HUB AND SPOKE TOOL SUITE

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PREMIS Implementation Fair – 7 October 2009
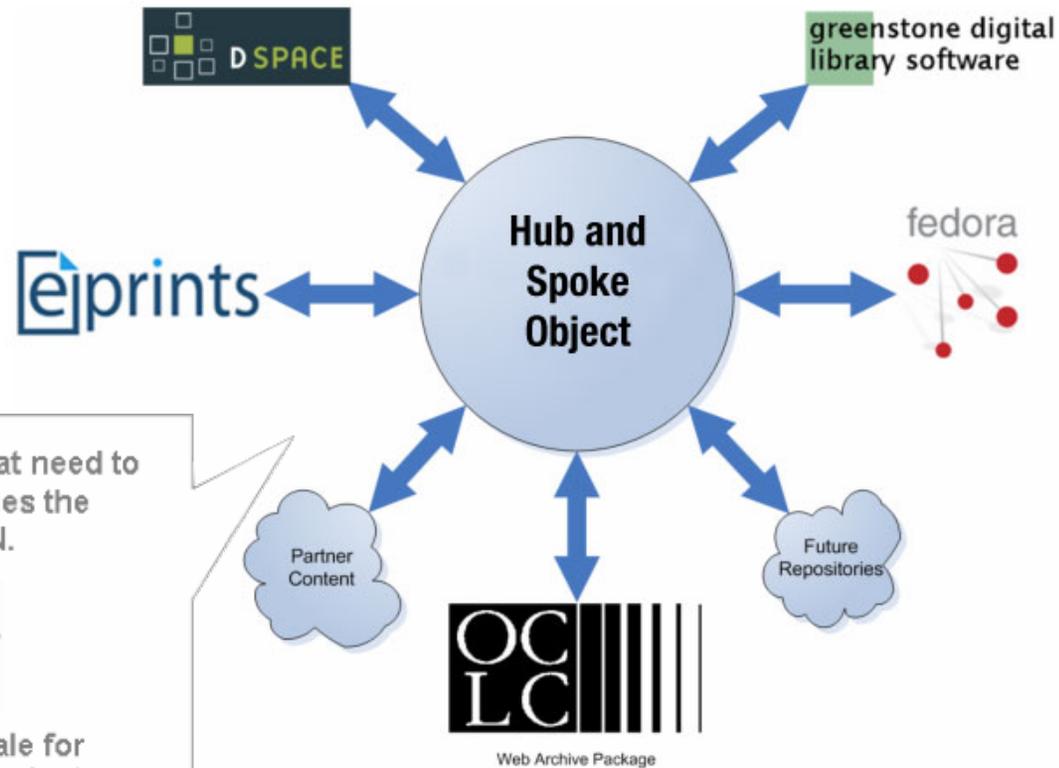
Background on Hub & Spoke

- NDIIPP funded

- Began as repository evaluation – DSpace, Fedora, EPrints, and Greenstone – against an OAIS-based checklist.

- The need arose to build a software test bed to evaluate multiple repository systems with common test data.

