Change Notification Architecture Walkthrough

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Background

There are many information systems contributing data
... with irregular update periodicity
... in different metadata formats
... stored and managed in very different platforms
... some of which will reference data in other systems
... and some of which will copy data from other systems

All of which needs to be discoverable via a single system
Technical Assumptions

Records can be made available as Web Resources
... either internal only, or also externally
... at stable URIs

Systems can generate a list of their Records
... and will be able to publish that list as a Web Resource

The Web is the Discovery Platform
Requirements

Discovery data should be reasonably up to date
... where “reasonable” may differ between systems

Loading updated data should be automatic, not manual
... including addition of new systems

Discovery is broad and high level in the aggregate
... and provides deep links enabling specific queries

Discovery is about finding, not about researching
Baseline: Get Inventory

Archives Space 
Provenance 
DOR 
Consv’n 
Publication 

INV 
INV 
INV 
INV 
INV 
INV 

Harvesting and Indexing Platform

GraphDB

Baseline:

Get Inventory
Baseline: Get & Index Records

Archives Space → Provenance → DOR → Conserv’n → Publication

Harvesting and Indexing Platform

GraphDB

GETTY CONSERVATION INSTITUTE + GETTY FOUNDATION + GETTY RESEARCH INSTITUTE + J. PAUL GETTY MUSEUM
Baseline: Get & Index Records

MANY Requests

Harvesting and Indexing Platform

Archives Space
Provenance
DOR
Conserv’n
Publication

Baseline: Get & Index Records

Baseline: Get & Index Records

Baseline: Get & Index Records

Baseline: Get & Index Records
Baseline: Optimization

Archives Space → ZIP
Provenance → INV
Vocabs → INV
DOR → INV
Conserv’n → INV
Publication → ZIP

Harvesting and Indexing Platform

GraphDB
GraphDB
Incremental: Notification

Archives Space  Provenance  DOR  Conserv’n  Publication

Vocabs

Notificat’n

Harvesting and Indexing Platform

GraphDB

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Incremental: Get Updated Record

- Archives Space
- Provenance
- DOR
- Conserv' n
- Publication

Single Request

Harvesting and Indexing Platform

GraphDB

Single Request
New Dataset Integration

Change Notification Architecture

Archives Space
Provenance
DOR
Conserv’n
Publication
Photo Archives

Vocabs
Notificat’n

Harvesting and Indexing Platform

GraphDB
GraphDB

I Exist!

GETTY CONSERVATION INSTITUTE + GETTY FOUNDATION + GETTY RESEARCH INSTITUTE + J. PAUL GETTY MUSEUM
Wait ... Wut?
Subscription to Channels

I want to hear about this!

Harvesting and Indexing Platform

record changes

dataset changes

GraphDB

GraphDB
Notifications go to Channel Subscribers

- Photo Archives
- Record changes
- Dataset changes

I Exist!
You wanted to hear about this

Harvesting and Indexing Platform

GraphDB
GraphDB
Channel per Content Provider

I want to hear about this!

And about this!

Vocabs
Provenance
DOR

vocab changes
museum changes
Channel per Content Provider

- Vocabs
- Provenance
- DOR

vocabulary changes
museum changes
Multiple Channels per Content Provider

- Vocabs
- Provenance
- DOR

Change Notification Architecture

Private Museum
Public Museum
Standards

Subscription:
  W3C WebSub

Notification:
  W3C WebMention or W3C LDN

Inventory:
  Google Sitemaps with NISO ResourceSync

Zip:
  (duh) with NISO ResourceSync manifest
Discuss!