

Europeana Space Technical Workshop

E-Space Technical Infrastructure

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Wish

Create and curate collections of digital records:

- Aggregate multiple sources.
- Add your own content to the search base.
- Interact with metadata processing services.
- Have records available in different formats and serialisations.
- Serve collections as specific backends for specialised front-end applications.



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March 23, 2015**



With

The screenshot displays the WITH website interface. At the top, a dark navigation bar contains the 'WITH' logo on the left and search, login, and register options on the right. Below the navigation bar is a grid of six large, square, grayscale images representing different categories: 'DISCOVER' (a person on a rocky shore), 'CREATE' (a glowing lightbulb), 'ANNOTATE' (a hand with handwritten text), 'BUILD' (hands holding a tablet), 'AGGREGATE' (a collection of small screens), and 'PARTICIPATE' (a crowd of raised hands).

Below this grid is the 'EXHIBITIONS' section, which features three exhibition cards:

- STREET ART**: By Christchurch City Libraries. The image shows a close-up of a person's face with intricate street art makeup.
- PORTRAITS**: By University of Otago. The image shows a man in a hat and coat, possibly a historical figure.
- FASHION SKETCHES**: By MISSION. The image shows colorful fashion sketches of people in traditional or stylized clothing.

Below the exhibitions is the 'FEATURED COLLECTIONS' section, which features three collection cards:

- DANCE**: The beauty of the human body in movement. The image shows a collage of dancers in various poses and costumes.
- PHOTOGRAPHY**: All our yesterdays. The image shows a collage of historical black and white photographs.
- EGYPT**: Ancient Egypt. The image shows a collage of ancient Egyptian art, including a large face, hieroglyphs, and a headdress.

At the bottom of the page, a dark footer contains the text: 'Welcome to WITH. Start typing to search or use the featured categories to explore.' On the right side of the footer are social media icons for Facebook, Twitter, LinkedIn, and YouTube.

