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Department of Jobs, Enterprise and Innovation

Ireland's EU Structural Funds Programmes 2007 - 2013
Co-funded by the Irish Government and the European Union

HEA
Higher Education Authority
An tÚdarás um Ard-Oideachas

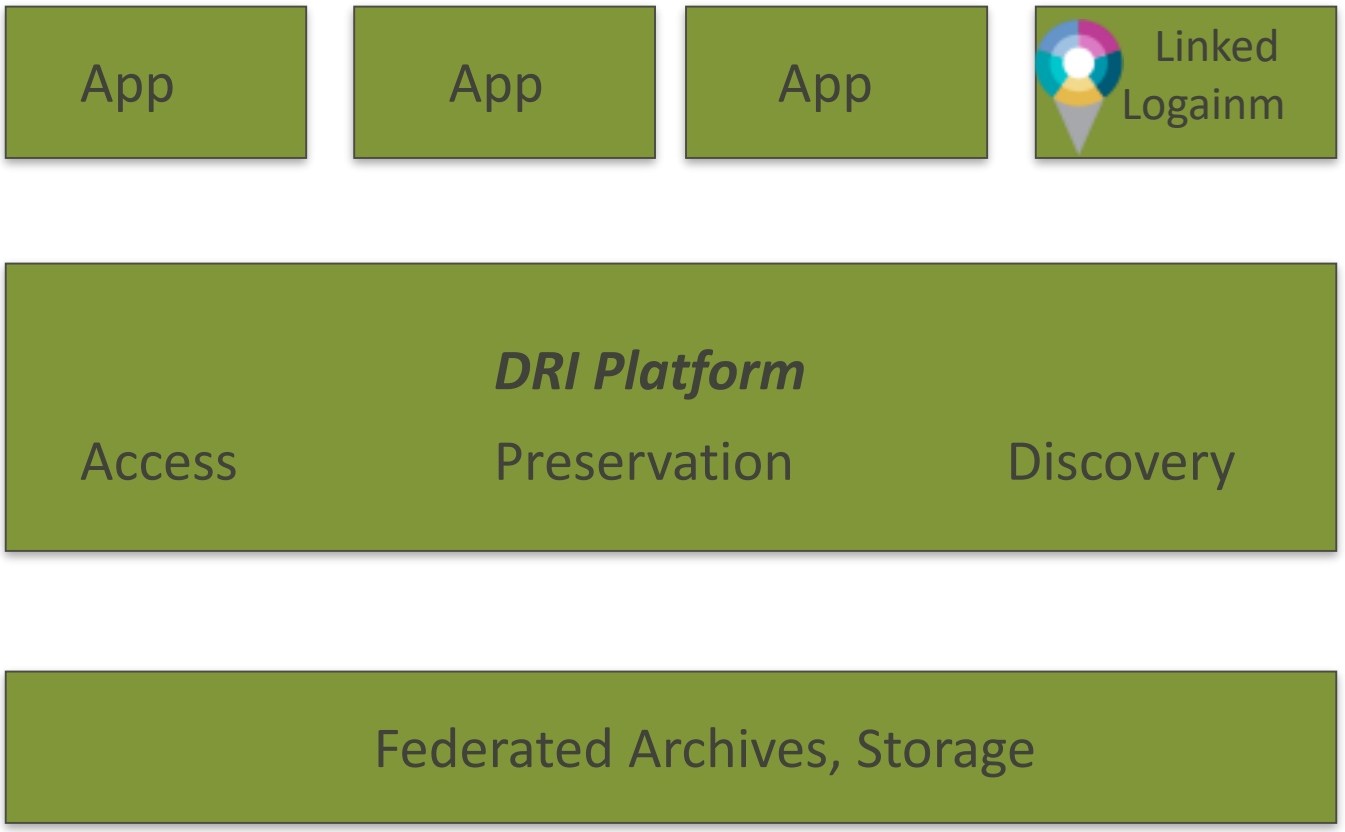
EUROPEAN REGIONAL DEVELOPMENT FUND

Mission

DRI is a trusted digital repository for Humanities and Social Sciences Data

- linking and preserving the rich data held by Irish institutions, with a central internet access point

