes of records retention and disposition. The State Library Task Force did not research the fiscal impacts or policy and programmatic impacts.

Proposed Language:
Sec. 1-14. "Certified copy" defined. Evidence. When the term "certified copy" is used in any statute relating to any recording agency, such term shall be construed to include a certified reproduction of the image or images of such books, records, papers or documents, which is proportional in size to the original. Each process used for such reproductions shall be subject to the approval of the Public Records Administrator. Any such reproduced record or any such certified copy may be admitted in evidence with the same effect as the original thereof, and shall be prima facie evidence of the facts set forth therein.

(NEW) (Effective from passage) Sec. 1-14a. "Official record copy" defined. "Official record copy" means the single copy of a record, often the original, which is designated as the official and legally recognized copy for records retention, preservation, and authentication.

Legislative Proposal #3

Title of Proposal:
Essential Records

Statutory Reference:

[CGS Sec. 11-8\(a\)](#). Records management program. Public Records Administrator.

Proposal Summary:

Update Sec. 11-8(a) to restore State Library cooperation with emergency management and preparedness authorities in carrying out an essential records program.

Add new Sec. 11-8d to provide for the identification and protection of essential records.

Proposal Background:

Pursuant to Sec. 11-8(a), the State Library is responsible for carrying out a program for the identification and preservation of essential records of the state and of its political subdivisions. The statutes provide no additional information or requirements regarding essential records including what constitutes an essential record.

P.A. No. 495 [1967] revised the State Library's oversight authority for public records to reflect modern records management practices and included an essential records program in cooperation with the Civil Defense Advisory Council. The act did not define "essential record," but the inclusion of the Civil Defense Advisory Council clearly shows the intent was oversight of records vital to the continuity of operations in the event of a serious natural disaster of enemy attack, sabotage or other hostile action. In 1977, the council, renamed the Civil Preparedness Advisory Council in 1973, was eliminated as part of an effort to consolidate and reorganize state government. Reference to the council was eliminated from Sec. 11-8 in 1980. Without this context, a definition, and the use of the term "preservation," many agencies assumed the program referred to historical records rather than critical operating records. Therefore, some state agencies and political subdivisions have not identified these records nor taken measures for their protection.

Proposal Impact:

The proposal affects all agencies in the Executive Branch of state government, as well the towns, cities, boroughs, districts, and other political subdivisions of the state for the purposes of records retention and disposition. The State Library Task Force did not research the fiscal impacts or policy and programmatic impacts.

Proposed Language:

Sec. 11-8. Records management program. Public Records Administrator. (a) Under the direction of the State Library Board, the State Librarian shall be responsible for developing and directing a records management program for the books, records, papers and documents of all state agencies within the executive department, and the books, records, papers and documents of the several towns, cities, boroughs, districts and other political subdivisions of the state, including the probate districts, pursuant to the provisions of section 11-8a...; and carry out a program for the identification and

[preservation] protection of essential records of the state and of its political subdivisions in cooperation with the appropriate state and local emergency preparedness and response authorities. He shall, with the approval of the State Library Board, and in accordance with the provisions of chapter 54, adopt regulations for the creation and preservation of the records of the several towns, cities, boroughs and districts, including probate districts, of the state...

NEW (Effective from passage)11-8d. Protection of essential records. (a) In order to provide for the continuity of government during and following a disaster or emergency situation, the administrative heads of all state agencies within the executive branch and of the several towns, cities, boroughs, districts and other political subdivisions of the state, including the probate districts, shall identify their essential records. Essential records are those records necessary to respond to an emergency; to reestablish normal operations after any such emergency; to protect the rights and interests of the agency; and to protect the rights and interests of individuals for whom it has responsibility. The administrative head shall forward a list of essential records to the Public Records Administrator on a form(s) prescribed by the Public Records Administrator. Each administrative head or a designee must review the list at least annually to ensure its completeness. The administrative head or a designee must forward any changes or revisions to the Public Records Administrator.

(b) Each administrative head shall ensure the protection of all essential records by any method approved by the Public Records Administrator. All state agencies within the executive branch and the several towns, cities, boroughs, districts and other political subdivisions of the state, including the probate districts, shall incorporate the protection of essential records into any adopted continuity of operations plan or emergency operations plan.

Legislative Proposal #4

Title of Proposal:
Records Management Officer Designation

Statutory Reference:

[CGS Sec. 11-8a\(f\)](#). Retention, destruction and transfer of documents. Centralized microcopying services.

[CGS Sec. 11-9d](#). Duties of state agencies re tangible and intangible publications. Designation of staff.

Proposal Summary:

Update Sec. 11-8a(f) to include specific requirements for the employee's position within the agency, include municipalities (already under the State Library's authority, but no requirement to designate an RMLO), and to change the designee's title from RMLO to RMO (Records Management Liaison Officer to Records Management Officer).

Proposal Background:

The federal government, as well as most other state governments and major private organizations, recognize the importance of managing records as information assets of the organization. As a result, these organizations hire skilled staff, typically records managers, to effectively manage these assets. However, the State of Connecticut does not have a job class or even defined job duties within certain appropriate job classes, dedicated to records management. This has resulted in a variety of employees with varying skill sets to serve as RMLOs, many of whom do not have the required knowledge and skills to effectively manage records, nor the authority within their organizations to direct other employees. Therefore, it is necessary to update Sec. 11-8a(f) to include specific job class requirements for agency employees designated as RMLOs.

In addition, the term "Records Management Liaison Officer" should be changed to "Records Management Officer" to reflect the importance of the designation. The State Librarian should also advocate for the creation of a records manager job class and each state agency should hire a person to act in that capacity. Managing the information assets of an agency is a challenging task and requires a full-time employee with records management skills.

Pursuant to Sec. 11-8(a), state agencies within the executive department, as well as the towns, cities, boroughs, districts, and other political subdivisions of the state are under the authority of the Office of the Public Records Administrator for records retention and disposition. However, Sec. 11-8a(f) only requires state agencies to designate an employee to serve as the RMLO. This statute should be expanded to apply to all entities under Public Records' authority.

Finally, in line with the definition of records management, which is "the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use, and disposition of records," Sec. 11-8a(f) should state that the

designated RMO also will serve as the “designated staff” regarding agency publications, under Sec. 11-9d. This will not only benefit the agency in managing their records efficiently (one centralized person with more systematic control over records), but also the State Library (by providing for a single, centralized database of agency contacts).

