



Digits Fugit ... or

... Preserving Digital Materials
Long Term

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Our Presentation

1. The need for digital preservation.
2. What can we do now?
3. Utah Digital Preservation.
4. Questions.



1. Digital Preservation

The Need . . .



Digital Preservation Definition:

- Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content....
- The goal of digital preservation is the accurate rendering of authenticated content over time.

ALA – Digital Preservation Medium Definition



Preservation Timeframe

- A document that cannot be accessed, read and used in 20 years from now is a lost document.

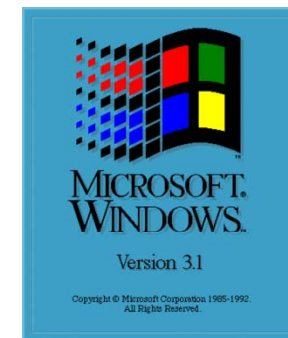
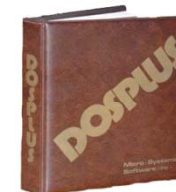
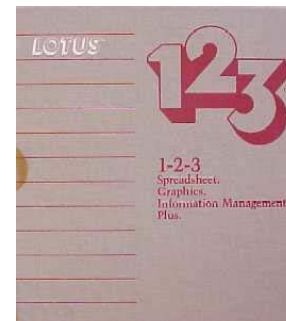
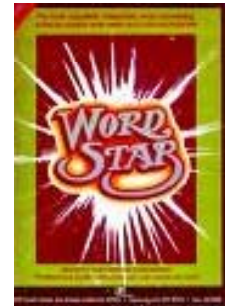
Establishing a Digital Preservation Strategy. TASI. 2004.



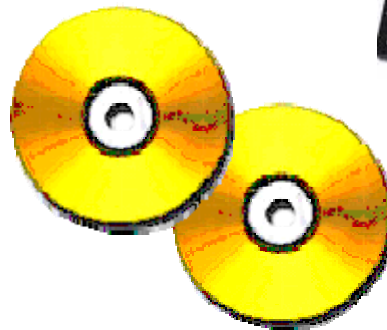
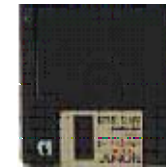
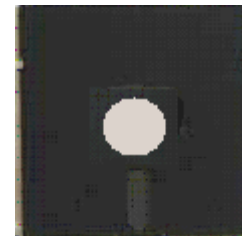
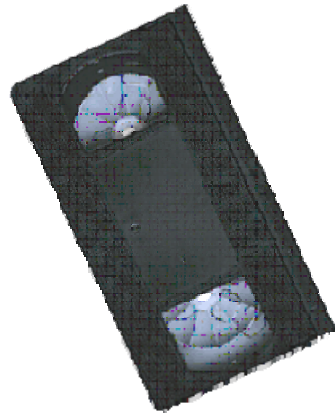
What is the Problem?

- Longevity
- Obsolescence
 - Hardware
 - Software
 - Formats
- Media aging / Media failure
- Storage and Handling
- Organizational challenges