- Our Cultural & Social Heritage


App
App
App
Linked
Logainm
DRI Platform
Access
Preservation
Discovery
Federated Archives, Storage

Metadata

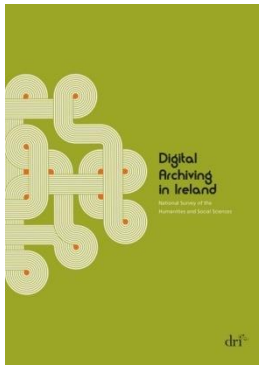
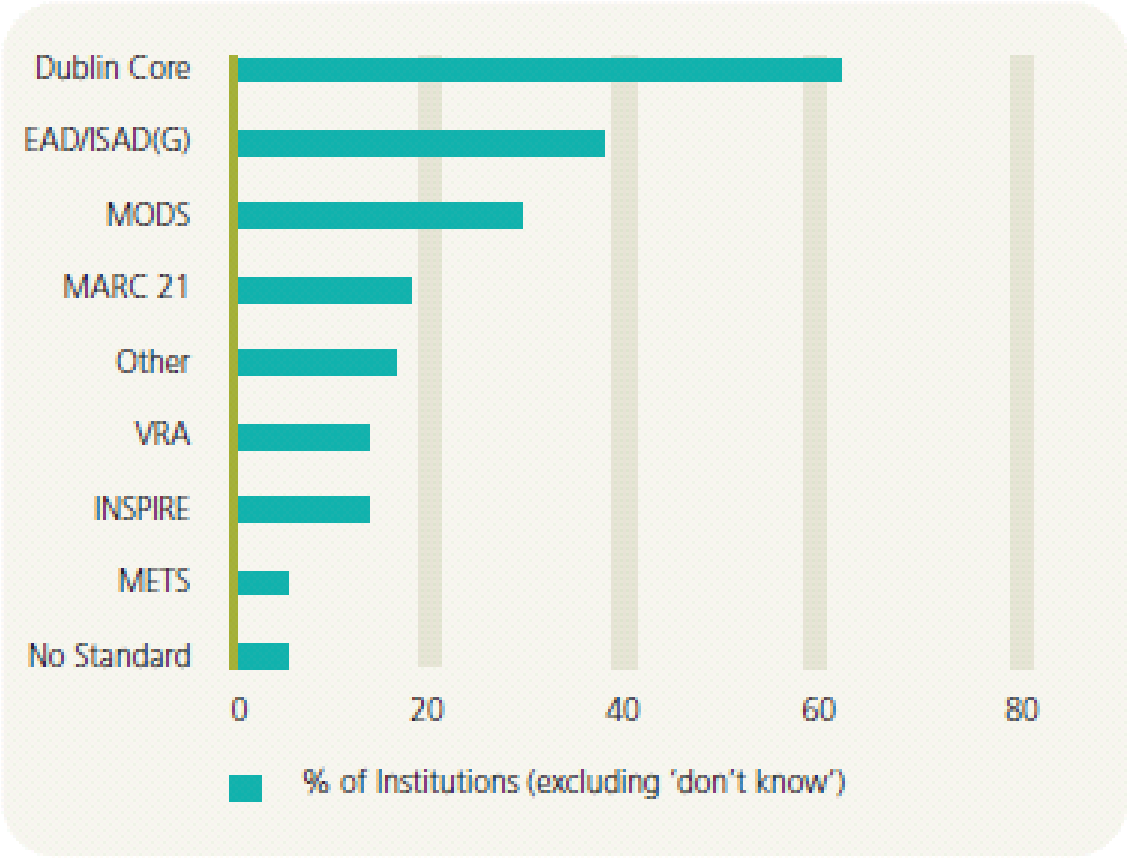