- Hub & Spoke tool suite was a natural outcome of the work that went into developing the test bed for repository evaluation.
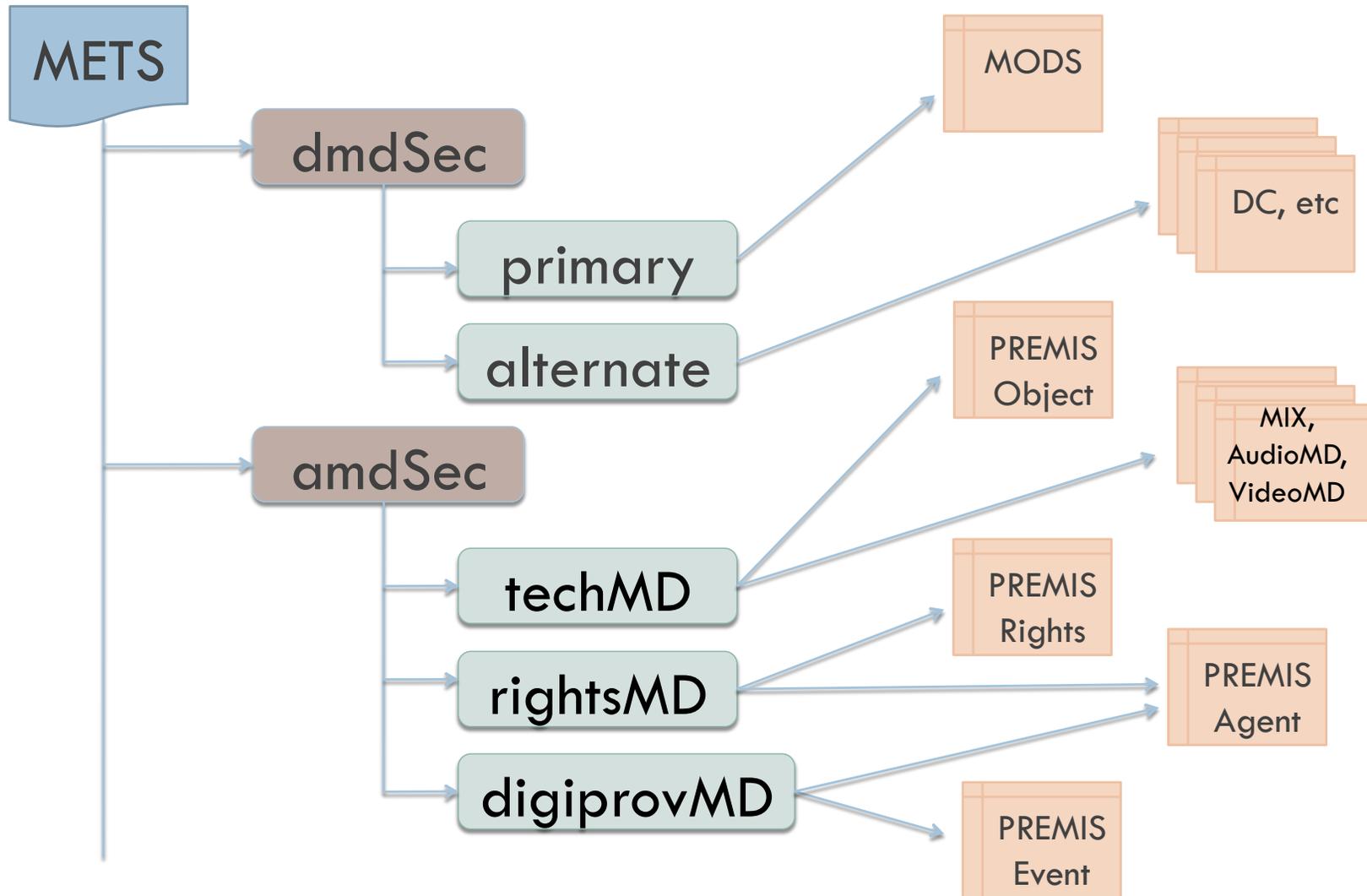
Digital Repository Interoperability

