Ingest into the Digital Preservation Network: Standard Pipelines

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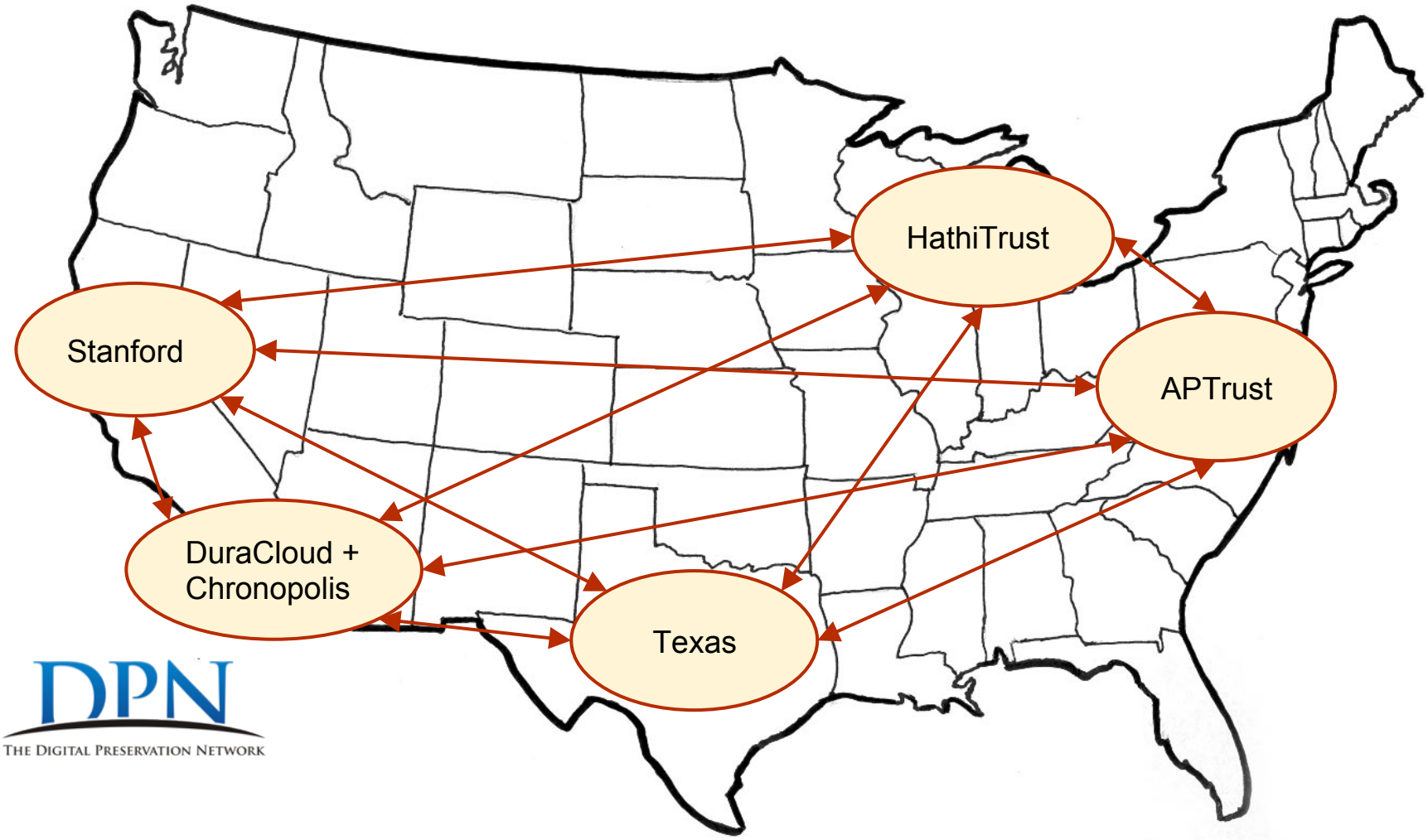
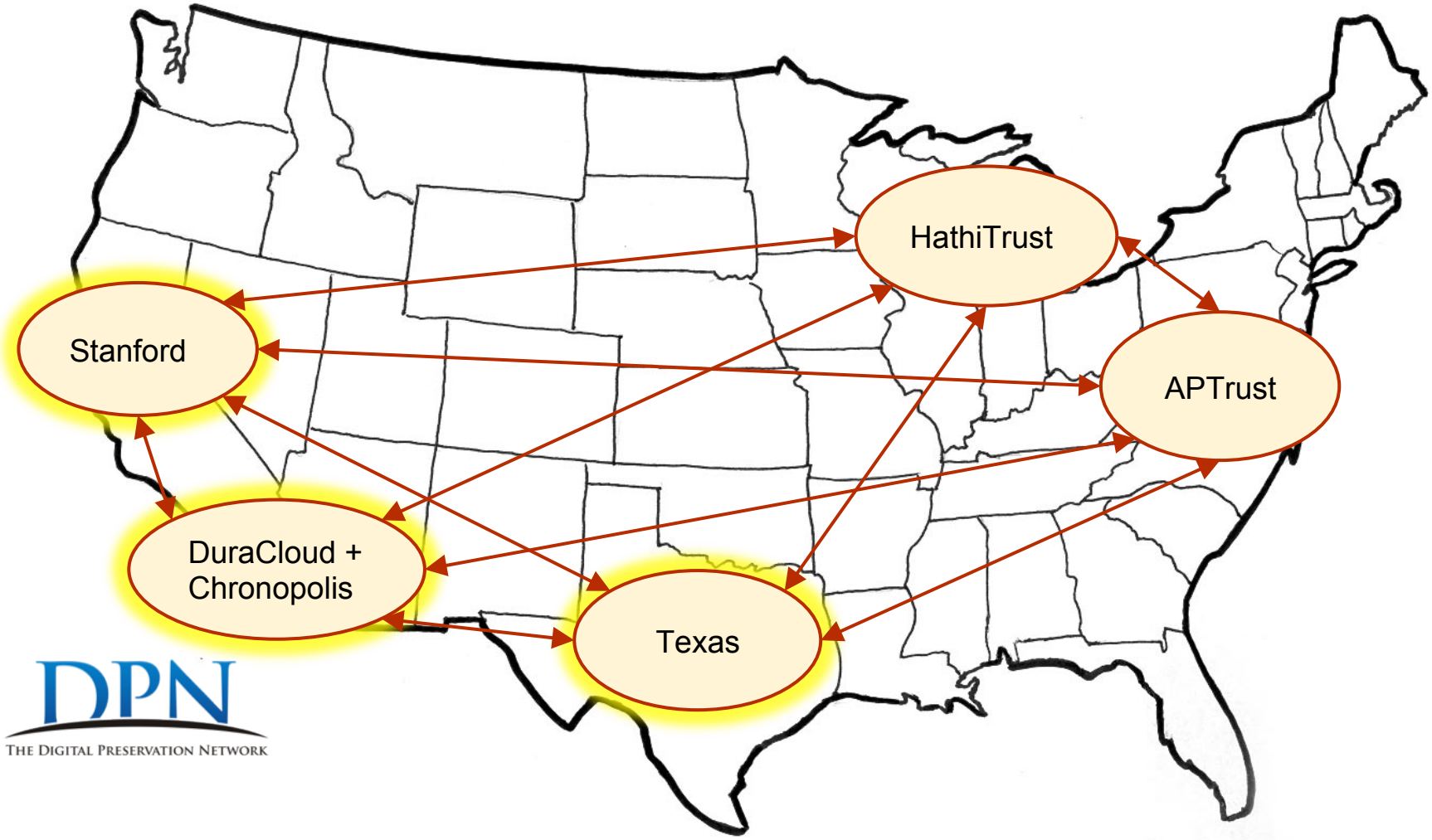
Dan Galewsky - University of Texas Libraries
Tom Cramer - Stanford University Libraries