Fig. 5: Metadata standards



Formats

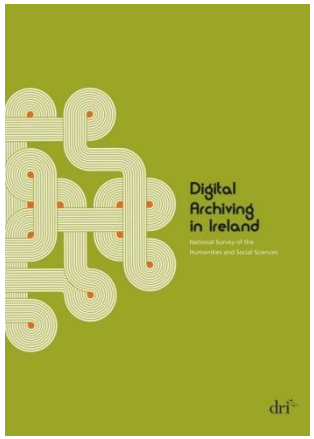
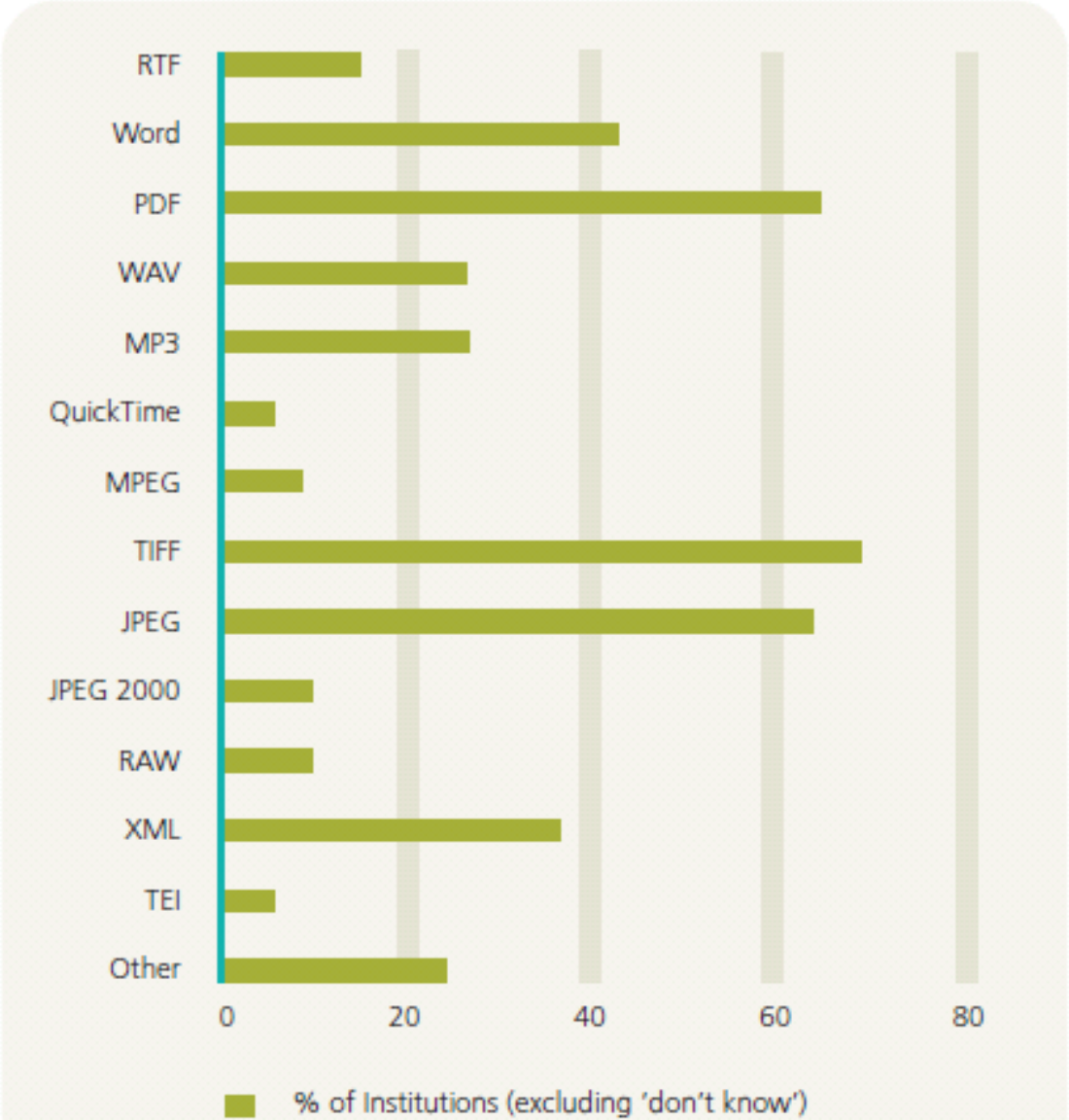
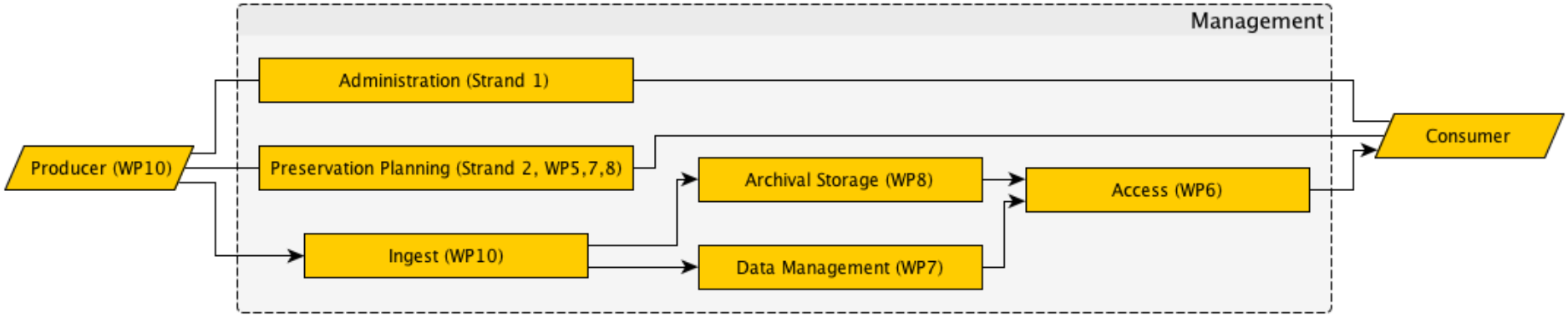