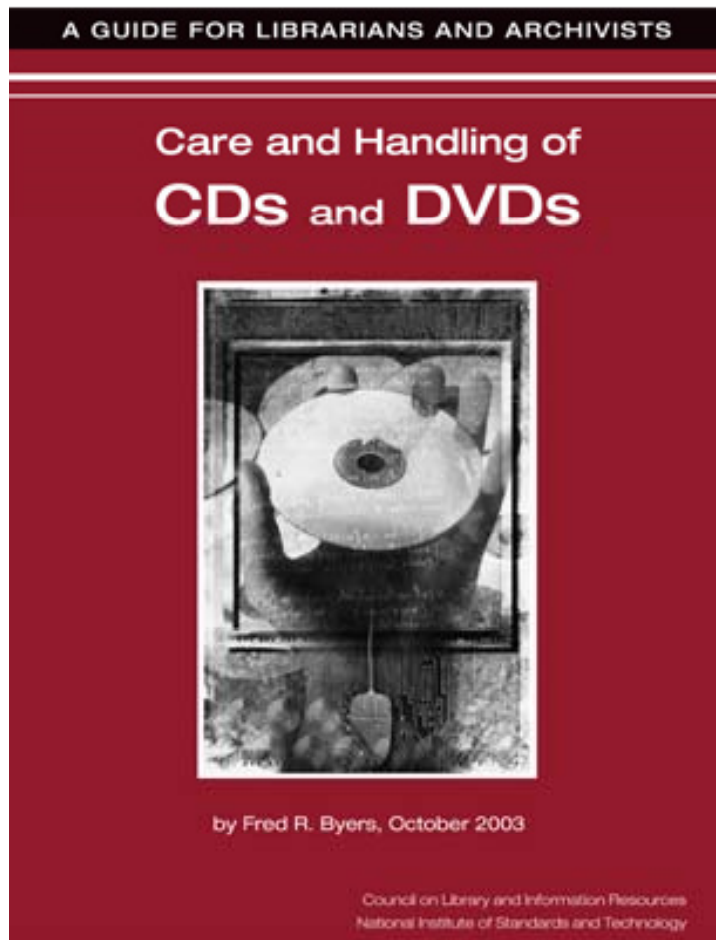
Hardware / Software Obsolescence



Media / Format Obsolescence



Media Storage / Handling



Care and Handling of CDs and DVDs: A Guide for Librarians and Archivists

by Fred R. Byers

October 2003

Store upright in cases
Avoid heat, humidity, light,
fingerprints, dust, solvents,
scratches, moisture, labels
Check regularly
Migrate as needed



What are the Solutions?

- Currently no simple solution
- Technical
- Procedural / Organizational



What are the Solutions?

- Technical
 - Manage the Technology
 - Use Open formats and Standards
 - Use the Best Media Available
 - Preservation Metadata
 - Security / Authenticity



What are the Solutions?

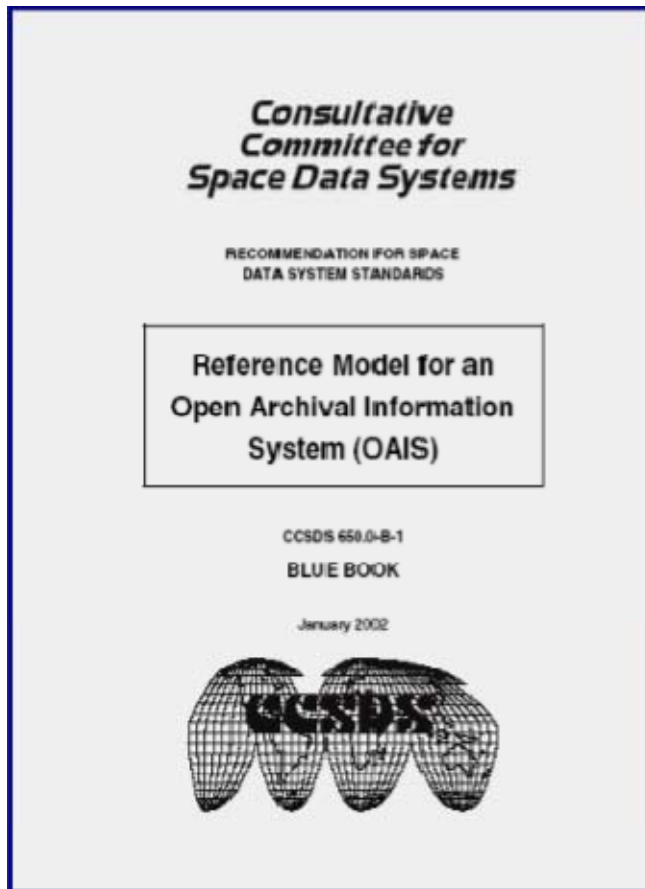
- Procedural / Organizational
 - Develop internal processes & strategies
 - Monitor and Migrate
 - Follow best practices /guidelines
 - Lots Of Copies
 - Organizational support
 - Collaborate with others



Digital Preservation Standards

- OAIS Reference Model
- Attributes of a Trusted Repository
- PREMIS – metadata guidelines