DPN
THE DIGITAL PRESERVATION NETWORK


HathiTrust
Stanford
APTrust
DuraCloud +
Chronopolis
Texas
DPN
THE DIGITAL PRESERVATION NETWORK

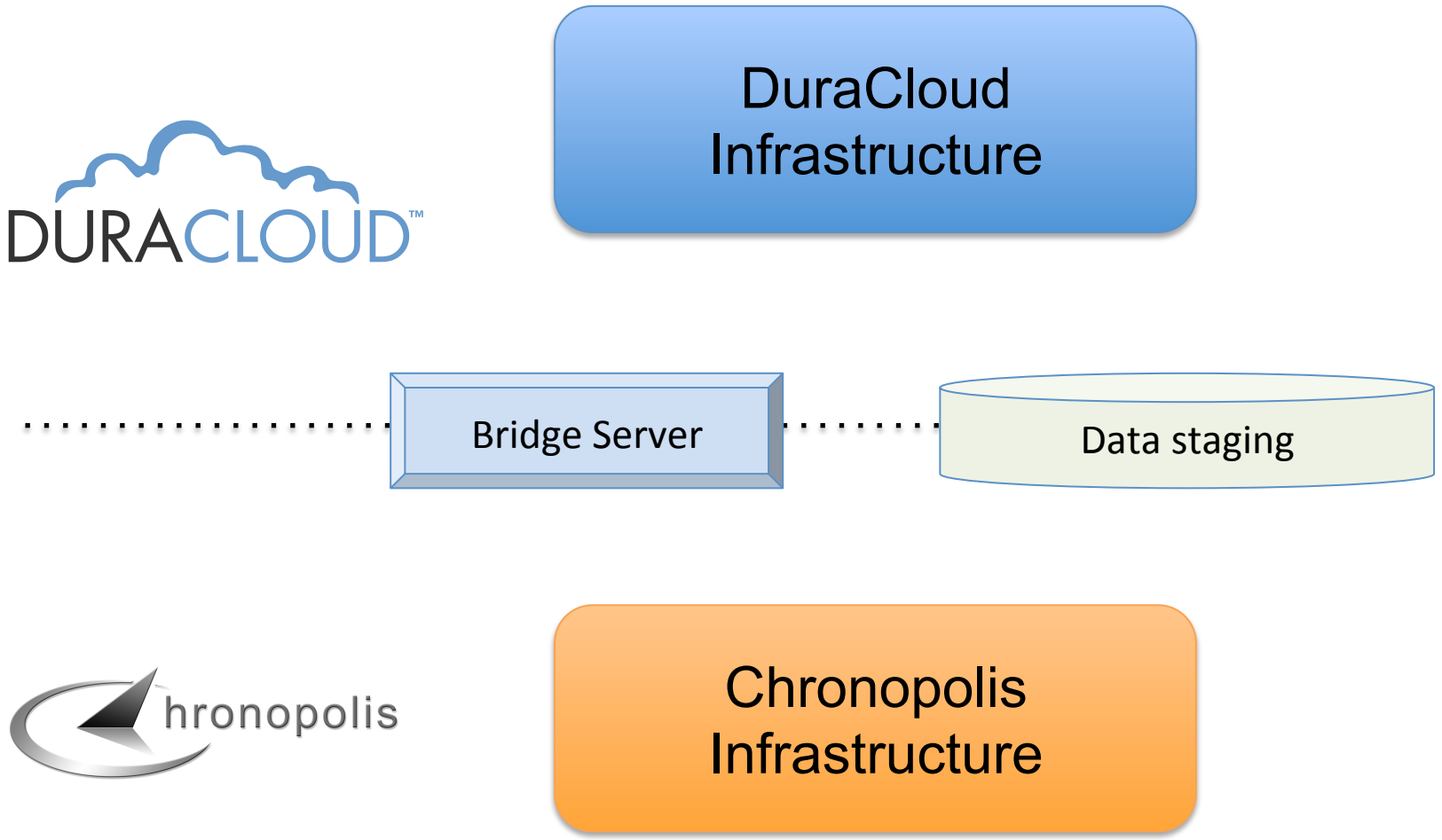
hronopolis

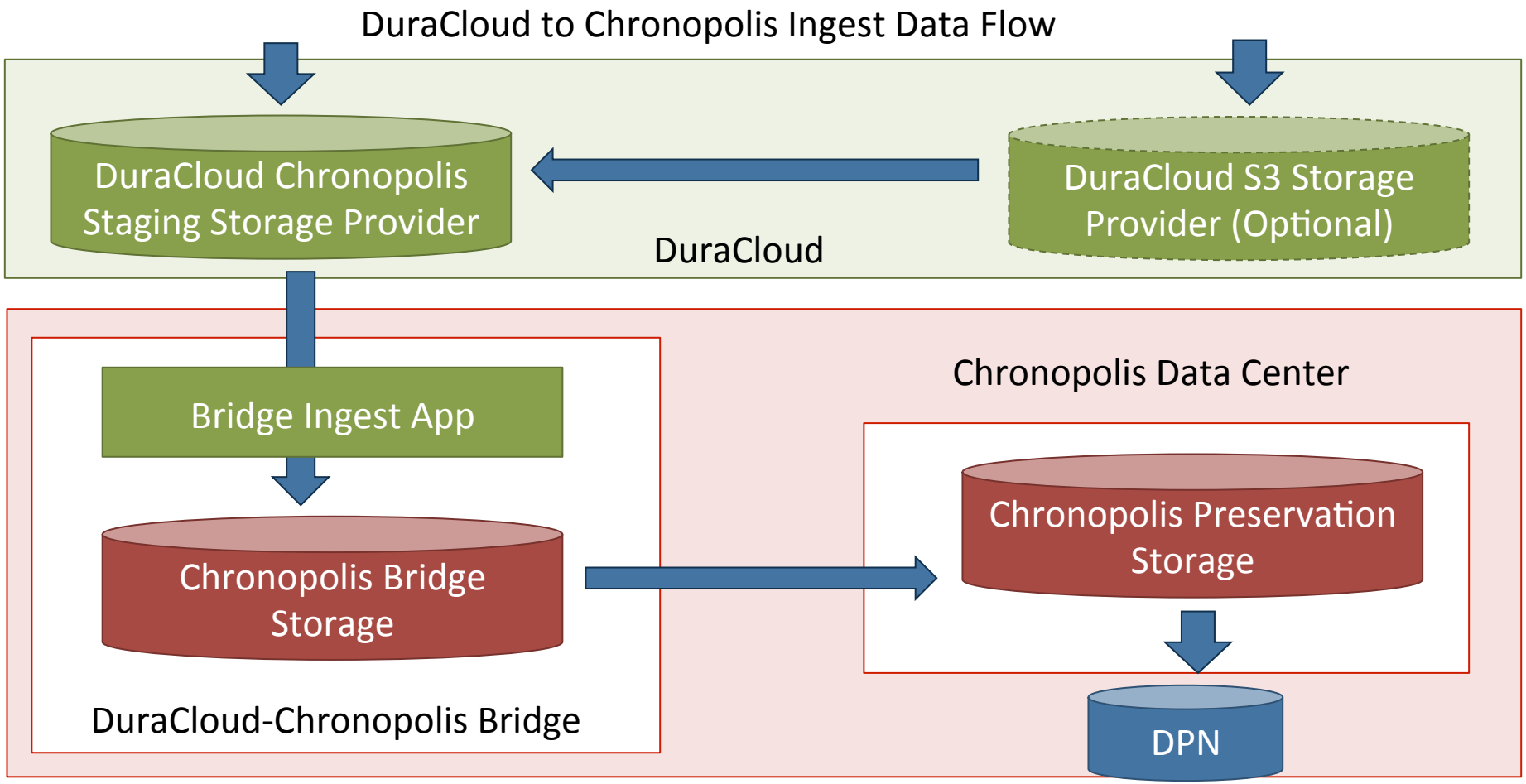
DURACLOUD™

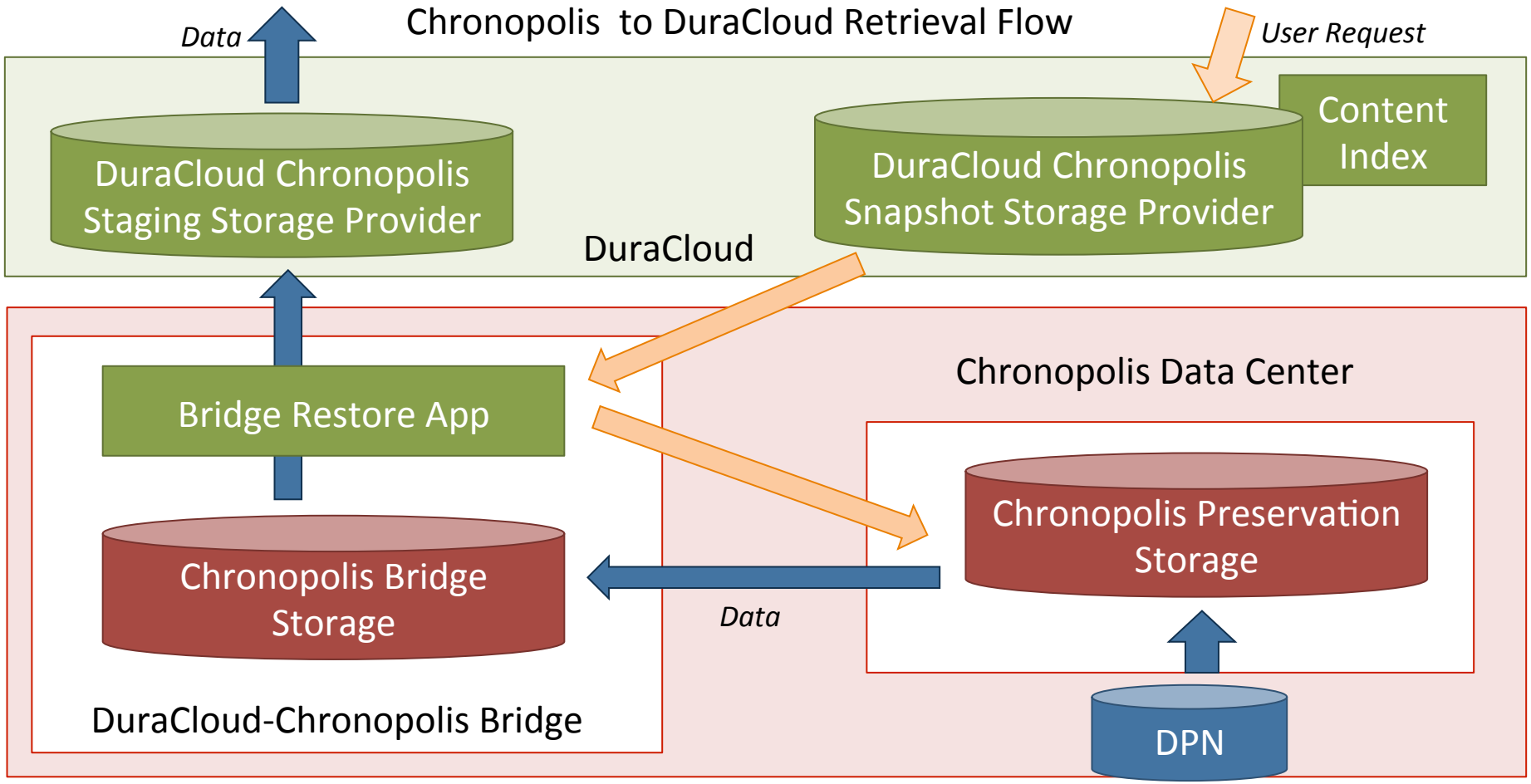
DuraCloud + Chronopolis

Goals:

- Integrate the DuraCloud suite of cloud services with Chronopolis as a DPN node
- Create a node that will provide a simple web-based upload to DPN
- Provide an option that combines cloud-based access with DPN preservation


DURACLOUD™
DuraCloud
Infrastructure
Bridge Server
Data staging
hronopolis
Chronopolis
Infrastructure


DuraCloud to Chronopolis Ingest Data Flow
DuraCloud Chronopolis Staging Storage Provider
DuraCloud S3 Storage Provider (Optional)
DuraCloud
Bridge Ingest App
Chronopolis Bridge Storage
DuraCloud-Chronopolis Bridge
Chronopolis Data Center
Chronopolis Preservation Storage
DPN


Chronopolis to DuraCloud Retrieval Flow
Data
User Request
DuraCloud Chronopolis Staging Storage Provider
DuraCloud Chronopolis Snapshot Storage Provider
Content Index
DuraCloud
Chronopolis Data Center
Bridge Restore App
Chronopolis Preservation Storage
Chronopolis Bridge Storage
Data
DuraCloud-Chronopolis Bridge
DPN

Texas Preservation Node
DSpace/DPN Integration

Introduction

- The Texas Preservation Node is a collaboration between the University of Texas Library (UTL), the Texas Digital Library (TDL) and the Texas Advanced Computing Center (TACC).
- The UTL and the TDL use DSpace as their institutional repository.
- We wanted to explore mechanisms for moving assets from the institutional repository into the DPN network for preservation.
- We wanted to use the web UI built into DSpace.

The Process - Export from DSpace

- We used the DSpace curation system to enable an end user to enter the handle of a collection that was to be sent to DPN.