Fig. 4: Formats used by institutions



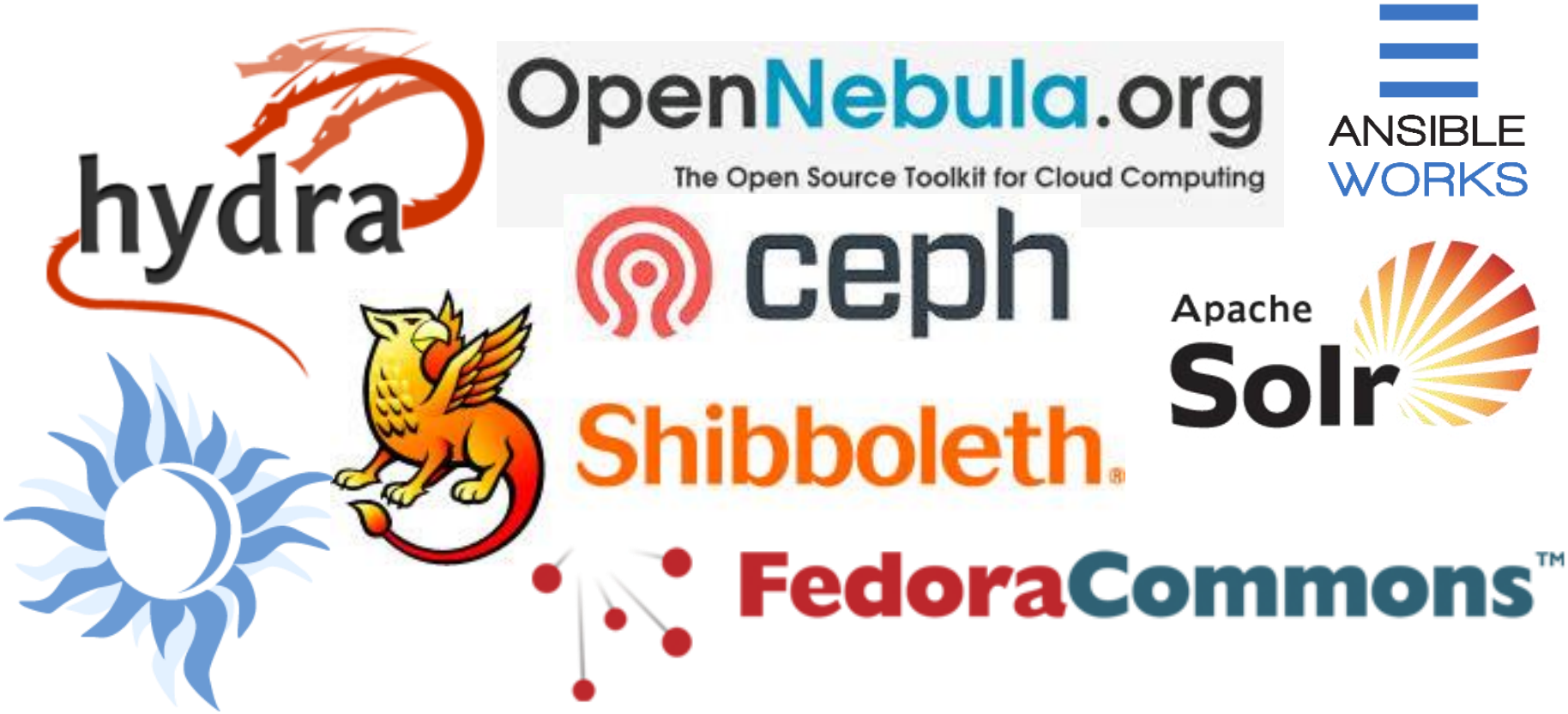
SYSTEM ARCHITECTURE

OAIS model


Management
Administration (Strand 1)
Producer (WP10)
Preservation Planning (Strand 2, WP5,7,8)
Ingest (WP10)
Archival Storage (WP8)
Data Management (WP7)
Access (WP6)
Consumer