Proposal Impact:

The proposal affects all agencies in the Executive Branch of state government, as well certain quasi-public agencies for the purposes of records retention and disposition. The State Library Task Force did not research the fiscal impacts or policy and programmatic impacts.

Proposed Language:

Sec. 11-8a(f) Each [state] agency as listed in Sec. 11-8(a) shall cooperate with the State Librarian to carry out the provisions of this section and shall designate an [agency] employee to serve as the records management [liaison] officer for this purpose. The records management officer should hold a position within the agency to have considerable knowledge of agency functions and the records created to fulfill those functions, as well as the authority to direct employees. For municipalities, this person should be the Town Clerk or Records Manager. The records management officer shall also serve as the designated staff as specified under Sec. 11-9d. Each agency may designate multiple employees to serve as records management officers dependent on business needs.

Annex 4. Uniform Electronic Legal Material Act (UELMA)

The Uniform Electronic Legal Material Act (ULEMA) was approved by the National Conference of Commissioners on Uniform State Laws (NCCUSL) in July 2011. This Act provides states with an outcomes-based approach to the authentication and preservation of electronic records. The Act requires that official electronic legal material be: (1) authenticated, by providing a method to determine that it is unaltered; (2) preserved, either in electronic or print form; and (3) accessible, for use by the public on a permanent basis. UELMA addresses the critical need to effectively provide and manage electronic government information in a manner that guarantees trustworthiness and continued access. (Source: Uniform Law Commission.)

National Conference of Commissioners on Uniform State Laws Electronic Legal Material Act:

www.nccusl.org/Act.aspx?title=Electronic%20Legal%20Material%20Act.

Also see the Legislative Information Kit located in the middle of the page for a legislative fact sheet and why states should adopt the Act.

Electronic Legal Material Act (with prefatory note and comments):

www.law.upenn.edu/bll/archives/ulc/apselm/UELMA_Final_2011.html. NOTE: As of 12/2/11, the link to the text of the act was not functioning; alternatively, see www.law.upenn.edu/bll/archives/ulc/apselm/2011am_draft.pdf.

Electronic Legal Material Act (without prefatory note or comments):

www.uniformlaws.org/Shared/Docs/AM2011_Prestyle%20Finals/UELMA_PreStyleFinal_Jul11.pdf.

Annex 5. Best Practices for the Production of State Publications

The Access Services Unit should issue best practices for the production of state publications. Under the authority granted by CGS Sec. 11-9c, these best practices should apply to every state office, officer, department, division, bureau, board and commission, permanent or temporary in nature, whether legislative, executive or judicial, and any subdivisions of each, including state-supported institutions of higher education as defined in CGS Sec. 11-9b(c).

Proposed Outline for Best Practices for the Production of State Publications

The Connecticut State Library catalogs each state publication received, whether in paper or electronic. The more comprehensively agencies describe their publications, the greater the likelihood that readers will locate them, now and in the future. Official publications are an important part of the record of Connecticut government. All levels of government and their citizens regularly consult them, as do scholars, researchers, and common readers worldwide.

Some agencies may already have a style manual that covers many of the guidelines here listed.

When publishing a state publication, the following components should be included:

1. Specifications for Title Page
 - a. A complete title.
 - b. An author or responsible authority, e.g., agency, authority, committee, commission, task force or responsible party/individual.
 - c. A publication date or Web posting date.
 - d. Time period covered, e.g. fiscal year, calendar year, federal fiscal year.
 - e. Document version, e.g. draft, second draft, final version.
 - f. Revision or a new edition of a previous publication.
 - g. Serial (recurring) publications should have a volume number, issue number, and a date.
 - h. Publications in a series, e.g. Institute of General Studies Research Papers, should have a publication number.
2. Transmittal letter
3. Table of contents
4. Page numbers

5. Committee member names and contact numbers
6. Index
7. Scanned Publications
 - a. If an agency scans an older publication for Web publishing, include all of the above plus the date the scan was completed.
 - b. Include the document cover.
 - c. Perform quality control checks.
8. Web Publications
 - a. If the publication is published on the Web, the following formats are recommended to use to increase patron accessibility, permanence, and information security:
 - i. Portable Document Format/Archives (PDF/A).
 - ii. Hypertext Markup Language (HTML) or Extensible Markup Language (XML) with JPEG illustrations. NOTE: though acceptable for public information and websites, this format is not recommended for reports.
 - iii. Open Document Format (ODF).
 - iv. Broadcast Wave Format (BWF). Used for audio.
 - v. Lossless Joint Photographic Experts Group (JPEG 2000). Used for photographic images.
 - vi. Joint Photographic Experts Group (Motion JPEG 2000). Used for digital video.

Annex 6. Connecticut Electronic Records Archives (CTERA)

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Connecticut State Library, State Archives Recommendations for a Connecticut State Government Electronic Records Archives

1. Introduction

In accordance with Sec. 28 of Public Act 11-150, the State Librarian shall establish standards and guidelines for the preservation and authentication of electronic documents. In response, Connecticut State Archives staff drafted the following recommendations for a Connecticut state government electronic records archives. Please note that these recommendations do not address the preservation and authentication of electronic mail (e-mail).

2. Objectives

The objectives of the Connecticut Electronic Records Archives (CTERA)¹ should be to:

- a. Establish and sustain a scalable and auditable trusted digital repository infrastructure in order to preserve the readability and accessibility of electronic records across successive generations of information technology.
- b. Provide capabilities to ensure access to all electronic Connecticut government records that user communities are entitled to see, and to restrict access to records to those user communities with appropriate access rights and privileges.
- c. Maintain the chain of custody for the entire lifetime of electronic Connecticut government records once transferred to the State Library.
- d. Interface with other information technology systems and networks implemented by the State of Connecticut.
- e. Not be mass storage for active business applications and data.
- f. Not be remote back-up for state and local government networks and data.