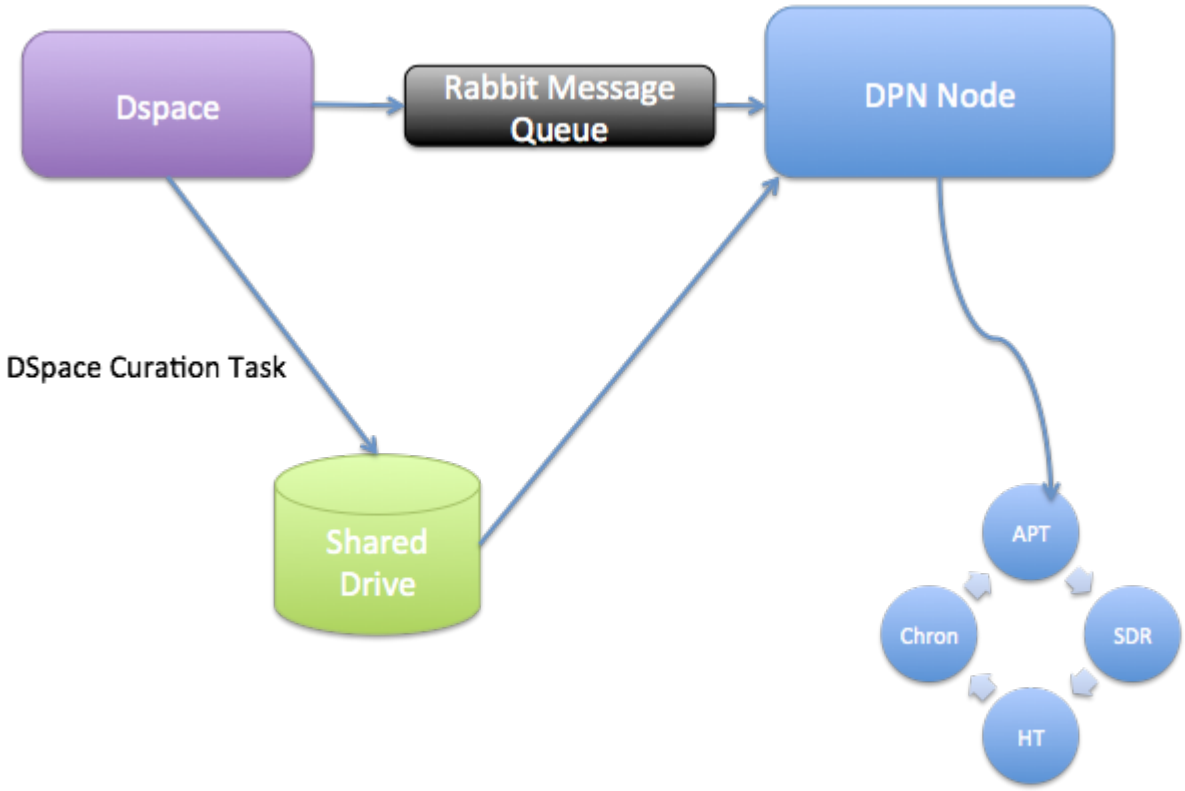
- A DSpace curation task was written that took the handle, exported the assets and notified the DPN node.

- The assets were exported to an NFS volume that was shared between the DSpace server and the DPN node

The Process - Stage for DPN

- After the assets were exported, a message was sent via a RabbitMQ message queue to the DPN node.

- There was a process running on the DPN node - waiting for messages.
  - The process creates a DPN bag from the assets (from the shared NFS volume)
  - Puts a copy of the DPN bag at TACC via iRODS
  - Puts a copy of the DPN bag in the DPN staging area
  - Initiates the transmission of the bag into DPN


Dspace
Rabbit Message Queue
DPN Node
DSpace Curation Task
Shared Drive
APT
Chron
SDR
HT

Conclusion

- The DSpace curation system provided a good way to allow an end user to indicate a collection for transmission to DPN.
- Using NFS and RabbitMQ made it pretty straightforward to move content to the DPN ingestion point and to kick off the process of ingesting content into DPN.
- A technique similar to this could be used for moving assets from any repository into DPN.

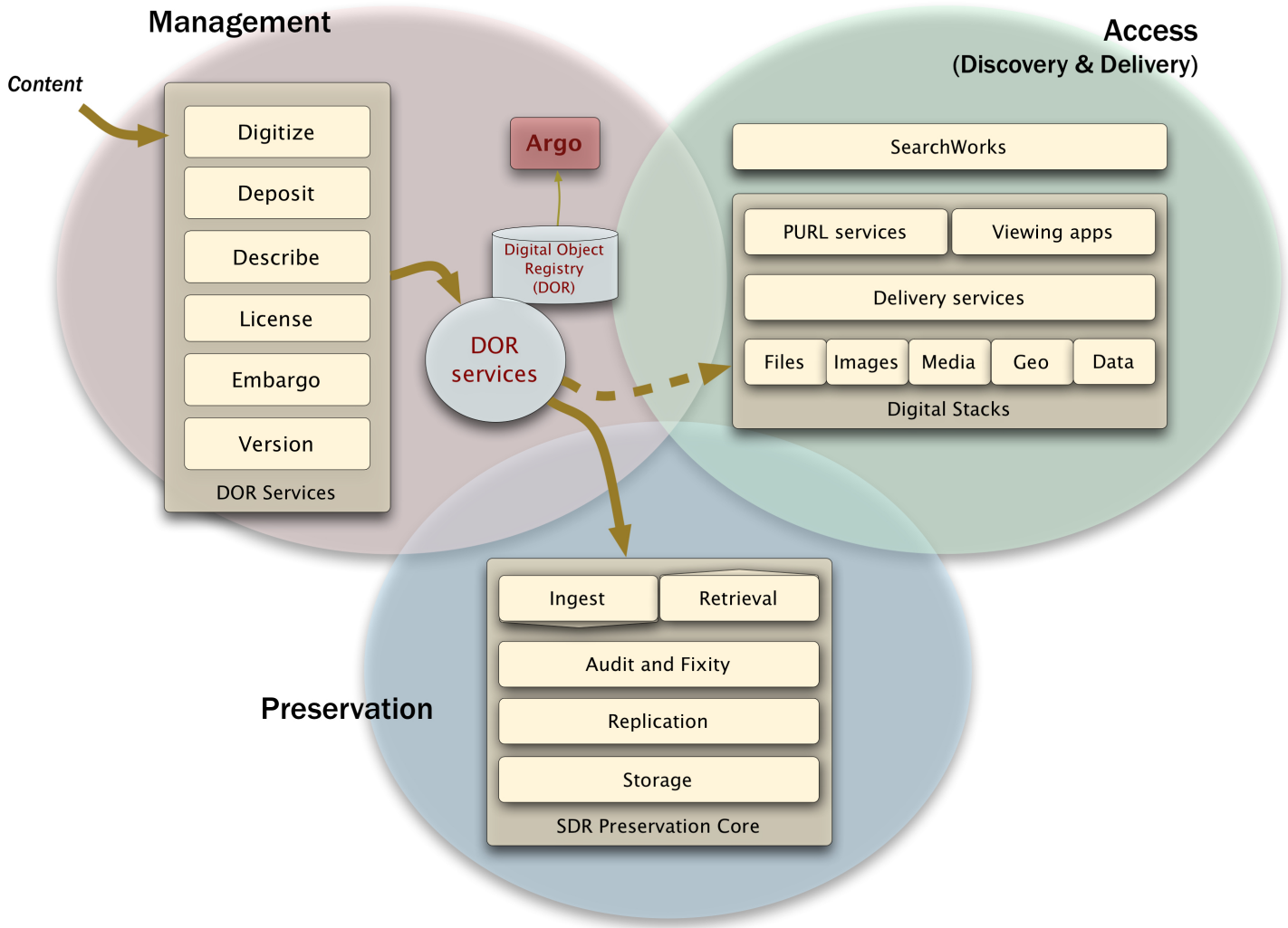
Stanford Digital Repository (SDR)-DPN Integration