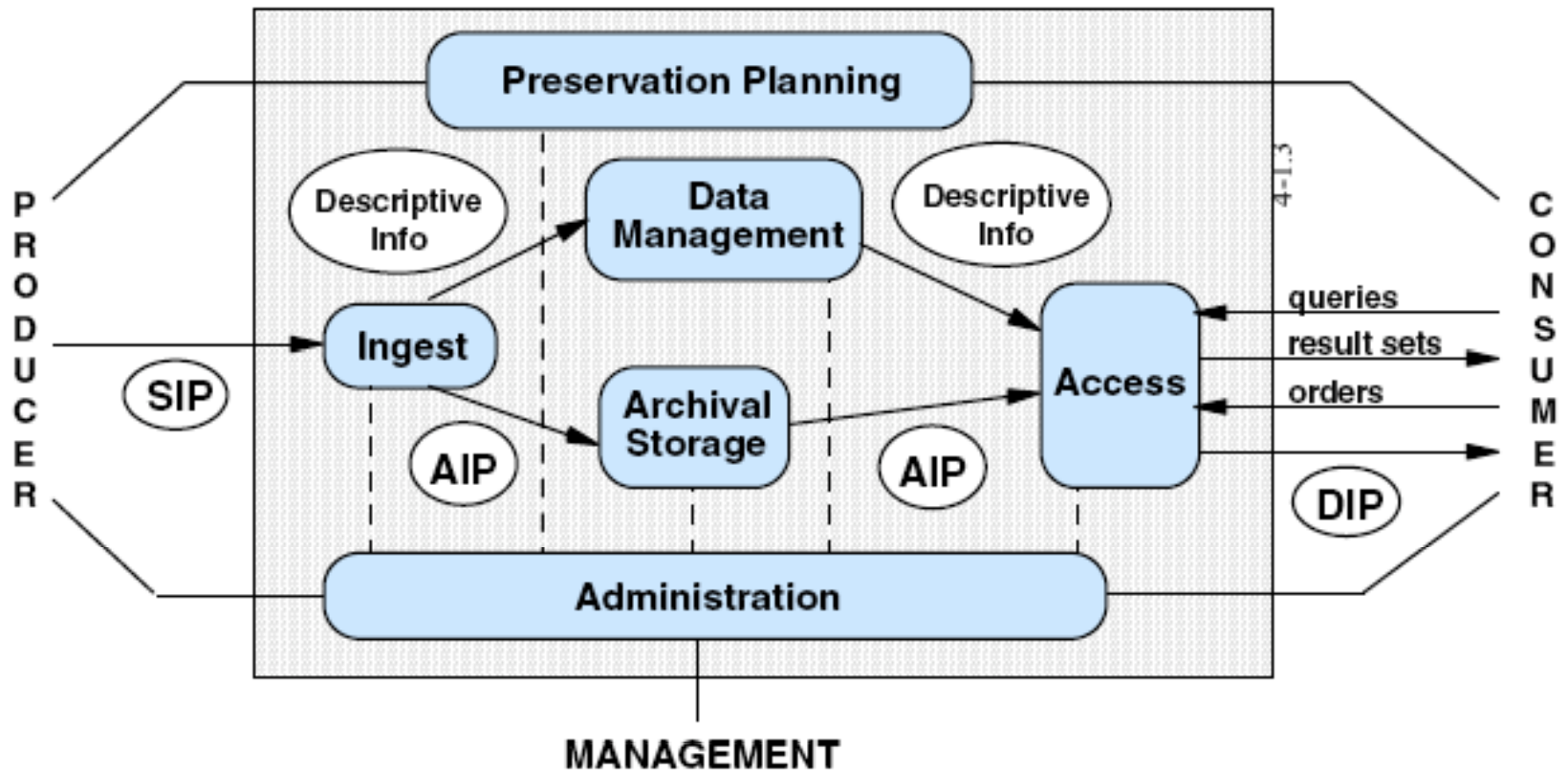
Open Archival Information System



- OAIS Reference Model
- ISO Standard
- Archival Framework
- Designated Community
- Long-Term Preservation
 - Concern about impact of changing technologies
- Framework of concepts
- Common Terminology
- Organization responsibility
- Digital and Analog items
- Allows Comparisons