3. Standards

The State Library should consider the following standards:

- a. **ISO 14721: 2003 Open Archives Information System (OAIS) Reference Model**

The OAIS reference model identifies at a high level the minimal responsibilities required to allow an archives to meet its specific objectives. The reference model is used for checking to see whether your repository has the necessary controls in place, creating or updating policies and procedures, and provides a common terminology for all stakeholders. "OAIS defines what is needed but not how to build it."²

¹ The name Connecticut Electronic Records Archives (CTERA) is used in this document for illustration purposes only.

² Cornell University and ICPSR, Part 4, Introduction of *Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems* tutorial, <http://www.dpworkshop.org/dpm-eng/foundation/index.html>. For an illustration of the OAIS reference model see Appendix D.

- b. **Trusted Digital Repositories: Attributes and Responsibilities**
The Trusted Digital Repositories (TDR): Attributes and Responsibilities were published as an RLG-OCLC report in May 2002. The TDR report “defines the organizational context for a digital preservation program. TDR embraces OAIS and demonstrates what adhering to OAIS will mean for an institution.”³
- c. **Trustworthy Repositories Audit & Certification: Criteria and Checklist (TRAC:2007)**
TRAC is based off ISO 14721: 2003 Open Archives Information System (OAIS) and ISO 15489-1: 2001 Records Management Standard. TRAC is a tool used in the assessment of existing systems and the creation of future ones. It is applicable to digital repositories or archives and is scalable.
- d. **Standards for Trustworthiness**
The following two draft ISO standards will become the foundation of TRAC: ISO/DIS 16363 (draft) Audit and certification of trustworthy digital repositories. ISO/DIS 16919 (draft) Requirements for bodies providing audit and certification of candidate trustworthy digital repositories.
- e. **DoD (Department of Defense) 5015.2 – STD – Software Design Criteria**
DoD 5015.2 provides a minimum set of functional requirements for proprietary software to meet in order to perform electronic recordkeeping functions – Electronic Records Management (ERMs).
- f. **PREMIS (Preservation Metadata: Implementation Strategies: 2007)**
PREMIS, a Library of Congress standard, was built upon the concepts in the OAIS reference model. It provides “the information a repository uses to support the digital preservation process.”
- g. **METS (Metadata Encoding Transmission Standard)**
METS “is a data encoding and transmission specification, expressed in XML, that provides the means to convey the metadata necessary for both the management of digital objects within a repository and the exchange of such objects between repositories (or between repositories and their users).”
- h. **MODS (Metadata Object Description Schema)**
MODS “is a schema for a bibliographic element set that may be used for a variety of purposes, and particularly for library applications. The standard is maintained by the Network Development and MARC Standards Office of the Library of Congress with input from users.”

³ Cornell University and ICPSR, Part 4, Introduction of *Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems* tutorial, <http://www.dpworkshop.org/dpm-eng/foundation/index.html>.

- i. **DACS (Describing Archives: A Content Standard)**
 DACS “is an output-neutral set of rules for describing archives, personal papers, and manuscript collections, and can be applied to all material types. It is the U.S. implementation of international standards (i.e., ISAD(G) and ISAAR(CPF)) for the description of archival materials and their creators.”

- j. **InterPARES (International Research on Permanent Authentic Records in Electronic Systems)**
 InterPARES has developed in three phases from 1999 to the present and “aims at developing the knowledge essential to the long-term preservation of authentic records created and/or maintained in digital form and providing the basis for standards, policies, strategies and plans of action capable of ensuring the longevity of such material and the ability of its users to trust its authenticity.”

- k. **Office of the Public Records Administrator and State Archives General Letter 2001-1 Standards for the Use of Imaging Technology for Storage, Retrieval, and Disposition of Public Records: Policy Statement**
 General Letter 2001-1 provides policy guideline on the use of computer digital imaging systems for reproducing and storing digital images of official public records of all state and local government entities in Connecticut on optical or magnetic storage mediums.

- l. **Office of the Public Records Administrator General Letter 2009-2: Management and Retention of E-mail and Other Electronic Messages**
 General Letter 2009-2 provides guidelines for managing and retaining electronic messages.

4. **Functionality**

- a. **Acquisition and Transfer of Records**
 - i. The State Library serves as the archival repository for the historical records of Connecticut state government regardless of physical form.
 - ii. Identification of historical records regardless of physical form are accomplished through Office of Public Records Administrator approved retention schedules and appraisal by the State Archivist or his designee(s).
 - iii. State Library, State Archives should implement requirements for the transfer of legal custody of electronic records of permanent value.
 - iv. State Library, State Archives should negotiate agreements with Connecticut state government agencies/entities (producers) that produce electronic business records with a permanent value.
 - v. Transfer agreements for permanent electronic records shall include any and all restrictions for access based upon statutes or regulations.
 - vi. Encrypted files shall not be transferred to the CTERA.
 - vii. Transfer of electronic records to the state archives may occur through several methods: storage media (i.e. CD, DVD, external hard drives, etc.),

- Web service, secure File Transfer Protocol (sFTP), or any future method approved by the State Archivist.
- viii. The State Library should seek to limit the number of accepted file formats for transfer and urge state agencies/entities to adopt standard non-proprietary open file formats. (See Appendix C)
 - ix. Electronic records transferred should be required to contain sufficient metadata to provide basic discoverability and retrieval.
 - x. The State Library should develop file naming guidelines for use by state agencies/entities when implementing electronic records management strategies or systems.
 - xi. The State Library should develop policies and procedures for the purging of electronic records that do not meet the requirements of the State Archives Collection Policy and/or deaccessioning regulations be reviewed for transfer of electronic records approved by the State Library Board.

b. Preservation

The State Library should consider the following:

- i. Maintain evidence of any preservation actions performed on the records in the repository.
- ii. Use of a variety of approaches to mitigate technology obsolescence:
 - 1. Storage device and media refreshment and replication to preserve the bit streams of electronic Connecticut government records.
 - 2. Migration of records to new stable formats as they become available. Migration is the process for repeated conversion or transformation of digital records from one technology platform to a more stable one.⁴
 - 3. Transformation of records to new archival storage file formats as they become available.
 - 4. Viewer technologies to render electronic records stored in proprietary file formats, such as Microsoft Word, and provide access to static, non-processible renditions of the records.
 - 5. Technology neutral open standard file formats for archival storage. Producers will be encouraged to implement these technology neutral open standard file formats in their operational records systems. Electronic records in these formats are “preservation ready” thereby reducing the need to transform records when transferred to the State Library, State Archives. (See Appendix C)
 - 6. Open source software and systems will be supported wherever possible. In using open source software and systems the State Library will have access to the source code in order to mitigate

⁴ Kansas State Historical Society, “Appendix 4 Software Obsolescence” in *Kansas Enterprise Electronic Preservation, KEEP System Policy Framework version 1.0* (Kansas Historical Society, September 2010) http://keep.ks.gov/wp-content/uploads/2010/09/KEEP_Policy_Framework_accepted_ver1.0_web.pdf.

risk of having records locked into proprietary software and systems where we would not have access to the source code.