With

WITH

Click or type to Search

Login

Register

DISCOVER

CREATE

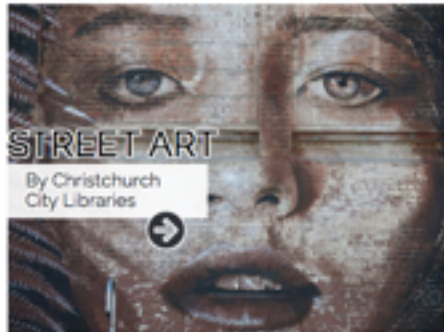
ANNOTATE

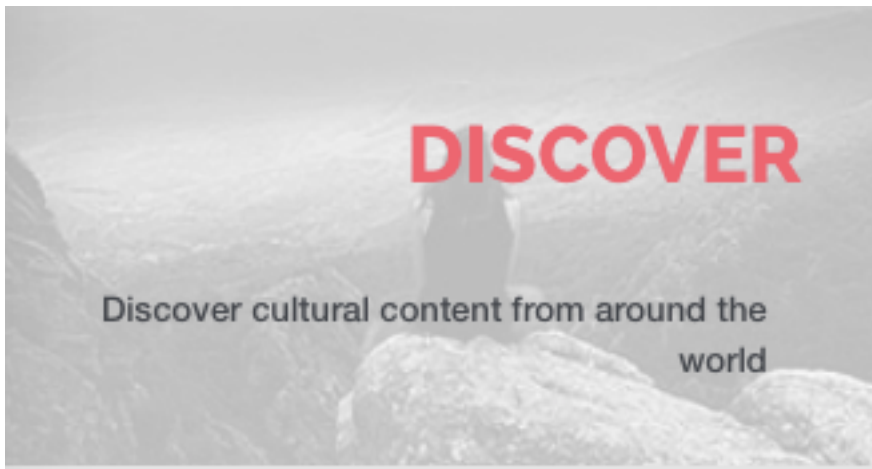
BUILD

AGGREGATE

PARTICIPATE

EXHIBITIONS





- Search for cultural heritage knowledge in distributed repositories

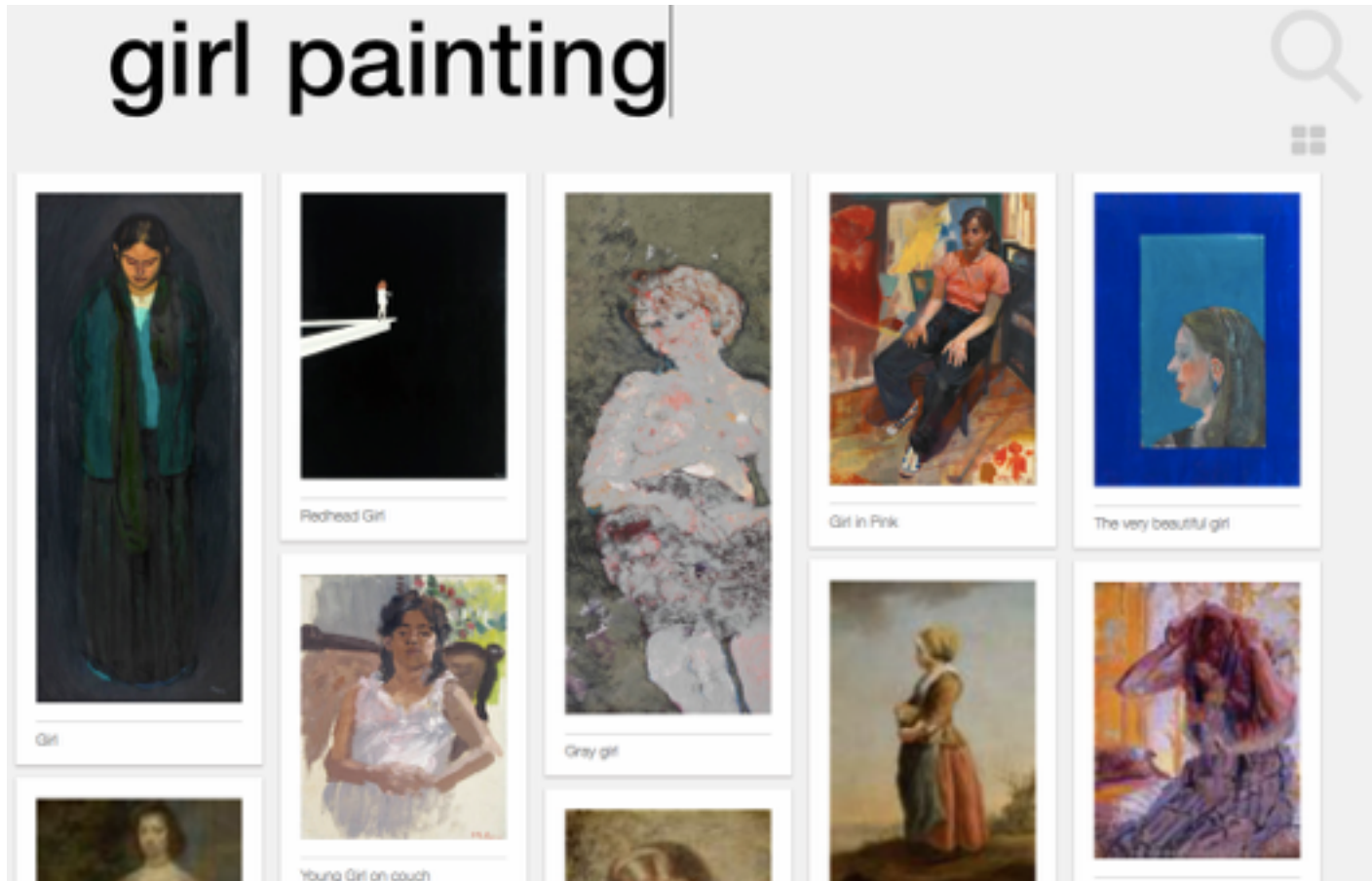
- Browse an expanding set of diverse sources
- Explore results and visualize distinct types of resources
- Tweak the scope of your search
- License-based search for quality content



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Searching



Sources

indigenous

EUROPEANA

- Ladahi-Frau mit einem Kind, auf einem Markt?
- Betermönch in einem Kloster
- Pre-historic times, as illustrated by ancient remains and the manners and customs of modern savages, by Sir John Lubbock, bart.
- Incomindos - Internationales Komitee für die Indianer Amerikas - Comité international pour les Indiens des Amériques - International Committee for the Indians of the Americas - Comité Internacional para los Indios de las Américas
- Incomindos Schweiz - 8303 Bassersdorf [Internationales Komitee für die Indianer Amerikas, Sektion Schweiz]
- Indigenous Peoples' Innovator:

DPLA

- Diporodemus Indigenous Hyman
- Diporodemus Indigenous Hyman
- Indigenous hospital, in Douala, in Cameroon
- [Grass huts and indigenous people]
- The indigenous trees of the Hawaiian Islands
- Indigenous Peoples in a Globalized World
- Prehistoric and indigenous Indian art /
- Diporodemus Indigenous Hyman

NLA

- Indigenous Peoples International Administrators' Conference, Uluru, Australia, 1985, a pictorial record / Department of Aboriginal Affairs
- Fire making tools used by Indigenous Australian people
- Indigenous art at Youembula Caves
- Indigenous dancers
- Indigenous singers
- Indigenous merchant
- Indigenous girls
- Indigenous People

DIGITALNZ

- Indigenous Forestry
- Indigenous Specimen
- Indigenous I
- Indigenous II
- Indigenous III
- Indigenous IV