STANFORD UNIVERSITY LIBRARIES

The Stanford Digital Repository (SDR) is…

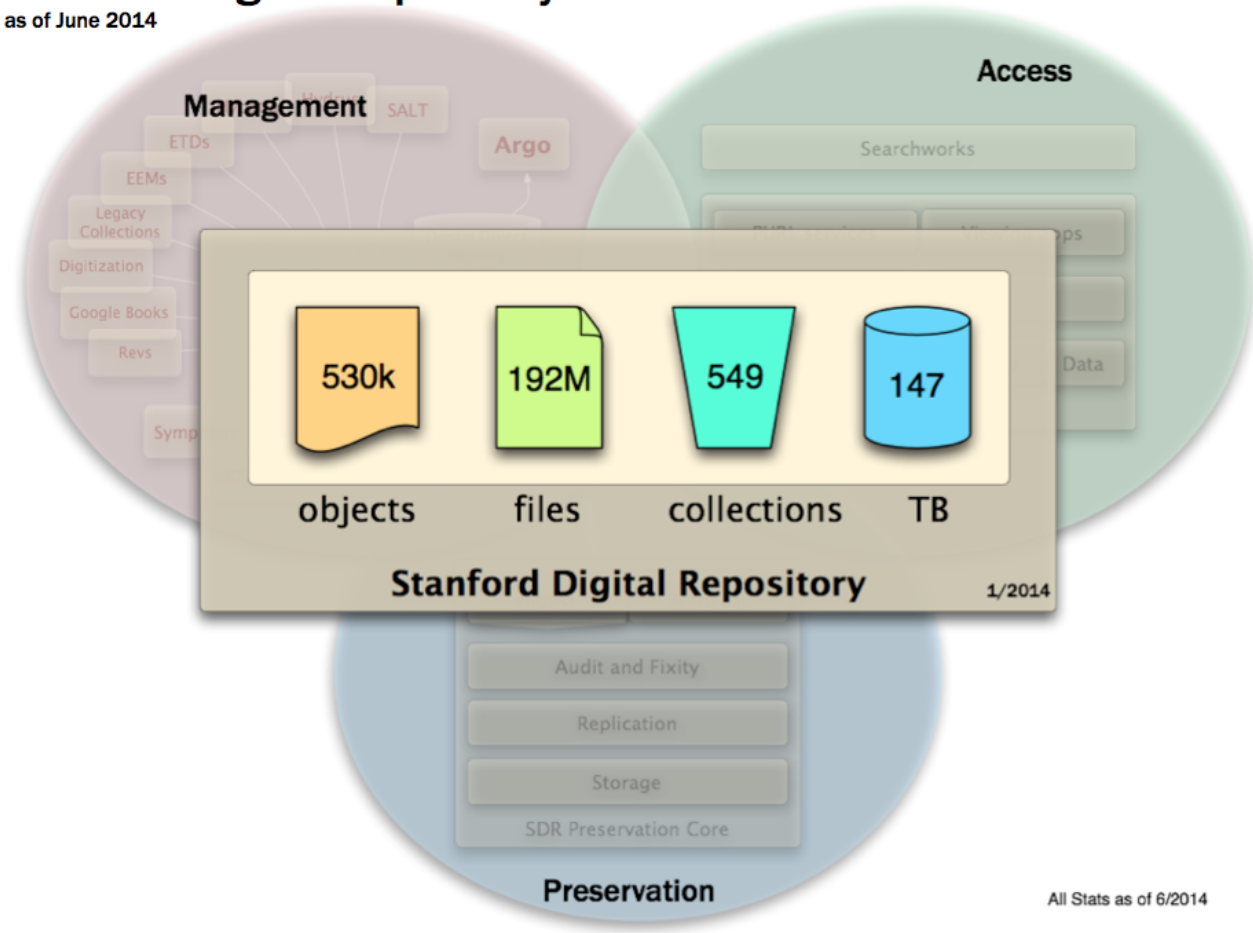
- a Fedora-based preservation repository,
- with Hydra-based management and access services,
- a modular architecture,
- and serves as a DPN Node.

http://library.stanford.edu/sdr

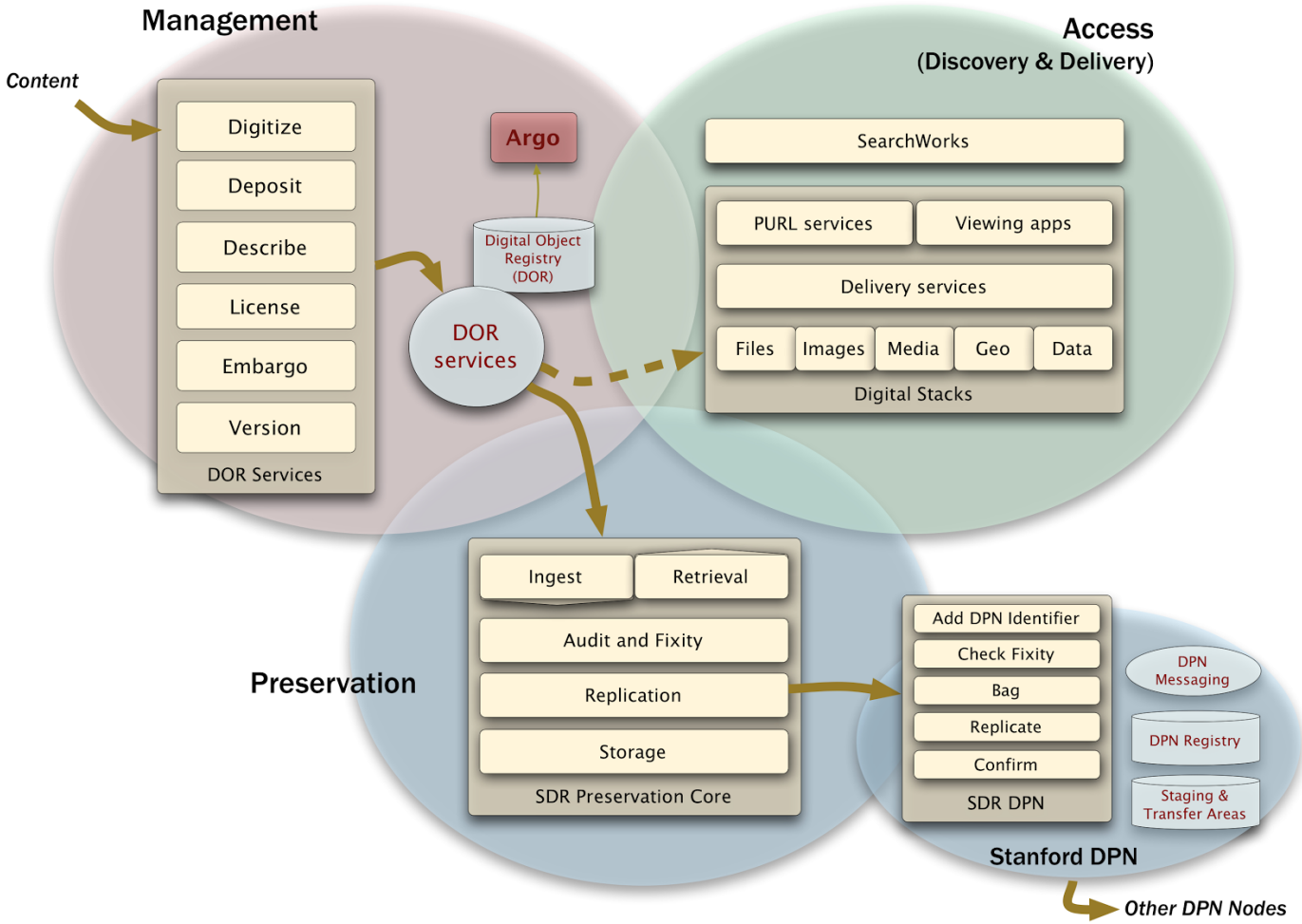

Management
Content
Digitize
Deposit
Describe
License
Embargo
Version
DOR Services
Argo
Digital Object Registry (DOR)
DOR services
Access
(Discovery & Delivery)
SearchWorks
PURL services
Viewing apps
Delivery services
Files
Images
Media
Geo
Data
Digital Stacks
Preservation
Ingest
Retrieval
Audit and Fixity
Replication
Storage
SDR Preservation Core