- iii. Preserve at minimum three copies:
 - 1. Original bit stream;
 - 2. Preservation copy;
 - 3. Presentation copy
- iv. State Library staff should follow professionally accepted best practices and standards for preservation of electronic records.

c. Authentication

- i. CTERA shall protect the authenticity of Connecticut state government electronic records by requiring the transferring agencies/entities to authenticate records at the time of transfer to the State Library, State Archives.
- ii. CTERA shall create and maintain preservation activity and other metadata that supports an electronic chain of custody.

d. Access

The State Library should consider the following:

- i. Security
 - 1. CTERA shall be administered by the State Library.
 - 2. CTERA should provide appropriate access levels for different user communities and sets of security rights.
 - 3. Appropriate off-site backup policies and procedures will need to be developed and implemented. Policies and procedures for backup should be reviewed on an annual basis.
 - 4. Electronic records in CTERA should not directly communicate with the state government portal, network or internet. At least 2 firewall layers should be in place in addition to an intrusion protection system.
 - 5. Transferred records shall be scanned for viruses and quarantined prior to being ingested into the repository.
 - 6. Additional security policies, procedures, disaster planning, and guidelines will need to be developed with all stakeholders.
 - 7. The State Library should conform when practical to international system security standards.
- ii. Comply with the provisions of the Connecticut Freedom of Information Act exemptions found in CGS Sec. 1-210 and other state and federal laws restricting access to Connecticut government records.
- iii. Comply with access requirements of ADA Section 508 and related statutes.
- iv. Cross-reference related State Library holdings and information on directions to the facilities and on how to submit reference questions.
- v. Support persistent access to Connecticut state government electronic records of enduring value through multiple access points.

- vi. Disseminate electronic records in selected technology neutral open standard formats.
- vii. Redact or otherwise restrict public access to Connecticut state government electronic records based on the restrictions identified in the transfer agreement. This includes but is not limited to redaction using the appropriate technology tools in accordance with the current redaction policy of the Connecticut State Library.

e. Systems

- i. The State Library should, in consultation with stakeholders, consider the establishment of a contract for the purchase of enterprise content management systems meeting the requirements of DoD 5015.2-STD ensuring that records management requirements are included in agency/entity systems.⁵
- ii. The State Library should make every attempt to use open source commercially off the shelf (COTS) products for CTERA.
- iii. Technology infrastructure for CTERA or any other digital archives systems should be designed to handle current transfer and storage of electronic records and anticipate the need for future scalability. For example, the Hawaii Digital Archives is starting with 24 Terabytes of storage while the Digital Archives of Georgia anticipates using multiple Petabytes of storage.
- iv. A resources framework both for immediate and long term “covering staff, technological, operational, and other costs...”⁶
- v. Redundancy will need to be built into any digital archives system. For example, a fail over system so if one server goes down the whole system will not get affected.⁷

5. Legal Framework

- a. **HB 6600 (Public Act 11-150), Section 28**, *An Act Implementing the Recommendations of the Legislative Paperless Task Force and the Task Force to Study the Reduction of State Agency Paper and Duplicative Procedures.*
- b. **CGS Sec. 1-200(5)** "Public records or files" means any recorded data or information relating to the conduct of the public's business prepared, owned, used, received or retained by a public agency, or to which a public agency is entitled to receive a copy by law or contract under section 1-218, whether such

⁵ Georgia Archives. *White Paper: The Digital Archives of Georgia Summary*, 24 July 2006, http://sos.ga.gov/archives/who_are_we/rims/digital_History/whitepapers/whitepaper%20-%20The%20Digital%20Archives%20of%20Georgia%20An%20Overview.pdf.

⁶ Cornell University and ICPSR, Part 6, Program Elements of *Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems* tutorial, <http://www.dpworkshop.org/dpm-eng/program/framework.html>.

⁷ Hawaii State Archives, *Digital Archives Project Update, June 2011*, at 45:45 <http://hawaii.gov/dags/archives/hawai-i-state-digital-archives-a-work-in-progress> (requires QuickTime player).

data or information be handwritten, typed, tape-recorded, printed, photostated, photographed or recorded by any other method.

c. **CGS Sec. 1-260-286. Connecticut Uniform Electronic Transactions Act (CUETA)**

i. **Sec. 1-267. Definitions.** As used in sections 1-266 to 1-286, inclusive:
(7) "Electronic record" means a record created, generated, sent, communicated, received or stored by electronic means, including, but not limited to, facsimiles, electronic mail, telexes and Internet messaging.

ii. **Sec. 1-272. Legal recognition of electronic records, electronic signatures and electronic contracts.**

(a) A record or signature may not be denied legal effect or enforceability solely because the record or signature is in electronic form.

(b) A contract may not be denied legal effect or enforceability solely because an electronic record was used in the formation of the contract.

(c) If a law requires a record to be in writing, an electronic record satisfies the law.