<http://nost.gsfc.nasa.gov/isoas/>

OAIS Reference Model





Attributes of a Trusted Repository



- RLG & OCLC
- Digital Repository
- Long-Term Access
- Organization responsibility
- Managed Resources
- Property Rights
- Technical Strategies
- Define Metadata Needed
- Certify Repositories
 - Audit Checklist (TRAC)
 - Authenticity

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

PREMIS: Preservation Metadata



- Preservation Metadata
- Define Metadata Needed
 - Intellectual Objects
 - Property Rights
 - Data Objects
 - Entities
 - Agents
- Data Dictionary
- XML Schema

<http://www.loc.gov/standards/premis/v2/premis-2-0.pdf>



For More Information - Handout

Organizations:

- [Library of Congress Digital Preservation Program](#)
- [LC Digital Preservation Resources](#)
- [National Archives: Strategy for Digitizing Archival Materials](#)
- [Blue Ribbon Task Force](#)

Tutorial:

- [Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems](#)

Where to read more:

- [D-Lib Magazine](#)
- [ALA Digital Preservation Definitions](#)
- [Establishing a Digital Preservation Policy](#)
- [PADI : gateway to international digital preservation resources](#)
- [Digital Preservation Matters](#)

- Digits Fugit, or Preserving Digital Materials Long Term is available at:



2. Digital Preservation

What can we do NOW?



What can we do NOW?

- Assess & organize collections
- Policy and Procedures
- Preservation Metadata
- Backup and Redundancy



Assess Collections

- Where are the master files held?
- How to prioritize archival collections
- Basic organization of archival files (CONTENTdm, etc.)



CONTENTdm Archival Files

- CDM v. 4.3 Full Resolution Manager
 - Creates path between display & archival image
 - Accessible by collection manager only OR viewer
- CDM v. 5 Archival Files Manager
 - Separate from display image generation
 - Disabled for new collections by default
 - When enabled, all files are added to a volume when imported from project client
 - Digital Archive compatibility

Current collection: Utah State Historical Society - Full Res Project [change](#)

Collection configuration

View and edit the collection profile and settings, including full resolution and PDF conversion. To view and configure the metadata fields for this collection (and to enable full text searching), see [fields](#).

Profile & permissions		edit
Collection name	Utah State Historical Society - Full Res Project	
Collection alias	/ushs_fullR	
Directory name	g:\ushs_fullR	
Collection status	Published	
Permissions		
User name		
IP address		
Require permissions	For metadata and items	
Collection description		
Collection description undefined.		

Optional collection settings		edit
PDF conversion	Do not convert multiple-page PDF files to compound objects	
Full resolution enabled	Yes	
Full resolution settings		view volume list
Volume size	3.95GB	
Default display image size in pixels	800x600	
Default archive image size in pixels	3200x2400	
Volume name prefix	Volume	
Display location in	Administration interface only	



Policies and Procedures

- What to save, for how long and on which formats?
- Document an organization's commitment to preservation
- Specify file formats to be preserved
- Ensure compliance with standards and best practices (OAIS, TRAC)



Preservation Metadata

Information that supports and documents the digital preservation process.

It stores technical details on format, structure and use of digital content, history of all actions performed on the resource...

[National Library of Australia. Preserving Access to Digital Information.](#)



Preservation Metadata

- Provenance
- Authenticity
- Preservation Activity
- Technical Environment
- Rights Environment

[Library of Congress. PREMIS: Preservation Metadata Maintenance Activity.](#)



Preservation Metadata

- Dublin-Core Best Practices
 - Recommended vs. Strongly recommended
- Digitization Specifications
 - Creation hardware
 - Creation software
 - Operating system
 - Master file type
 - Master file size
 - Checksum value
 - And more...



Backup and Redundancy

- Develop backup strategies!
 - Document your strategies
- Perform trial restorations!
- Retain copies?



Backup and Redundancy at MLIB

- Storage Area Network (SAN)
 - Weekly backup
 - Incremental daily backup
 - Tapes sent to offsite vault once a month



What's Next?