The Stanford Digital Repository

Contents as of June 2014



All Stats as of 6/2014

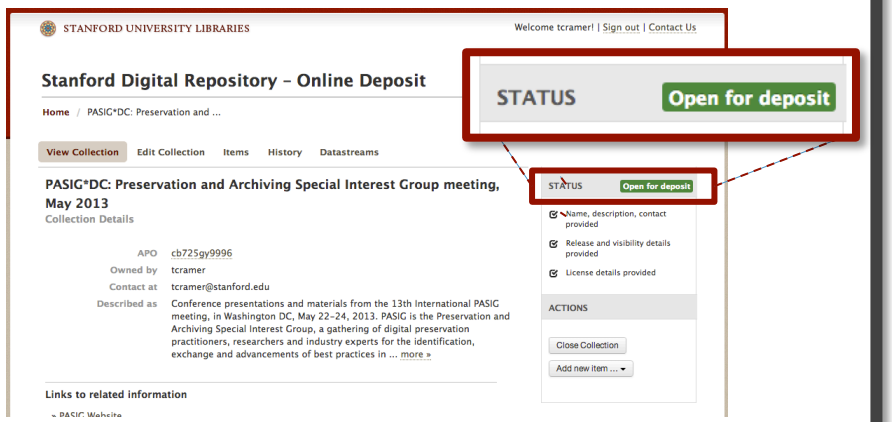

Management
Content
Digitize
Deposit
Describe
License
Embargo
Version
DOR Services
Argo
Digital Object Registry (DOR)
DOR services
Access
(Discovery & Delivery)
SearchWorks
PURL services
Viewing apps
Delivery services
Files
Images
Media
Geo
Data
Digital Stacks
Preservation
Ingest
Retrieval
Audit and Fixity
Replication
Storage
SDR Preservation Core
Add DPN Identifier
Check Fixity
Bag
Replicate
Confirm
SDR DPN
DPN Messaging
DPN Registry
Staging & Transfer Areas
Stanford DPN
Other DPN Nodes

All SDR Content is covered by an Agreement

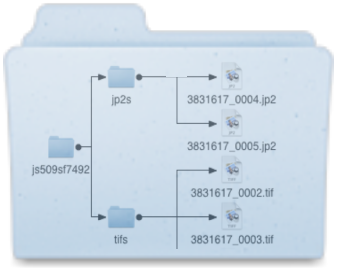
- All deposits are governed by exactly one set of agreements governing content administration
  - Encapsulates contracts, MOUs and terms of deposit
  - Defines owners, roles, timeframe, preservation and access services
  - *Will include DPN agreements for replication and succession rights*

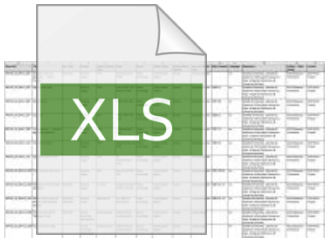
- Agreement terms are recorded in machine-actionable form in an Administrative Policy Object (APO)
  - Every object isGovernedBy one APO
  - Records default <rights, access, attribution, storage> settings for collections
  - "Replicate to DPN" flag will be set in an APO

Hydra Applications



Bulk Accessioning



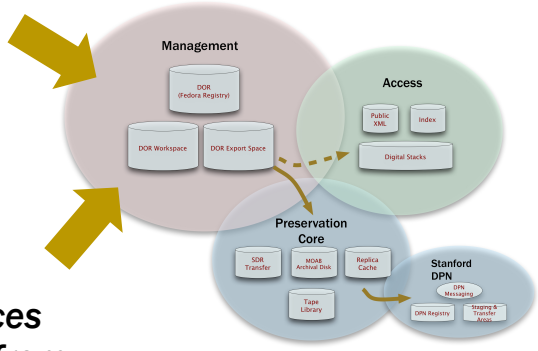


Directory of content in prescribed structure

Spreadsheet for descriptive metadata

Pathways into SDR

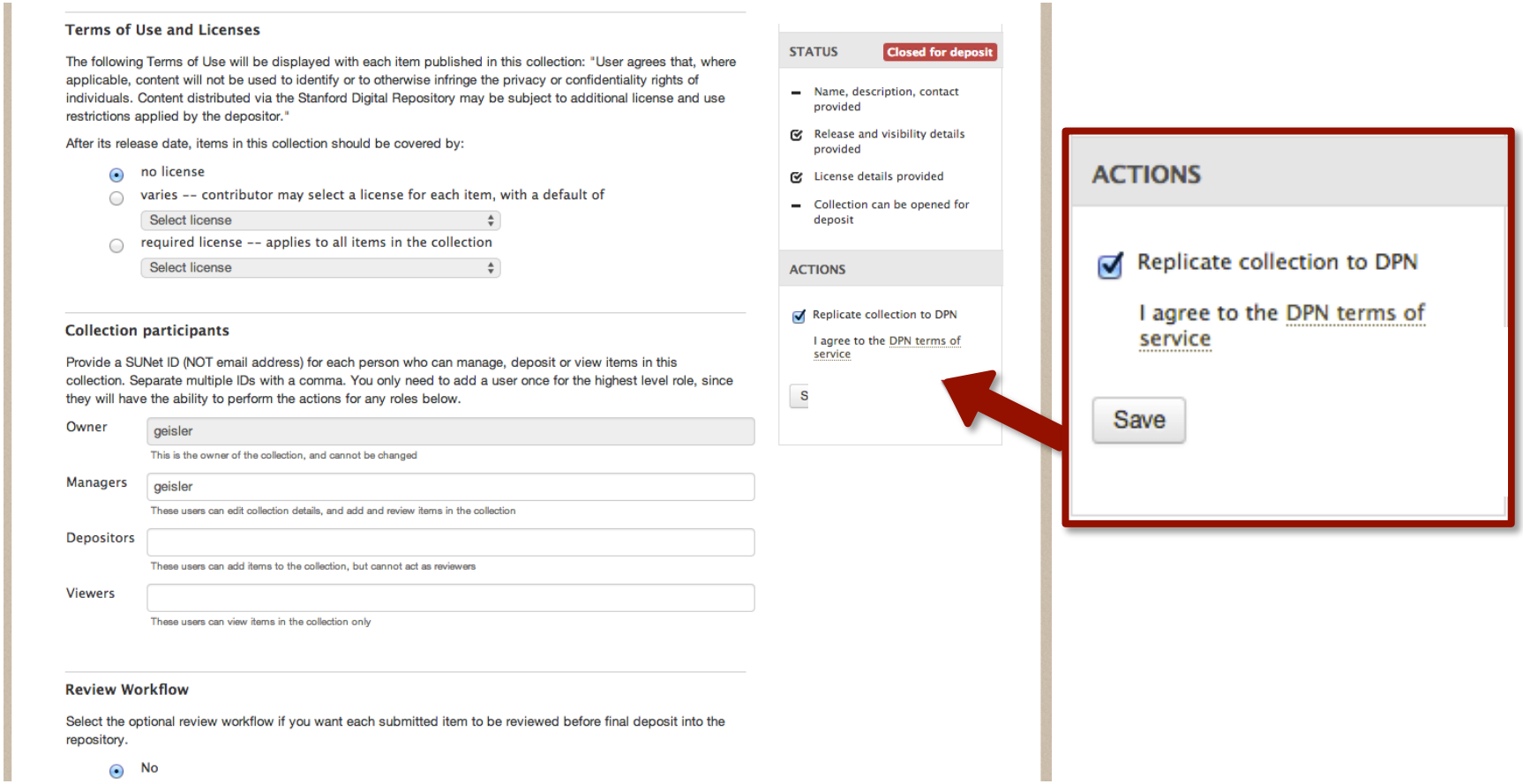
Hydra apps create well-formed objects in Fedora