(d) If a law requires a signature, an electronic signature satisfies the law.

iii. **Sec. 1-277. Retention of electronic records; originals.**

(g) This section does not preclude a governmental agency in this state from specifying additional requirements for the retention of a record subject to the agency's jurisdiction, except as otherwise required by the State Librarian or the Public Records Administrator in accordance with sections 11-8 and 11-8a.

iv. **Sec. 1-282. Creation and retention of electronic records and conversion of written records by governmental agencies.**

Except as otherwise required by the State Librarian or the Public Records Administrator in accordance with sections 11-8 and 11-8a, each governmental agency in this state shall determine whether, and the extent to which, it will create and retain electronic records and convert written records to electronic records.

v. **Sec. 1-283. Acceptance and distribution of electronic records by governmental agencies. Interoperability. Regulations.**

(f) This section is subject to any requirements established by the State Librarian or the Public Records Administrator in accordance with sections 11-8 and 11-8a.

d. **CGS Title 7 Municipalities: General Provisions**

i. **Sec. 7-109. Destruction of documents.**

Any official, board or commissioner of a municipality may, with the approval of the chief administrative officer of such municipality and of the Public Records Administrator, destroy any document in his or its custody relating to any matter which has been disposed of and of which no record is required by law to be kept, after such document has been held for the period of time specified in a retention schedule adopted by the Public Records Administrator. The tax collector may, with like approval, destroy any duplicate record receipt book, duplicate tax

receipts or rate bills, at a time specified by the Public Records Administrator. The provisions of section 12-151 requiring the retention of duplicate tax receipts as permanent records shall not apply in the case of such receipts destroyed as provided in this section. The tax collector may, with like approval, destroy any old age assistance or personal tax records. The town clerk may, with like approval, destroy any liquor permit, any corporation annual report, any registration list of motor vehicles, any voting check list, any tax list or abstract, any tax lien, release of tax lien, attachment or any original document lodged with him for record, of which the proper owner or owners are not known to him, and which has remained in his office uncalled for, at a time specified by the Public Records Administrator. In lieu of destroying any document, under any provision of this section, any official, board or commissioner of a municipality may, with like approval, deposit the same in the custody of any society incorporated or organized under the laws of this state exclusively for historical or educational purposes; provided all documents so deposited shall be maintained and made available by such society for the use of the public. No original document dated prior to the year 1900 shall be destroyed under the provisions of this section without the express written approval of the Public Records Administrator.

ii. **Sec. 7-110. Official publications of towns, cities and boroughs to be filed in State Library. Intangible publications.**

(a) Official publications of the towns, cities and boroughs of the state shall be kept in the State Library for reference. The clerk of each such town, city or borough shall send to the State Library two copies of each such tangible publication as soon as the publications are published, and copies of such previous issues of such publications as can be spared by such municipality if the publications are needed by the State Library.

(b) The clerk of each town, city or borough shall, upon publication, supply the State Library with, or notify the State Library of the existence, availability, and location of, any intangible publications of the town, city or borough.

e. **CGS Title 11 Libraries, State Library**

i. **Sec. 11-1c. Official state archives. Appointment of State Archivist.**

The State Library Board shall create and maintain the official state archives. The State Librarian shall, subject to the provisions of chapter 67, appoint an assistant, who shall be the State Archivist.

ii. **Sec. 11-4a. Commissions and agencies to file reports with librarian.**

Each commission, task force or committee appointed by the Governor or the General Assembly, or both, and required to report its findings and recommendations, and each state agency which submits a report to the General Assembly or any committee of the General Assembly, shall submit its report to the clerks of the Senate and the House of Representatives, and shall file with the State Librarian as many copies of such report as the commission, task force, committee or agency and the

- librarian jointly deem appropriate, and one copy with the Office of Legislative Research.
- iii. **Sec. 11-8. Records management program. Public Records Administrator.**
 - iv. **Sec. 11-8a. Retention, destruction and transfer of documents. Centralized microcopying services.**
 - v. **Sec. 11-8b. Transfer or disposal of public records. State Library Board to adopt regulations.**
 - vi. **Sec. 11-9b. Definitions.** As used in this section and sections 11-9c and 11-9d: (a) "State publications" means all publications printed or otherwise produced in tangible form, and all publications produced in electronic or other intangible form, by or under the direction of the state or any officer thereof, or any other agency supported wholly or in part by state funds;
(b) "Publication" means any document issued by a state agency that is available to the public, regardless of format or purpose, including legislatively mandated reports, with the exception of routine correspondence;
(c) "State agency" means every state office, officer, department, division, bureau, board and commission, permanent or temporary in nature, whether legislative, executive or judicial, and any subdivisions of each, including state-supported institutions of higher education;
(d) "Depository library" means the designated library for collecting, maintaining and making available to the general public Connecticut state agency publications.
 - vii. **Sec. 11-9c. Tangible and intangible state publications and depository library system.**
 - viii. **Sec. 11-9d. Duties of state agencies re tangible and intangible publications. Designation of staff.**

Appendix A.
States with Guidelines, Digital Archives or Developing Digital Archives

State	Guidelines	Developing Digital Archives	Operating Digital Archives	Digital Archives Hosted by Outside Vendor	Other
Alaska	N/A			WDA*	Attorney General Opinion
Colorado	N/A			WDA	
Delaware	Yes				
Georgia	Yes	Yes			
Hawaii	Developing	Yes			
Idaho	N/A			WDA	
Indiana	N/A			WDA	
Kansas	Developing	Yes			
Kentucky	N/A		Yes		Dspace
Minnesota	Yes				
Mississippi	N/A		Yes		In-house server
Montana	N/A		Yes	WDA	
Nevada	N/A		Yes	WDA	
North Carolina	N/A		Yes	WDA	
Ohio	Yes				
Oregon	N/A		Yes	WDA	
Tennessee	N/A		Yes	WDA	
Texas	Yes				
Utah	Yes				
Vermont	Yes				
Virginia	Yes				Accepts e-records on case-by-case basis; records are put on an in-house server.
Washington	Yes		Yes		
Wisconsin	Yes				
Wyoming	Yes				

Figure 1. Table listing what other states are doing or have done to date in regard to electronic records management and permanent preservation. N/A means “not applicable.”

***Note:** WDA refers to the Washington Digital Archives. The WDA participants contributed mostly digitized records and not born digital records.

Alaska

www.archives.state.ak.us/pdfs/AGOpinionReWADigitalArchives.pdf

The Alaska State Archivist in October 2011 received an opinion from the Attorney General of Alaska on the question of whether or not the state archives could store permanent State of Alaska digital records at the Washington Digital Archives. The opinion from the Attorney General found in “brief that the state archivist may store permanent digital State of Alaska records at the Digital Archives as long as the requirements of the State Records Management Act, 40.21.010 – 40.21.150, will be met.”

