

Digital Preservation Framework

Utah State Archives and Records Service

1. Purpose

This Digital Preservation Framework formalizes the Utah State Archive's commitment to the long-term preservation of its diverse and extensive range of digital resources, thereby assuring enduring access to these resources. This document outlines the Archive's approach to the preservation of digital resources and the associated information used to effectively manage these resources.

The Utah State Archives fulfills its mission as the trusted steward of permanent records created by Utah governmental entities by capturing the permanent records created by those entities, ensuring for their long-term care, and making them available for future researchers. This framework supports that mission and is the highest level digital preservation policy document maintained by the Utah State Archives. It makes explicit the Utah State Archive's commitment to preserving the digital assets in its collections through the development and implementation of a comprehensive digital preservation program. The framework reflects the goals defined in the [Utah State Archives Strategic Plan](#) and contains references to other relevant policies and procedures.

The Framework also recognizes that preservation and enduring access to the Archive's digital resources must be fully supported by a preservation program that includes planning, research, and monitoring. Other activities will include outreach, education, dissemination of procedures, and establishing best practices. Furthermore, it is recognized that these activities must be perpetual.

Lastly, this framework addresses an internationally accepted standard of the digital preservation community, the [Audit and Certification of Trustworthy Digital Repositories standard \(ISO 16363:2012\)](#). Accordingly, the organization of this framework reflects the seven core attributes of a trusted digital repository:

- OAIS compliance
- Administrative responsibility
- Organization viability
- Financial sustainability

- Technological and procedural suitability
- Systems security
- Procedural accountability

2. Standards Compliance

In achieving its digital preservation objectives, the Utah State Archives recognizes the need to comply with the prevailing standards and practices of the larger digital preservation community. The Archives is committed to developing its digital preservation policies, repository, and strategies in accordance with the [Open Archival Information System \(OAIS\) Reference Model \(CCSDS 650.0-P-1.1 2009\)](#).

In addition, the Archives intends to align its policies, procedures, and practices with the [Trustworthy Repositories Audit & Certification \(TRAC\) standard \(ISO 16363:2012\)](#). As part of executing policy at the operational level, the Archives will also define object level strategies and standards. For example, object level strategies may include migration or emulation of digital assets.

3. Administrative Responsibilities

As documented in its current [Strategic Plan](#), the Utah State Archives primary mission is to “assist Utah government agencies in the efficient management of their records, to preserve those records of enduring value, and to provide quality access to public information.” This mandate encompasses records created in all formats, including digital.

3.1 Mandate

The Archives mandate for digital preservation is outlined in the agency’s [Strategic Plan](#), which states that “State Archives holds Utah’s documentary history as a public trust. This history belongs to the citizens of the state and they have a legal right to open and fair access. The State Archives is mandated to provide this transparency and accountability in government.” The Archives has interpreted the legislative mandates in the [Government Records Management and Access Act \(GRAMA\)](#) and the [Public Records Management Act \(PRMA\)](#) to fundamentally mean that:

- State records are essential to protecting life, property, and the rights of citizens.

- State records provide the information infrastructure necessary to maintain order and accountability in government.
- State records collections provide documentation of the infrastructure of society and government.

Safeguarding the historical records of Utah state government and assisting governmental entities with managing their records are mandated responsibilities for the Utah State Archives, regardless of the format those records take.

3.2 Objectives

The primary objective of the Utah State Archives digital preservation program is to manage and preserve future access to digital resources that are determined by legal mandate to be of permanent value to the state of Utah. Individual program objectives are to:

- Protect the state of Utah's investment in digital preservation through a fully implemented digital preservation program.
- Demonstrate organizational commitment through identification of sustainable funding for the program.
- Foster collaborative partnerships with Utah governmental entities and other digital archives to make the best use of available resources and avoid duplicative efforts.
- Comply with preservation community standards and best practices.
- Demonstrate auditable compliance with, and contribute to, the development of the standards and practices of the international digital preservation community.
- Seek, expand, and develop digital preservation methods that are appropriate for the Utah State Archives and the governmental entities it serves.
- Adapt preservation strategies to incorporate the capabilities afforded by new and emerging technologies in cost-effective and responsible ways.
- Assess the risks for loss of content posed by technology variables such as proprietary file formats, applications, and obsolescence.
- Evaluate the digital content to determine what type and level of format conversion (migration) or other preservation actions may be required.
- Determine the appropriate type and level of metadata needed for each content type and the relationship to digital object(s).
- Include materials that originated in digital form (born-digital) and those converted to digital form.