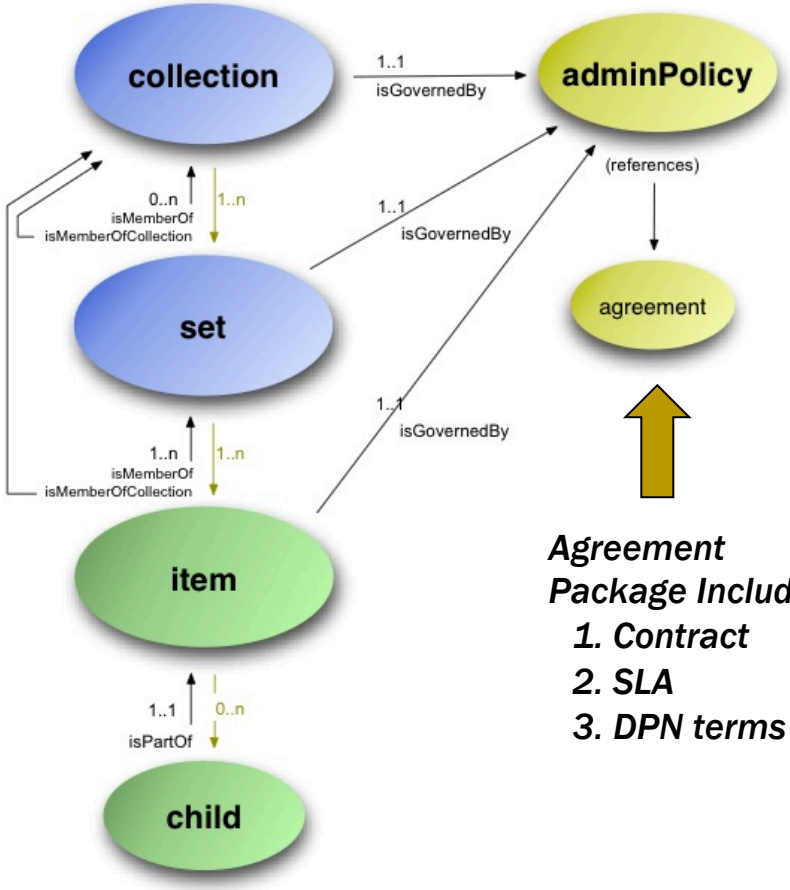
-AND/OR-

Accessioning services transform content from directory, build metadata data streams from XLS and directory, and assemble full objects in Fedora via bulk loading.