- OCLC Digital Archive
- MetaArchive

OCLC Digital Archive

Digital Archive

Secure, managed storage for digital preservation

AT A GLANCE

- Automated monitoring and reports
- Simple, straightforward workflows
- Optional integration with CONTENTdm for preservation and presentation

[View complete at a glance >>](#)

[Download the brochure](#)

NEWS

- OCLC's new Web Harvester captures Web content to add to digital collections
- OCLC's Digital Archive Service Offers Long-Term Storage for Digital Collections
- OCLC offers Digital Archive service for long-term storage of libraries' digital collections

[More news >>](#)

The Digital Archive provides a secure storage environment for you to easily manage and monitor the health of your master files and digital originals.

It provides a foundation for digital preservation of all your digital collections. It stores master files and digital originals in a secure, managed and separate environment whether you've built your digital collections using CONTENTdm or another local access repository.

Secure, managed storage

The Digital Archive is a specially designed system in a controlled operating environment dedicated to the ongoing managed storage of digital content. We have developed specific systems process and procedures for the Digital Archive tuned to the management of data for the long term.

Automated monitoring and reports

From the time your content arrives, our systems begin inspecting it to ensure that what you put up is what you'll get back in the



OCLC Digital Archive

- Systems management
- Physical security
- Data security
- Data backups
- Disaster recovery
- ISO 9001 Certification
- Automated monitoring and reports
- No migration services

MetaArchive



[About MetaArchive](#)

[Current Networks](#)

[Resources](#)

[Tech Tools](#)

[Events](#)

[News](#)

[Contact](#)

[Join Us](#)

[All about Distributed Digital Preservation >](#)

[All about Private LOCKSS Networks >](#)

THE GREATEST THREAT

to digital assets is not fire, flood or theft. It's the assumption that cultural heritage institutions have taken the steps needed to preserve them.

Most often, we haven't. Which is why the [MetaArchive Cooperative](#) is leading a national effort to embrace [distributed digital preservation](#), the future practice of digitally safeguarding the very items that define our culture and identity. [MORE >](#)

[MetaArchive Cooperative receives \\$1.2 M in support of additional research and development for its distributed digital preservation services >](#)