Hub & Spoke METS Profile

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METS-based profile, non-prescriptive with regard to file format or structure, but with special attention given to preservation and technical metadata.
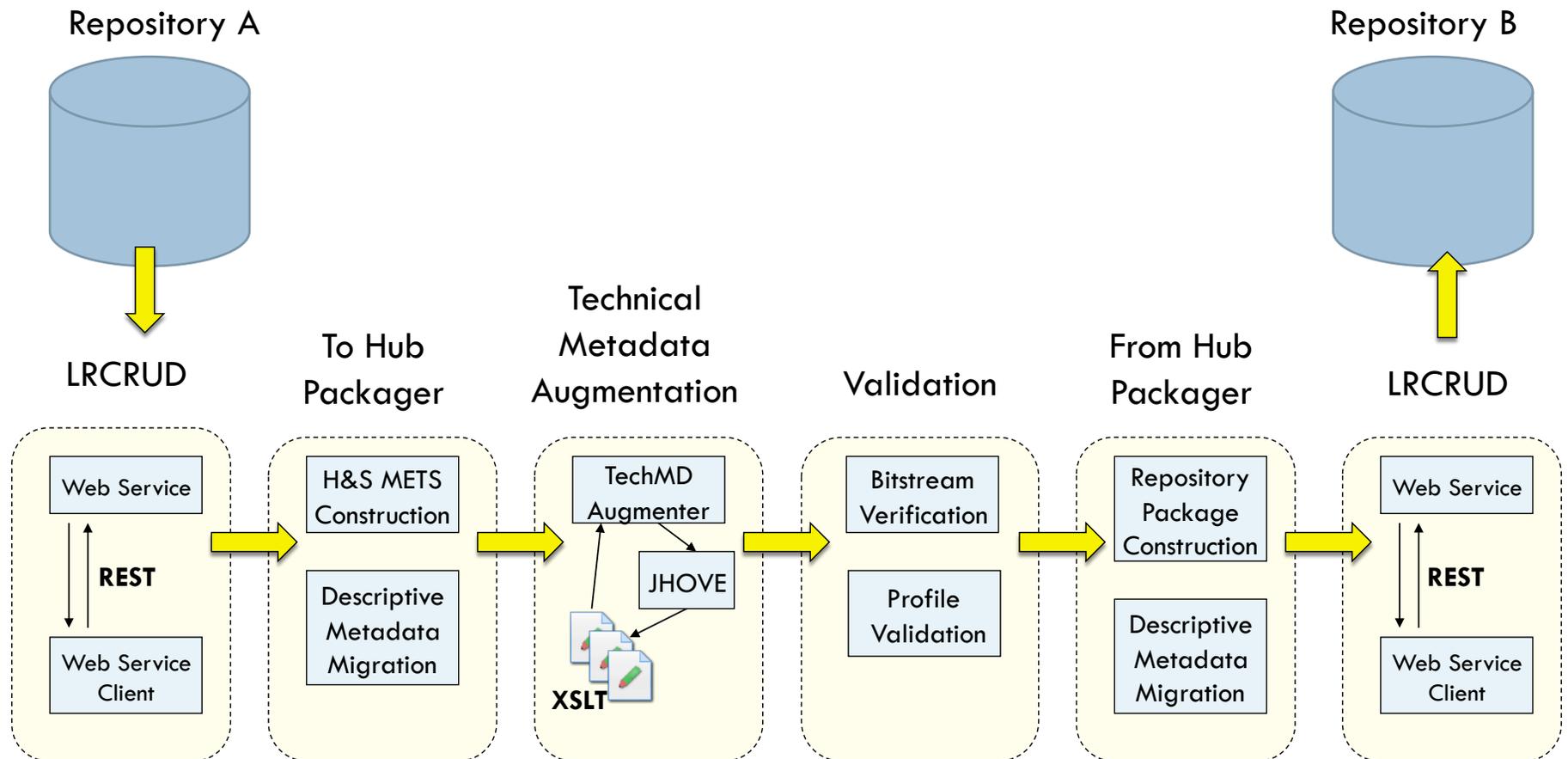
METS Profile – Focus on Preservation

Functional Overview / Workflow

LRCRUD Client & Service

Lightweight Repository Create/Retrieve/Update/Delete

- RESTful Web service API for repositories

- Client integrated into Hub and Spoke tools

- Support for DSpace, EPrints, and Fedora

- Specification and API for extending the tools for other repositories

SIP | Hub & Spoke Tools | LRCRUD Client | REST Calls Create/Retrieve/Update/Delete | LRCRUD Service | Repository-specific calls | Repository

To Hub Packager

- Creates Hub and Spoke object from repository DIPs or from scratch, given content files and metadata