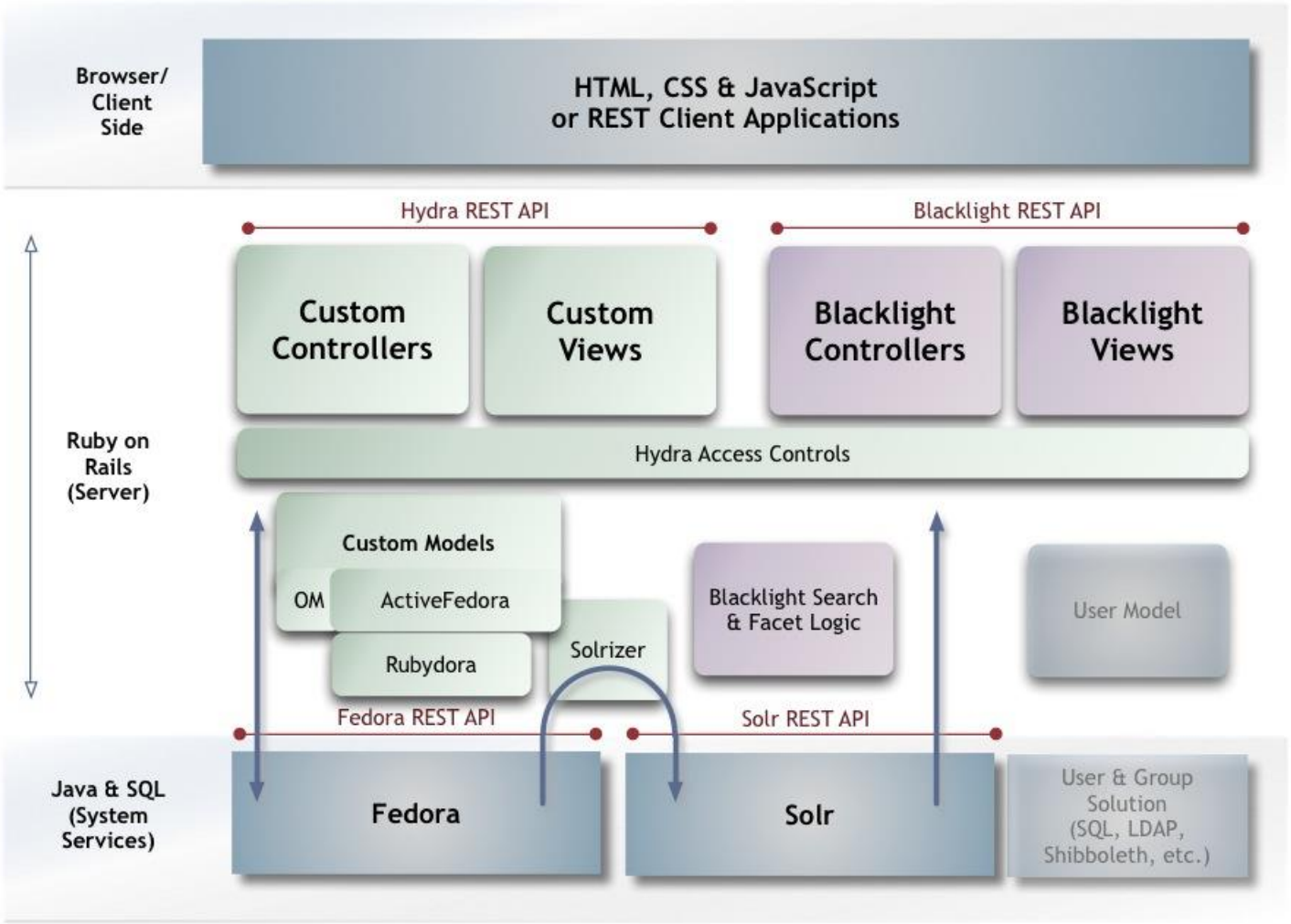
dri

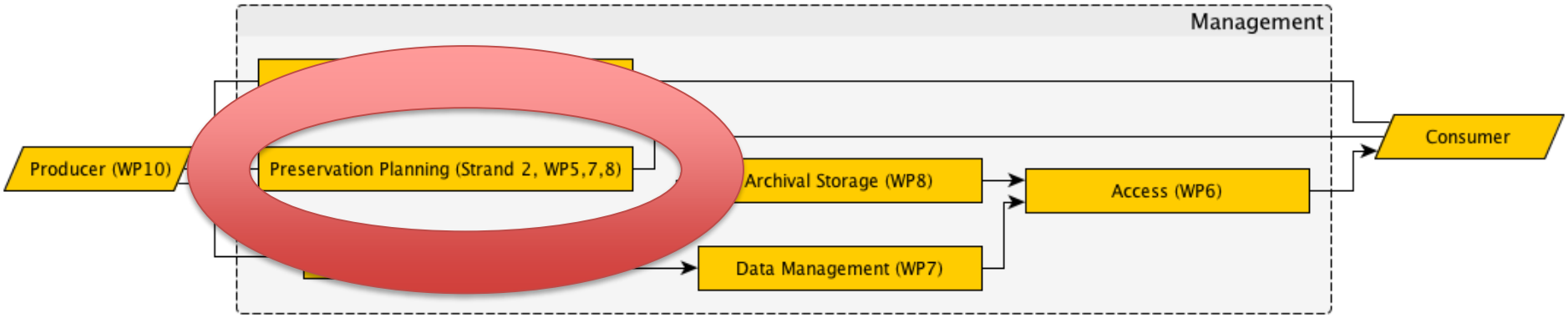
Open source components
Custom code to join them together



Why Hydra?