Colorado

www.coloradodigitalarchives.org

The Colorado Digital Archives is an archives partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Death Records

Collections Coming Soon: Social Security Death Index

See the following link for more information and the next link for a map of the partner states:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

Delaware

www.archives.delaware.gov/govsvcs/pdfs/Records%20Policies/Model%20Guidelines.pdf

The Delaware Public Archives (DPA) has published “Model Guidelines for Electronic Records” to their website. The guidelines primarily focus on certifying agency systems, retention agreements instead of retention schedules with agencies, and then detail how to transfer electronic records to the DPA by “compact disc (CD-R; Read only memory, ANSI/NISO/ISO 9660-1990) with appropriate electronic indices.”

Georgia

www.sos.ga.gov/archives/who_are_we/rims/digital_History/default.htm

The “Preserving Georgia’s Historical Data (PGHD)” – Digital Archives of Georgia (DAG) has been ongoing since at least 2005. The DAG has a six phase roll out with the Georgia Archives in phase 4 “preliminary requirements” and moving into phase 5 and 6 which will be implementation of the system, a pilot project, beta testing, and roll out. They are slowly scaling out site 1 and then site 2 which is a disaster mirror site in 2012-2013. Budget constraints have pushed the project back from a launch in 2008 to what appears now to be at the earliest 2012-2013 for complete roll out. The DAG does have documents, policies, procedures, standards, rules, and administrative regulations on their website.

Hawaii

www.hawaii.gov/dags/archives/hawai-i-state-digital-archives-a-work-in-progress

Currently the Hawaii State Archives is in the planning and pilot stages. In July 2012 they will begin an initial beta project working with three state agencies. In Fall 2012 they will begin hiring project staff with information technology (IT), information science, and archival background. Beginning in January 2013 they plan to begin bringing more agencies onboard and in 2014 go completely operational. They plan to start with 24TB of storage but easily could ramp that number up further in matter of weeks after going operational. They plan to be a self sustaining based off fee recovery service like the Washington Digital Archives.

Idaho

www.digitalarchives.idaho.gov

The Idaho Digital Archives is an archives and library partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Death Records, E-Publication Records, Misc Historical Records, and Naturalization Records.

Collections Coming Soon: Social Security Death Index.

See the following link for more information and the next link for a map of the partner states:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

Indiana

www.indianadigitalarchives.org/default.aspx

The Indiana Digital Archives is a library partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Death Records, Institution Records, Military Records, Misc Historical Records, and Naturalization Records.

Collections Coming Soon: Carroll Naturalization Records, Closed Nursing Schools, Crawfordsville Land Office, DeKalb County Naturalization Records, Grant County Naturalization Records, Madison County Naturalization Records, and Wells County Naturalization Records.

See the following link for more information and the next link for a map of the partner states:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

Kansas

<http://keep.ks.gov>

The Kansas Enterprise Electronic Preservation System (KEEP) is currently being built and plans to roll out beginning in March 2012. KEEP was mandated by Kansas law to be a self sustaining based off fee recovery service.

Kentucky

<http://kdla.ky.gov/records/e-archives/Pages/default.aspx>

<http://dspace.kdla.ky.gov:8080/jspui>

The Kentucky Electronic Records Archives (e-Archives) uses DSpace software from Duraspace, a non-profit 501(c)(3) organization, to provide access to Kentucky government electronic records and digitized materials made available by the Kentucky Department for Libraries and Archives (KDLA). The DSpace e-archives archives is organized by cabinet, branch of government, or elected official and then users can browse by agency. However, the e-archives interface is not intuitive.

Minnesota

www.mnhs.org/preserve/records/electronicrecords.htm

The Minnesota State Historical Society, State Archives have published electronic records management resources on their website. Included are electronic records management guidelines, *Trustworthy Information Systems Handbook*, *Minnesota Recordkeeping Metadata Standard*. The Connecticut State Library Task Force for Preservation and Authentication of Electronic Documents have consulted the Minnesota electronic records management guidelines. The Vermont State Archives and Records Administration (VSARA) and Vermont Secretary of State in 2003 adopted the Minnesota State Archives *Trustworthy Information Systems Handbook* as Vermont's best practice guidelines for information systems.

Mississippi

http://mdah.state.ms.us/arrec/digital_archives/

The Mississippi Digital Archives include electronic records from government agencies and officials, donated and acquired electronic records, and digitized materials from the Mississippi Department of Archives & History (MDAH) collections. I could not find any specific policies or procedures for transferring and preserving electronic records. I gleaned that in the case of a previous governor's administration that MDAH was granted access to inventory and transfer electronic records to an "electronic archives server for preservation."

For further information see:

http://mdah.state.ms.us/arrec/digital_archives/musgrove/index.php?series=2529

Montana

www.montanadigitalarchives.com

The Montana Digital Archives is an archives partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Death Records.

Collections Coming Soon: Social Security Death Index.

See the following link for more information and the next link for a map of the partner states:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

Nevada

www.nevadadigitalarchives.org

The Nevada State Digital Archives went live in August 2011 and is an archives and library partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Death Records, Nevada Territorial Census, Nevada State Land Patents, and E-Publications.

Collections Coming Soon: Social Security Death Index, Records of Nevada Territory, Auditor's Records, Treasurer's Records, Court Records.

See the following link for more information and the next link for a map with links to the partner states websites:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

North Carolina

<http://northcarolinadigitalarchives.org>

The North Carolina State Publications Repository is a library partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: E-Publications

See the following link for more information and the next link for a map with links to the partner states websites:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

See also North Carolina State Archives, Government Records Branch, Electronic Records website which includes general, data transfer, email, website, and digital imaging guidelines:

www.records.ncdcr.gov/erecords/default.htm

Ohio

[http://ohsweb.ohiohistory.org/ohioerc/index.php?title=Ohio Electronic Records Committee](http://ohsweb.ohiohistory.org/ohioerc/index.php?title=Ohio%20Electronic%20Records%20Committee)

Ohio Electronic Records Committee (OERC) was formed in 1998 by the Ohio State Archives and former Office of Policy and Planning (OPP) “to draft policy for the creation, maintenance, long term preservation of and access to electronic records created by Ohio's state and local government.” OERC from June-July 1998 held meetings and technical focus groups which lead to the approval by OPP of an electronic records policy. The OERC is currently working in subcommittees on recordkeeping issues of social networking tools and reviewing existing guidelines for databases, electronic records management, and Web content management.