- Support for DSpace, EPrints, and Fedora

- Extendable plug-in architecture for creating new packagers

Repository DIP

To Hub Packager

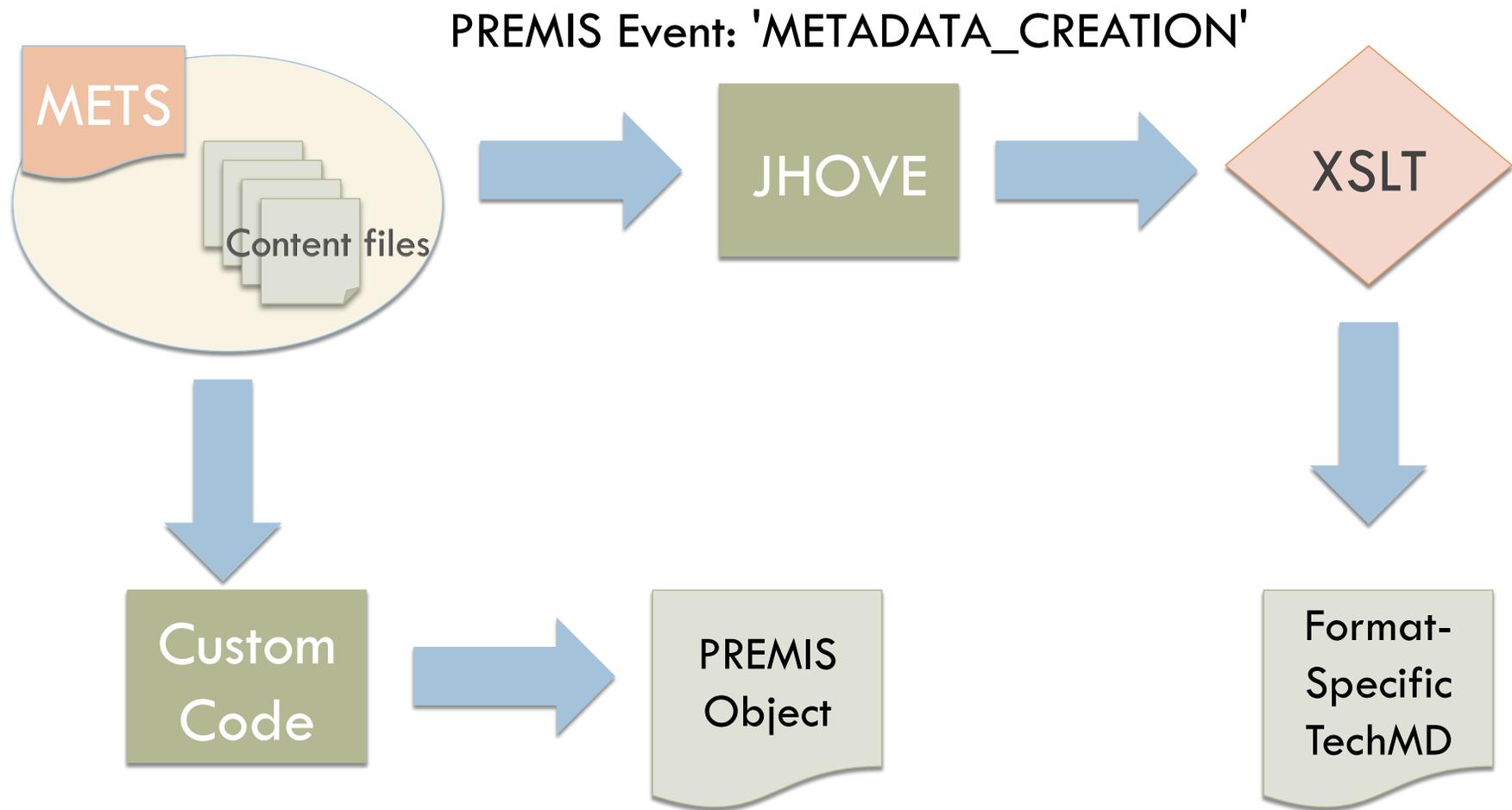Hub Package

Descriptive Metadata

- Descriptive metadata is part of the representation, not just about the representation
- Format conversions expressed as PREMIS Events
- MODS (required) as primary dmdSec
- All others as alternate dmdSec – including intermediate formats

MARCXML T MODS T DC

PREMIS Event: 'METADATA_TRANSFORMATION'