- Previous experience with Fedora Commons and DSPACE
- Wanted to use Solr for search
- Hydra provided a framework for combining Fedora and Solr
- Additional benefits
  - Active user community and support
  - Roadmap that matched our plans
  - Move the data models away from the preservation function
  - Rapid development – we are about 18 months ahead of where we thought we would be


Browser/
Client
Side
HTML, CSS & JavaScript
or REST Client Applications
Hydra REST API
Blacklight REST API
Custom
Controllers
Custom
Views
Blacklight
Controllers
Blacklight
Views
Ruby on
Rails
(Server)
Hydra Access Controls
Custom Models
OM
ActiveFedora
Rubydora
Solrizer
Blacklight Search
& Facet Logic
User Model
Fedora REST API
Solr REST API
Java & SQL
(System
Services)
Fedora
Solr
User & Group
Solution
(SQL, LDAP,
Shibboleth, etc.)



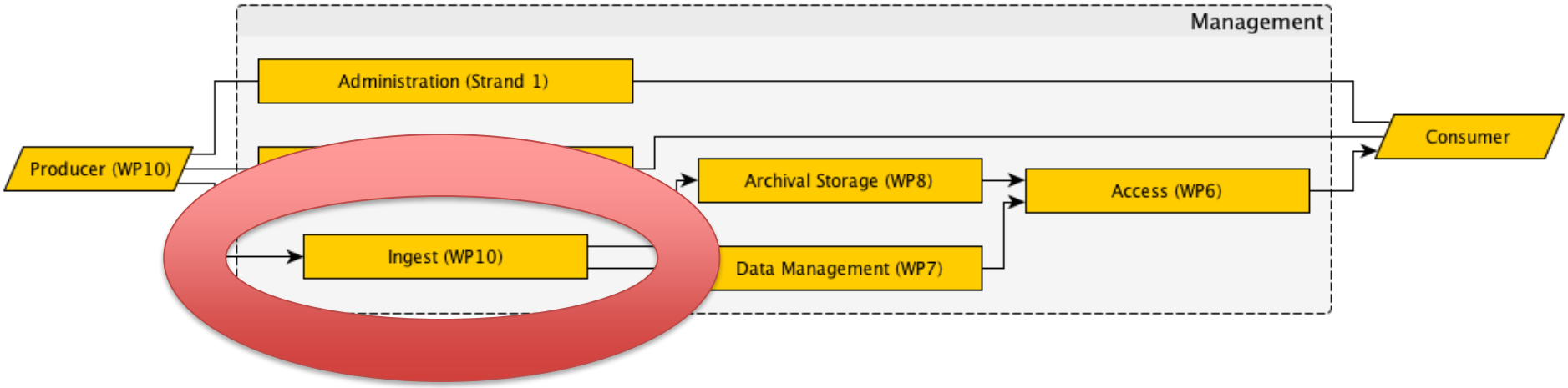
DEVELOPMENT PROCESS

Agile Development Methodology

- Requirements driven
- Daily standups
- 2 week code sprints
- 4-6 week milestones
- Continuous testing/integration/deployment
  - Cucumber, rspec and buildbot

Release Timetable

- March 2014 – internal prototype
- From September 2014 – 6 monthly releases
  - Additional features
  - Additional datasets
- Upcoming release contains minimum set of features to provide a TDR
- Currently preparing an infrastructure report for publication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Ingest (WP10)
Data Management (WP7)