4. Organizational Viability

The digital preservation function is integrated into the operations and planning of the Utah State Archives and throughout the management stages of the digital record lifecycle.

4.1 Scope

The Utah State Archives accepts responsibility for preserving and making available digital content, associated documentation, and other metadata provided by governmental entity depositors in accordance with the [Utah State Archives Service Plan](#).

4.2 Operating Principles

The Utah State Archives will use the following principles and actions to guide the development, implementation, and management of the Archive's digital preservation program:

- Access: Long-term access to authentic digital content is the primary goal of all preservation activities.
- Authenticity: Establish procedures to meet archival requirements pertaining to the provenance, chain of custody, authenticity, and integrity (bit-level and content) of records and assets in the digital preservation system.
- Collaboration: Partnerships and collaborative agreements will be investigated and established when deemed to be an appropriate use of institutional resources.
- Law Compliance: Define policies and procedures for the preservation of, and access to, digital resources that are in accordance with all applicable government record laws.
- Standards and Best Practices: 1) Align all policy, procedures, and practices with the international Trustworthy Repositories Audit & Certification (TRAC) standard (ISO 16363:2012). 2) Comply with the Open Archival Information System (OAIS) reference model standard in the development of digital preservation systems. 3) Adhere to prevailing community-based standards in developing and maintaining organizational and technological context. 4) Participate in the development of digital preservation standards and their promulgation throughout the digital preservation community.

- Sustainability: Define a sustainability plan for the digital preservation program that is cost-effective and transparent and that can be audited over time.
- Technology: 1) Develop the digital preservation system to maximize scalability, flexibility, and reliability. 2) Employ appropriate storage management technologies for digital resources, utilizing on-line, near-line, and off-line storage as deemed appropriate.) 3 Ensure that hardware, software, and storage media containing archival copies of digital content is managed in accordance with environmental, quality control, security, and other standards and requirements.
- Training: Provide appropriate training and development for staff in areas related to digital preservation as well as raise awareness about digital preservation issues and developments for both additional staff and the broader community of digital content producers, archivists, and users.
- Transparency: Create consistent, documented policies, procedures, and practices for the program and the operation of the digital preservation system within a distributed environment (in the Utah State Archives, all Utah governmental entities, and elsewhere).

4.3 Roles and Responsibilities

Within the Utah State Archives, the Archives Director, Deputy Director, Budget Officer, Electronic Records Archivist(s), Transparency Committee, Records Analysis section, Records Processing section, and Reference team all contribute to the oversight and management of the digital preservation function and lifecycle of digital content. The director of the Utah State Archives and Records Service evaluates high-level policy documents and reviews programmatic plans and progress.

4.4 Selection and Acquisition

The Utah State Archives actively works with governmental entities to set retention schedules for their records and work to ensure that sound records management principles are applied over the entire life-cycle of a record. If an electronic record has been determined to have permanent historic value, the Utah State Archives actively works with the creating governmental entity to ensure that it is properly managed and submitted to the Archives for permanent retention in the institution's digital preservation system.

4.5 Access and Use

Without the preservation of digital materials, access would not be possible and essential government records would be at risk. Access to preserved digital content is provided using the most appropriate technology available at the time of use. When retaining the look and feel is deemed necessary (emulation), the Archives will seek to enable the original version(s) of the digital objects to be rendered over time. The Archives preservation structure complies with access restrictions as defined in the Utah [Government Records Access and Management Act \(GRAMA\)](#), the [Public Records Management Act \(PRMA\)](#), and other state or federal legislation. Appropriate preservation plans for rendering the original, authentic version(s) possible may be devised on a submission-by-submission basis, and revised as necessary.