Augmenting Hydra for DPN



DPN Service Will Be Declared in the APO



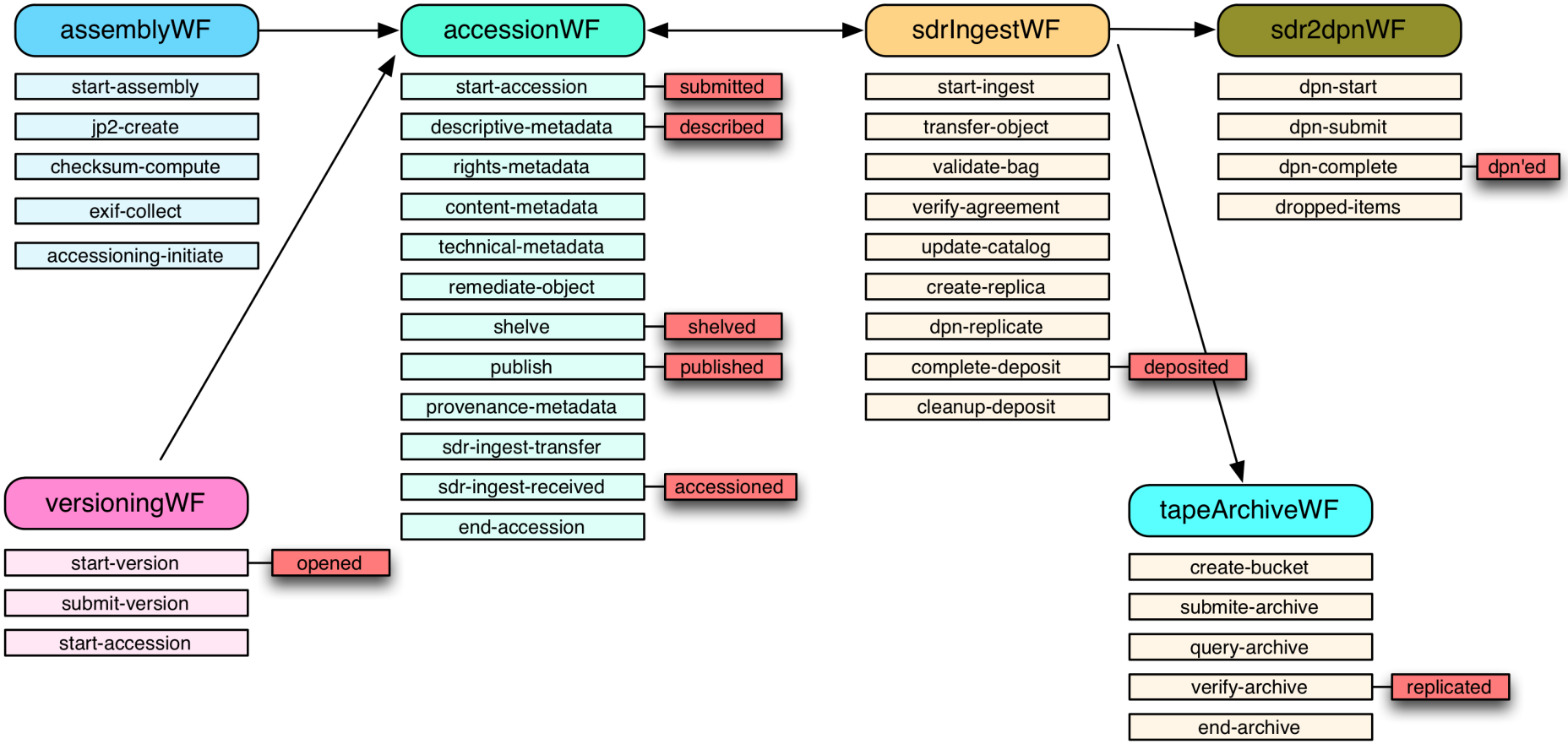
Agreement Package Includes

1. *Contract*
2. *SLA*
3. *DPN terms*

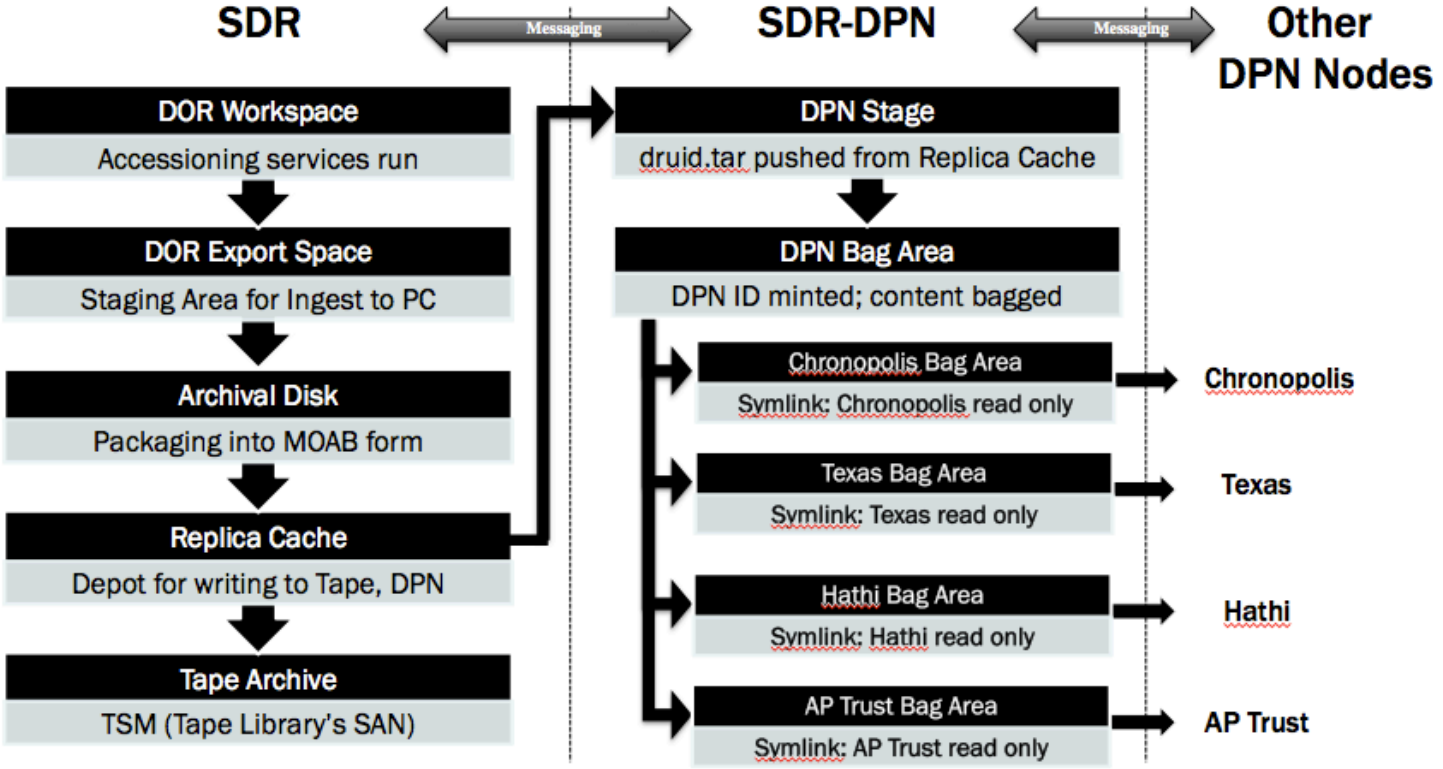
Administrative Policy Object (APO) contains an administrativeMetadata data stream

```
<administrativeMetadata objectId="druid:...">
  <descMetadata>
    <format>MODS</format>
    <source>symphony</source> </descMetadata>
 ....
<accessioning>
    <shelve value="yes" mimetype="image/jp2" />
    <publish value="yes" mimetype="image/jp2" />
    <preserve value="yes" mimetype="*" />
  </accessioning>
  <preservation>
    <disk copy value="yes" mimetype="*" />
    <tape copy value="yes" mimetype="*" />
    <replicate to dpn="yes" mimetype="*" />
</preservation>
  <dissemination>
    <harvester name="searchworks">item</harvester>
    <harvester name="searchworks">collection</harvester>
    <releaseDelayLimit>20 years</releaseDelayLimit>
  </dissemination>
 ....
</administrativeMetadata>
```

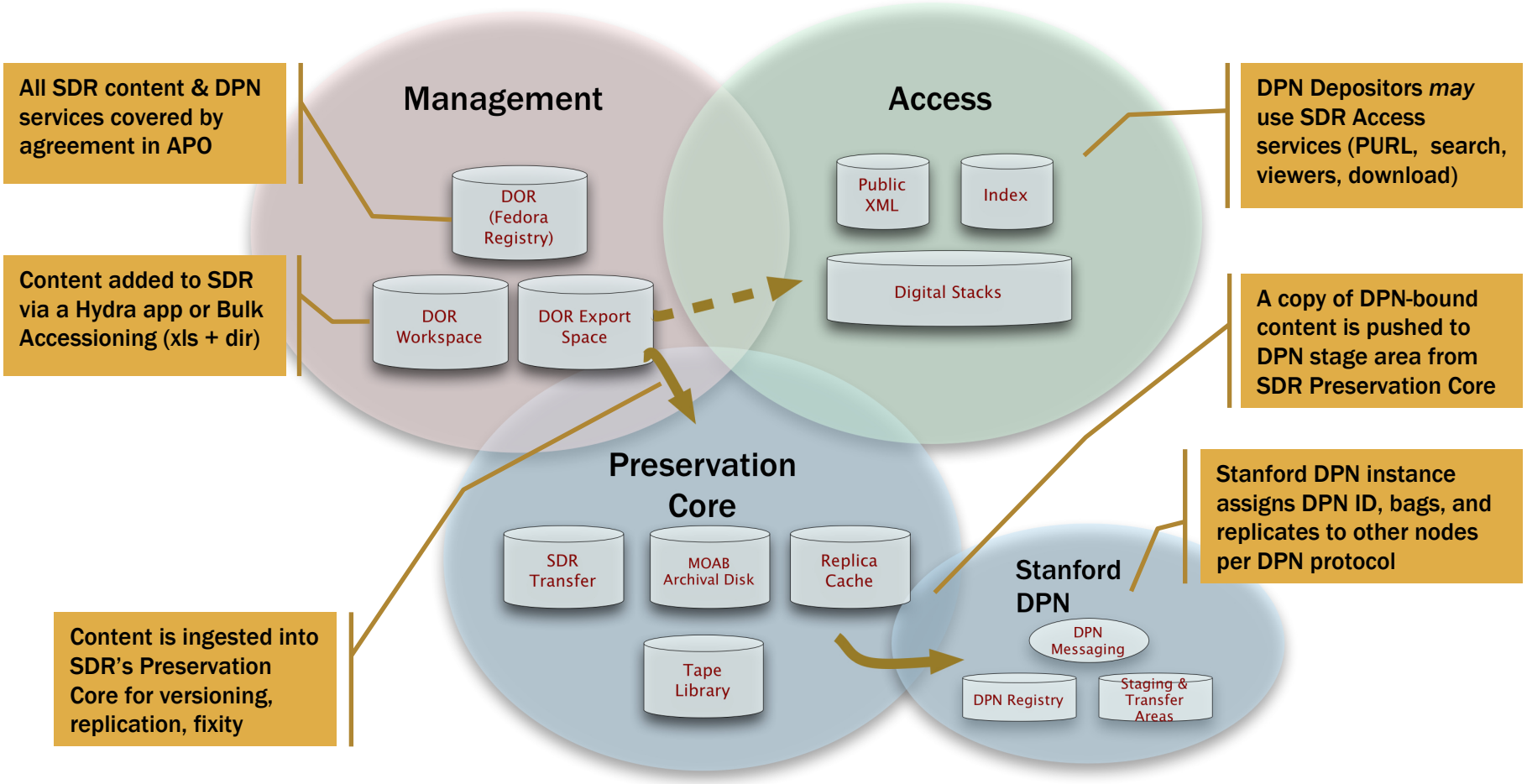
SOA: Content Moves Across SDR via Workflows



Content Movement From SDR to DPN



Synopsis: SDR 2 DPN



OH BY THE WAY

- DPN pilots starting in 2014
- DPN is HIRING – job postings coming up!

Thank you!

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