Oregon

www.digitalarchives.state.or.us

“The Oregon State Digital Archives is an educational partner of the Library of Congress NDIPP project hosted by Washington State. This [NDIPP project](#) is hosted by the [Washington State Digital Archives](#).” Currently the Oregon State Digital Archives has no collections or other information besides what I quoted.

Tennessee

www.tennesseedigitalarchives.org

The Tennessee Digital Archives is an archives partner with the Washington State Digital Archives under the Library of Congress Multi-State Preservation Partnership.

Collections include: Legislative Recordings.

Collections Coming Soon: Audio Recordings.

See the following link for more information and the next link for a map with links to the partner states websites:

www.digitalarchives.wa.gov/StaticContent/LoCProjectSite

www.digitalarchives.wa.gov/StaticContent/locpartnerlist

Texas

www.tsl.state.tx.us/landing/trail.html

Texas Government Web Site Archive (TRAIL). The Texas State Library and Archives Commission has a state agency bulletin on “Electronic Records Standards and Procedures” published in September 2005.

See the following link for the bulletin:

www.tsl.state.tx.us/sites/default/files/public/tslac/slr/recordspubs/bulletin1_nov2005.pdf

Utah

www.archives.utah.gov/recordsmanagement/ERM/electronic-records-links.html

The Utah Department of Administrative Services, Division of Archives and Records Services website includes basic guidelines (pre-2008) on electronic records and a list of “resources for further study.”

Vermont

www.vermont-archives.org/records/standards/vermont.htm

The Vermont State Archives and Records Administration (VSARA) have published on their website “Vermont Standards and Best Practices” which includes sections on records management, electronic mail (e-mail), electronic signatures, indexing/metadata classification, file formats, imaging/microfilm, information privacy and security compliance, information systems, and World Wide Web. VSARA and Vermont Secretary of State in 2003 adopted the Minnesota State Archives *Trustworthy Information Systems Handbook* as Vermont’s best practice guidelines for information systems.

Virginia

www.lva.virginia.gov/agencies/records/electronic/index.htm

The Library of Virginia, Records Analysis Services (RAS) and the Archives and Records Management Services Division (ARMS) have published guidelines on their website on electronic records, e-mail management, and digital imaging guidelines. According to the electronic records guidelines the ARMS division will accept electronic records from state agencies and localities on a case-by-case basis. The guidelines further on state that “however, as a result of limited capacity to administer electronic records at this time, the Library initially may be unable to accept all electronic records designated as permanent.”

Washington

www.digitalarchives.wa.gov

The Washington Digital Archives (WDA) under the authority of the Washington Secretary of State, State Archives launched in 2004. The WDA website includes policies, procedures, forms, and administrative regulations. The WDA is located at Eastern Washington University and is a self sustaining system based off fee recovery.

Wisconsin

www.wisconsinhistory.org/libraryarchives/erp

The Wisconsin State Historical Society, Library-Archives Division, have a website on their “Electronic Records Program” which was created by Wisconsin Act 257 in 1993. The website contains information on enterprise technology standards, email policy and guidance, and E-records (ADM-12). It also includes annual reports, program mandate, and a 3 year strategic plan. The State Archives does accept electronic records, however, the guidelines and planning relate more to electronic records management.

Wyoming

<http://wyoarchives.state.wy.us/RecMan/Guidelines.asp>

The Wyoming State Archives have published on their website electronic records guidelines that cover electronic records management strategy, e-mail management, storage facilities and procedures for political subdivisions, sample plan for managing electronic information records, file formats, and file naming.

Appendix B

Federal-State Cooperative Records Preservation Programs

Library of Congress, Multi-State Preservation Partnership under the Preserving State Government Information Initiative

www.digitalarchives.wa.gov/StaticContent/locprojectsite

Under this grant program with the Washington State Archives each participating partner state archives was allowed to select one records series for inclusion based on their historical and legal importance and each state library was focused on preservation and ingesting state publications.

Library of Congress, Preserving State Government Information,

www.digitalpreservation.gov/partners/states.html#partners

The lead entities and the focus areas of the initial four projects:

Arizona State Library, Archives and Public Records, "Persistent Digital Archives and Library System." (PeDALS)

www.pedalspreservation.org

Arizona is leading this project to establish a low-cost, highly automated information network that reaches across multiple states. Results will include techniques for taking in large quantities of state data as well as developing a strong data-management infrastructure. Content will include digital publications, agency records and court records. States working in this project are Arizona, Florida, New York, South Carolina, and Wisconsin.

Minnesota Historical Society, "A Model Technological and Social Architecture for the Preservation of State Government Digital Information."

www.mnhs.org/preserve/records/legislativerecords

The project is working with legislatures in several states to explore enhanced access to legislative digital records. This will involve implementing a trustworthy information management system and testing the capacity of different states to adopt the system for their own use. Content will include bills, committee reports, floor proceedings and other legislative materials. States working in this project are Minnesota, California, Kansas, Tennessee, Mississippi, Illinois and Vermont.

North Carolina Center for Geographic Information and Analysis, "Geospatial Multistate Archive and Preservation Project (GeoMAPP)."

www.geomapp.net

The GeoMAPP effort will address the preservation of at-risk and temporally significant digital geospatial content. This data is at risk of being overwritten when updates are made, with the superseded data lost for future use and analysis. The project will model an organized network engaged in the transfer and replication of geospatial data content within and between states, exploring different methodologies and tools for the preservation of geospatial data. This will include recommendations on archival processes to ingest and manage the snapshots of

geospatial data. States working in this project are North Carolina, Kentucky and Utah.

Washington State Archives, "Multi-state Preservation Consortium."

The Washington State Archives is using its advanced digital archives framework to implement a centralized regional repository for state and local digital information. Outcomes will include the establishment of a cost-effective interstate technological archiving system, as well as efforts to capture and make available increased amounts of at-risk digital information. Content will include vital records, land ownership and use documentation, court records and Web-based state and local government reports. States working in this project are Washington, Colorado, Oregon, Alaska, Idaho, Montana, California and Louisiana.

Appendix C Acceptable File Formats

The following image, text, database, geospatial, audio, digital video, and Web archiving file formats may be limited to this list for approved transfer to the State Library. The State Library should review this list of acceptable file formats annually and make changes with the approval of the Public Records Administrator, the State Archivist, and the State Librarian.