DATA INGEST

Data Ingest

DRI supports multiple metadata standards and file formats

Data arranged into collections, with defined owner and editor users

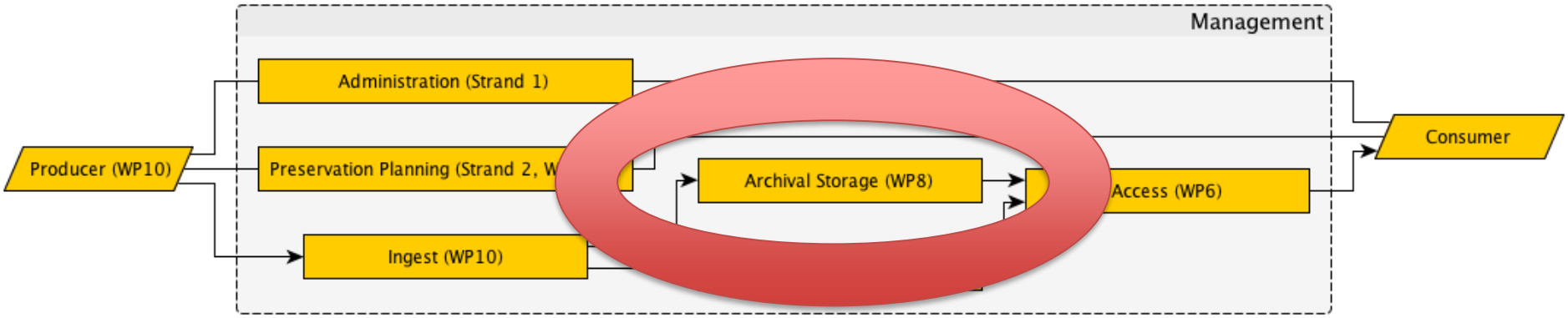
Two data ingest paths

- web interface – add single object to collection
- command line – bulk upload of many objects

Data Ingest

Automated pipeline, using resque, for background tasks on ingested objects

- Virus and malware scan
- Checksuming
- Surrogate generation
- DOI minting
- Linked data – logainm
- Triggered events for certain object types



DATA PRESERVATION

Preservation strategy

Multi-site repository

- Dublin and Maynooth (~25km separation)

Asynchronous replication

- Ability to catch errors on the fly

Segregated storage

- Master copies with surrogates for public access

CEPH features

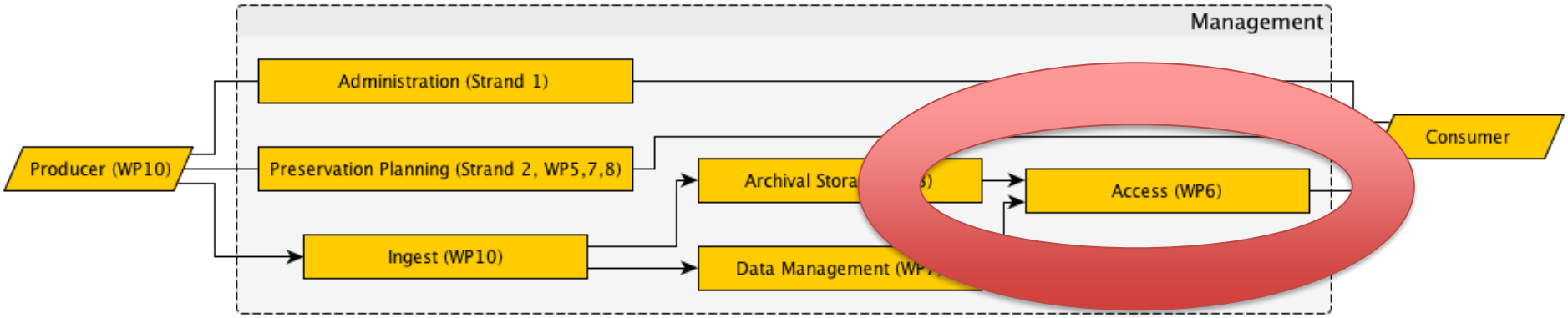
Using CEPH as the underlying storage system

Provides Posix, S3 and Block access

- Using S3 – potential to move to commercial cloud

Tiered storage and multi-site features

Erasure coding to reduce raw storage needs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Archival Stora
Data Management (WP
Access (WP6)
Consumer

USER ACCESS

User Access

Primarily through the blacklight search interface

Other routes

- Curated collections and virtual galleries
- Georeferenced data – mapping
- Temporal data – timelines
- User definied collections
- DOI references in papers

User Access

Anonymous and logged in users

Basic user model – search history, favourite objects, user defined collections

Authentication

- Local users – verified by email
- Shibboleth – link to Edugate

Can provide enhanced access to academic users

Search setup

Solr is one of the leading open source search platforms

Digital objects injested into Fedora Commons

Use the Solrizer gem to create the Solr indices

No deep object inspection at present

- Such functionallity exists in Solr for text and geo
- Other options exist for image

Digital Repository of Ireland
Taisclann Dhigiteach na hÉireann

dri

http://projecthydra.org