Technical Metadata
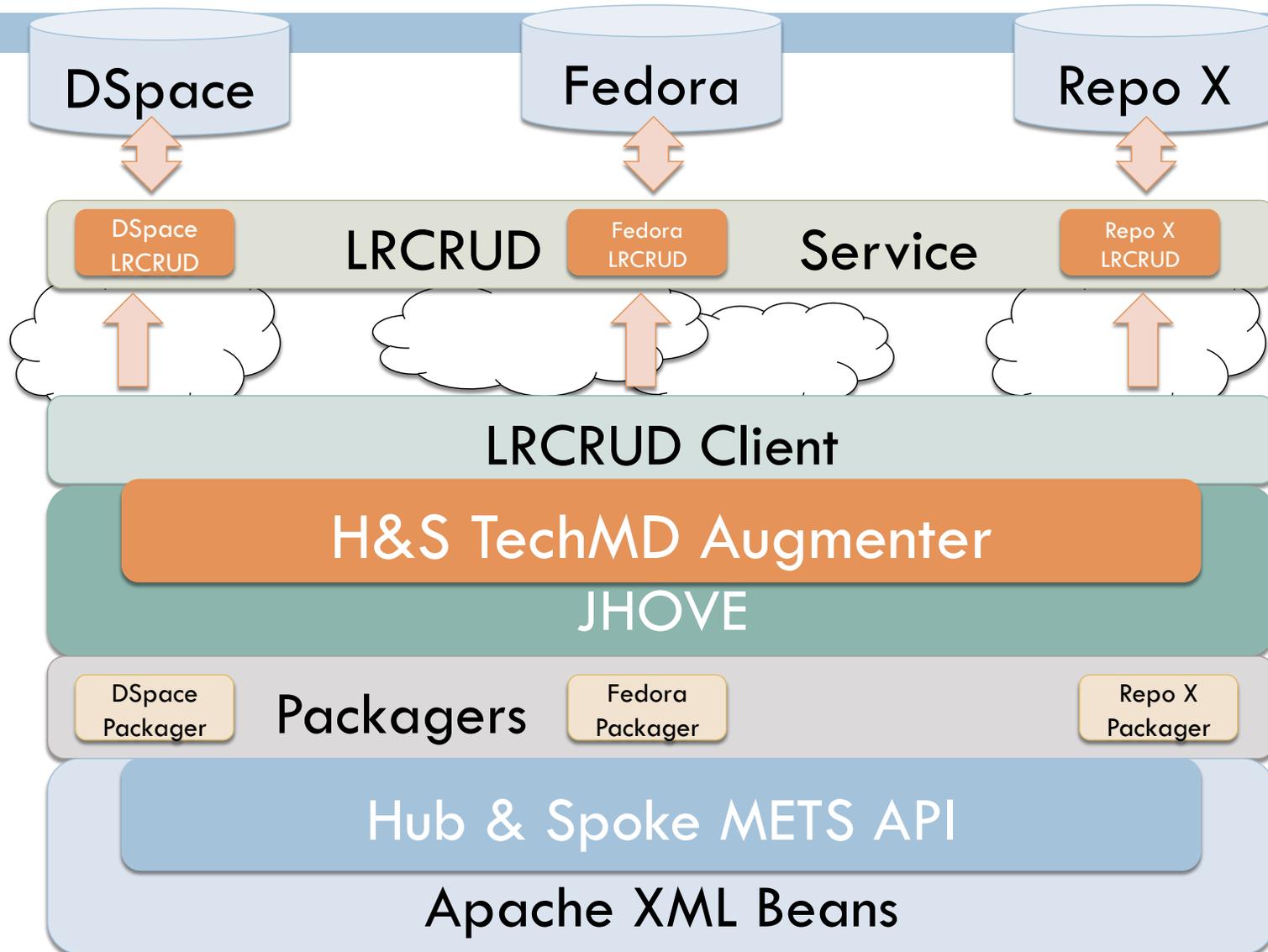
PREMIS Event: 'METADATA_CREATION'

From Hub Packager

- Creates repository SIPs from a Hub Package

- Support for DSpace, EPrints, and Fedora

- Additional packagers for Bagit and SWORD

- Extendable plug-in architecture for creating new packagers

Hub Package

From Hub Packager

Repository SIP

Technical Architecture (Java)

DSpace

Fedora

Repo X

DSpace
LRCRUD

LRCRUD

Fedora
LRCRUD

Service

Repo X
LRCRUD

LRCRUD Client

H&S TechMD Augmenter

JHOVE

DSpace
Packager

Packagers

Fedora
Packager

Repo X
Packager

Hub & Spoke METS API

Apache XML Beans

Links

- Project Home Page
  http://dli.grainger.uiuc.edu/echodep/hands/

- Hub and Spoke METS Profile
  http://www.loc.gov/standards/mets/profiles/00000015.html

- DLF Aquifer MODS Profile
  https://wiki.dlib.indiana.edu/confluence/download/attachments/24288/DLFMODS_ImplementationGuidelines.pdf

Thanks!

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- University of Illinois at Urbana Champaign
- wingram2@illinois.edu
- http://dli.grainger.uiuc.edu/echodep/hands/