4.6 Challenges

There are recognized challenges in implementing an effective and enduring digital preservation program, including:

- **Rapid growth and evolution**: Technology that enables the variety of formats and dissemination mechanisms changes rapidly. As information technology evolves, new digital content types, new capabilities, and new preservation challenges emerge and existing digital content faces the risk of obsolescence. Establishing a program that is responsive to this change is a large, ongoing challenge.
- **Sustainability**: The need for effective cost models and an affordable program is widely acknowledged. The scale is based on the level of commitment. The program should reflect reasonable expectations of requisite resources (i.e., the Archives should not promise more than can be delivered).
- **Content provider partnerships**: Working with the governmental entities who provide content to employ appropriate provisions prior to the transfer and deposit of content to the digital preservation system will better facilitate future preservation efforts.
- **Enabling full preservation**: Moving from well-managed digital collections to preserved collections in the true sense of the term requires ongoing institutional effort, partnership development, and financial commitment.
- **Flexibility**: To respond to evolving technological capabilities and changing user expectations, the Archives must continually revise dissemination definitions, which will

allow for the delivery of information to an expanding array of content delivery platforms.

- Education: Training and awareness will be provided for all staff since they contribute directly, and indirectly, to the digital preservation function. The Archives is committed to providing appropriate training for, and raising awareness about, digital preservation issues and developments both for its internal staff and for the broader community of digital content producers, information professionals, and users.

5. Financial Sustainability

The Utah State Archives has identified specific resources to support and augment its digital preservation function(s).

5.1 Institutional Commitment

To sustain its digital preservation function, the Archives has allocated a portion of its operational budget to digital preservation services. In addition, the Archives will continually seek external partnership funding to extend its digital preservation scope and capabilities.

5.2 Cooperation and Collaboration

The Archives is committed to collaborating with other institutions to:

- Advance the development of the digital preservation program.
- Share lessons learned with other digital preservation programs.
- Extend the breadth of its available expertise.
- Extend the digital content that is available within a broad information community to users through cooperative efforts.

6. Technological Support Levels

The following guidelines distinguish the broad levels of support effort the Utah State Archives will use to address its stated objectives. Support effort and preservation strategy is guided by a number of appraisal criteria, including uniqueness, relative risk of loss, and feasibility/cost of preservation.

Staff archivists, who provide expertise on the enduring value of content, in consultation with record analysts and system administrators, make these decisions.

- **Highest Support Level**
 - All effort will be made to ensure long-term preservation for digital objects identified under this level. A high level of available resources (staff, technologies, funding) will be considered for use. In addition to fundamental support level treatment, strategies employed here may include migration, emulation, normalization, and the development of material-specific solutions.

- **Fundamental Support Level**
 - All reasonable effort will be made to ensure long-term preservation for digital objects under this stewardship level. A moderate level of available resources (staff, technologies, funding) will be considered for use. Treatment strategies will be selected from widely available best practices and may include fixity, validation, geographic replication, and others as developed.

7. System Security

The processing procedures for digital content at the Utah State Archives actively address the need for ensuring the accuracy and completeness of digital content through the careful comparison of documentation and data submitted and the generation of metadata and documentation for data. The Archives ensures the authenticity and integrity of its digital content through the active and ongoing use of checksums from receipt of digital content onward. In addition, the Archives conducts periodic reviews and audits of its digital content in archival storage.

8. Procedural Accountability

As a proponent of sound digital preservation practice, the Utah State Archives is committed to transparency in its policies and operations and has established a program to develop, promulgate, and maintain a comprehensive set of policies, procedures, and protocols.

8.1 Audit and Transparency

The Archives is committed to a two-year cycle of self-assessment and a five-year audit cycle to evaluate, measure, and adjust the policies, procedures, preservation approaches, and practices of the digital preservation function. In addition, the Archives is committed to the a five-year strategic planning cycle that will monitor digital preservation systems on an ongoing basis and seek to address major changes to the system in ways that uphold system accountability and sustainability.

8.2 Policy Framework Administration

This digital preservation policy framework was completed in the summer of 2015, was approved and endorsed by the Utah State Archives Electronic Records Committee in September 2015, and was approved and endorsed by the Utah State Archivist in October 2015. The Archives will review the framework every two years to ensure that it remains current and comprehensive as the digital preservation functions of the institution evolve.

8.3 Definitions

Please see the Utah State Archives *[Glossary of Digital Preservation Terms and Concepts](#)* for a current set of definitions of terms used in this digital preservation policy framework and employed to describe the digital preservation functions at the Archives.

8.4 References

This digital preservation framework is adapted from the model framework developed and made [available online](#) by the University of Minnesota Libraries, and the model framework developed and shared online by Nancy Y. McGovern, an international expert and educator in digital preservation. The McGovern model can be accessed on the ICPSR Data Management and Curation [website](#).