1. Image Formats

- a. Digital images created using lossless compression methods preferred
- b. DNG – Digital Negative
- c. GIF – Graphic Interchange Format
- d. JBIG – Joint Bi-level Image Experts Group (70+ dpi)
- e. JPEG – Joint Photographic Expert Group (70+ dpi)
- f. JP2 – Joint Photographic Expert Group 2000 (70+ dpi)
- g. PDF – Portable Document Format (current version plus 3 preceding versions)
- h. PDF/A – Portable Document Format Archival
- i. PNG – Portable Network Graphics
- j. SVG – Scalable Vector Graphics
- k. TIFF – Tagged Image File Format (300+ dpi, versions 4, 5, and 6)

2. Text Files

- a. DOC – Microsoft Word documents (current version plus 2 preceding)
- b. Extended American Standard Character Information Interchange (ISO 8859-1)
(See KEEPS Appendix 3 rationale)
- c. HTML – Hyper Text Markup Language
- d. ODF – Open Document Format
- e. PDF – Portable Document Format (current version plus 3 preceding versions)
- f. PDF/A – Portable Document Format Archival
- g. PDF/X – Portable Document Format for Prepress Graphics File Exchange (prefer PDF/A if possible)
- h. RTF – Rich Text Format
- i. TXT – Plain text
- j. XML – Extensible Markup Language

3. Database Formats

- a. CSV – Comma Separated Values
- b. MDB – Microsoft Access (current version plus 2 preceding; delimited files preferred)
- c. XLS – Microsoft Excel (current version plus 2 preceding; delimited files preferred)
- d. SQL and Oracle databases contingent upon space (See Georgia 590-6-1-.04)

4. Geospatial Formats

- a. PDF/E – Portable File Format Engineering

5. Audio Formats

- a. DTB – Digital Talking Book (2002 or 2005 version)
- b. BWF – Broadcast WAVE Format
- c. MP3 – (128 Kb/s (mono) or 256 Kb/s (stereo) or higher; preferred format WAVE_LPCM)
- d. WAVE_LPCM – Waveform Audio File Format (WAVE) with Linear PCM bit stream

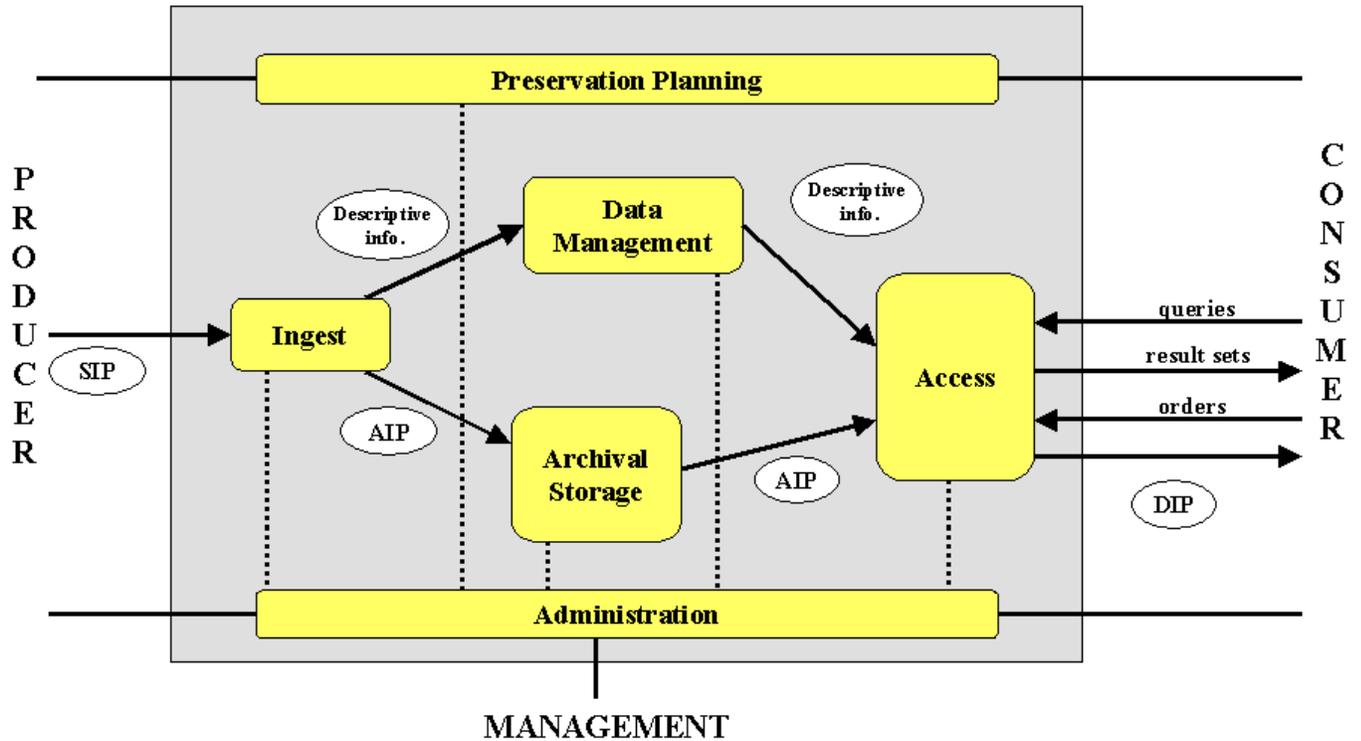
6. Digital Video Formats

- a. JPEG 2000 (Motion JPEG 2000)
- b. MPEG-2 – Motion Picture Experts Group
- c. MPEG 4 – Motion Picture Experts Group

7. Web Archiving Formats

- a. ARC_IA – Internet Archive ARC File Format
- b. WARC – Web ARChive File Format

Appendix D
ISO 14721: 2003 Open Archives Information System (OAIS) Reference Model



Source: www.ukoln.ac.uk/metadata/publications/iylim-2003/images/oais.png

For further explanation of the terms used see: www.dpworkshop.org/dpm-eng/terminology/full.html

SIP – Submission Information Package

The SIP consists of the object, required set of metadata, and transfer agreement.

AIP – Archival Information Package

The AIP is the SIP (object) plus any Preservation Description Information (PDI).

DIP – Dissemination Information Package

Delivery of AIP's to users.

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