Long-term Repositories: Taking the Shock out of the Future
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National Library of Australia

Sustainability through Interoperability:
PREMIS, Fedora and DSpace

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DSpace

- Open source repository software
- Out-of-the-box application, current release: v1.4
- Provides a plugin interface for content ingestion and dissemination
- Provided by default:
  - DSpace METS Profile package ingester and Disseminator
  - MODS, DC, QDC and PREMIS crosswalks
PREMIS Support

- Minimal support for the PREMIS data dictionary
- Policy/globally applicable information not incorporated
- Preservation Rights
- Events (i.e. object history) currently under re-development
- Flaws in format determination (JHOVE, DROID and format registries are the way forward)
- PREMIS Crosswalk (bitstream-level only) for use in ingest and dissemination
Repository Interoperability

- Common DIP/SIP specification
- Crucial for object sustainability
- What happens when you need to change your repository software
- What happens when the custodian of a set of objects changes
- How to support replication, share or exchange objects across repository platforms
- Repositories cannot support an ingest module for every possible source, or dissemination module for every target
Importance of an open standards based interchange model cannot be understated

Will allow **meaningful** exchange of repository objects

If widely adopted could provide an exit strategy and means for repositories to share (federate) or exchange materials

Can provide a specification for external parties preparing materials for deposit

At a technical resource level, promotes re-usable software (write once, used by many)

Challenge: Needs to be prescriptive for implementors while at the same time able to support a wide range of use cases
Possible Implementations

- Direct support for NLA METS ingest and disseminate within repository
- Transform layer within repository ingest/disseminate workflow (NLA METS to accepted format or vice versa)
- Institutional contracts to support meaningful deposit/export
- Harvesting model
- JSR170 API coupled with Common Web Services
DEMO

DSpace/Fedora Object exchange using NLA METS
Fedora exports an object (plus derivatives and all metadata) in Fedora METS which is transformed into NLA METS

From the DSpace Servlet clicking “Ingest” ingests the NLA METS package into DSpace

DC is mapped to DSpace DC, other metadata is kept in bitstreams with MDTYPE as the bitstream description

Derivatives are assigned to appropriate DSpace bundles
Demo (static pages)
DSpace to Fedora

- From DSpace Servlet clicking “Disseminate” creates an NLA METS package for the master image and its metadata only
- NLA METS transformed into a Fedora METS package
- Fedora ingests Fedora METS and generates derivatives
Title: George V mounts an elephant

Date Created: 6-Jan-2004

Publisher: Australian National University

Description: George V mounts a seated elephant from the rear. The elephant has a pad but no howdah.

URI: http://hdl.handle.net/123456789/5548

Appears in Collections: Disseminate

Files in This Item:

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<th>Description</th>
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<th>Format</th>
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<td>80Kb</td>
<td>JPEG</td>
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</table>

View/Open
DSpace-Fedora Object Exchange Demo

Handle: 123456789/

Clicking this button will ingest a Fedora object to the collection with the above handle, and once complete will take you to the collection to verify a successful import.

Clicking this button will disseminate the item with the above handle into NLA METS and then transform the package into a Fedora-compatible METS manifest.
Title: First breakfast on Lemnos

Publisher: The University of Queensland, Fryer Library

Description: Australian military and medical personnel on Lemnos Island off Gallipoli in late 1915 or early 1916.

URI: http://hdl.handle.net/123456789/5550

Appears in Collections: Ingest

Files in This Item:

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<td>52946Kb</td>
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## Demo: Fedora Metadata as Bitstreams

The image shows a screenshot of the DSpace interface at The Australian National University, demonstrating the metadata and bitstreams associated with a digital object. The table includes columns for file names, file types, and permissions, illustrating how Fedora handles metadata and bitstreams within a digital repository.

<table>
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This interface is a visual representation of how Fedora manages and presents metadata and bitstreams, providing a comprehensive view of the digital object's components within the repository.