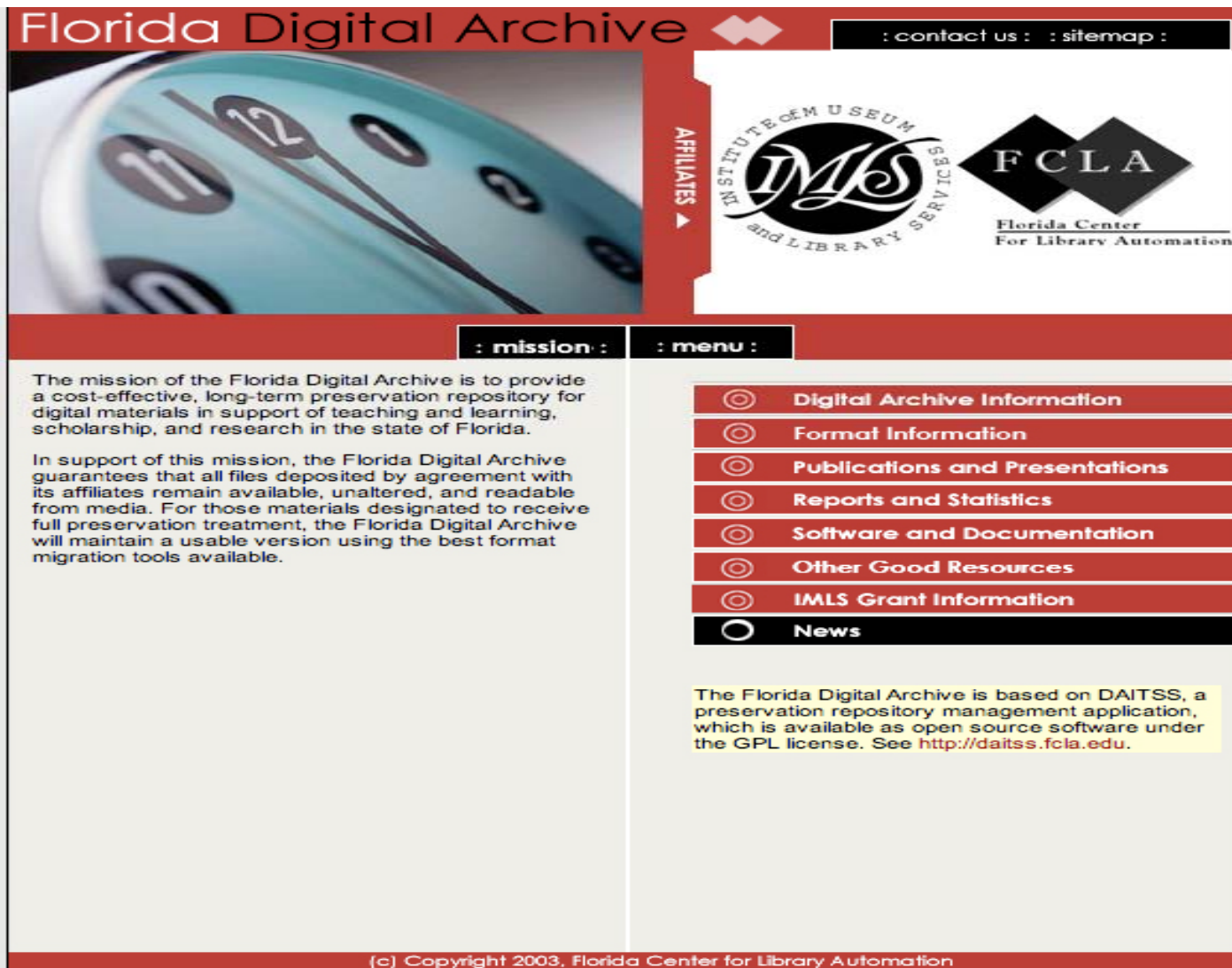
[Other news >](#)



MetaArchive

- Cooperative Organization
- Distributed digital preservation
- Technical framework based on LOCKSS software
- Collections stored on secure file servers in multiple locations
- Servers check each file and repair when necessary
- BCR grant proposal for MetaArchiveWest

Florida Digital Archive



The screenshot shows the Florida Digital Archive website. At the top, there is a red navigation bar with the site title and links for contact and sitemap. Below this is a main content area with a large image of a clock face on the left and a sidebar for affiliates on the right. The main content area is divided into a mission statement and a menu. The mission statement describes the archive's goal of providing a cost-effective, long-term preservation repository for digital materials. The menu lists various resources such as Digital Archive Information, Format Information, Publications and Presentations, Reports and Statistics, Software and Documentation, Other Good Resources, IMLS Grant Information, and News. At the bottom, there is a footer with copyright information.

Florida Digital Archive

: contact us : : sitemap :

AFILIATES

INSTITUTE OF MUSEUM and LIBRARY SERVICES

FCLA
Florida Center
For Library Automation

: mission : : menu :

The mission of the Florida Digital Archive is to provide a cost-effective, long-term preservation repository for digital materials in support of teaching and learning, scholarship, and research in the state of Florida.

In support of this mission, the Florida Digital Archive guarantees that all files deposited by agreement with its affiliates remain available, unaltered, and readable from media. For those materials designated to receive full preservation treatment, the Florida Digital Archive will maintain a usable version using the best format migration tools available.

- Digital Archive Information
- Format Information
- Publications and Presentations
- Reports and Statistics
- Software and Documentation
- Other Good Resources
- IMLS Grant Information
- News

The Florida Digital Archive is based on DAITSS, a preservation repository management application, which is available as open source software under the GPL license. See <http://daitss.fcla.edu>.

(c) Copyright 2003, Florida Center for Library Automation



What's Next at BYU?

- Portico – Digital Archive
 - eJournals
 - Local Content
- Millenniata - The Millennial Disc™
- OCLC Digital Archive



3. Digital Preservation

Utah Digital Preservation. . .



4. Questions?

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2009

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