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 March 23, 2015



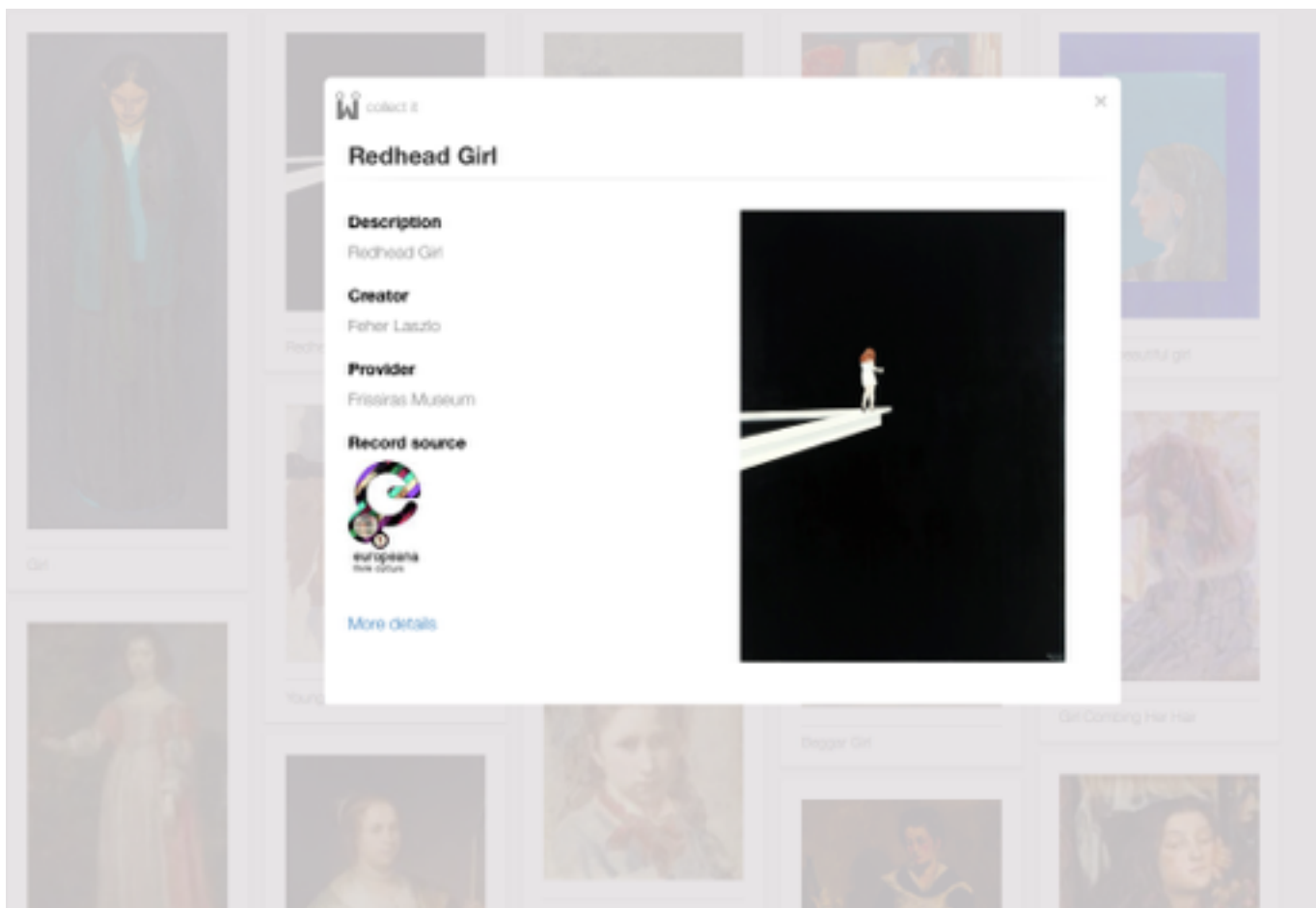
- Inspect cultural heritage content and metadata
- Compose eclectic collections
- Retrieve relevant information
- Contextualise collections, create Exhibitions




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Resource view




Collect

 collect.it x


Woman painting the shoes of a marching girl, New Zealand

Description
Woman painting the shoes of a marching girl,
New Zealand

Creator
Brake, Brian

Record source
 DIGITALNZ
Α ΤΗΝ Ο ΑΟΤΕΛΑΒΙΑ

[More details](#)



Featured



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More information

- See the record at the provider's site
- Download original metadata
- Get the provider API call to retrieve the item
- See the collections that use the resource
- Find annotated versions of the item
- Browse related items and linked resources



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- Leverage the programmable web to help developers create applications using APIs

- HTML view of API responses
- Combined access to common functionality
- Use source-specific advanced features



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- XML and JSON serialisations for metadata
- Download a collection and its items
- Publish collections, transformed and annotated records
- Access using protocols like OAI-PMH or through the platform's API



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ANNOTATE

In a controlled (content providers)
or open (crowdsourcing)
environment:

Link & Enrich with LoD sources

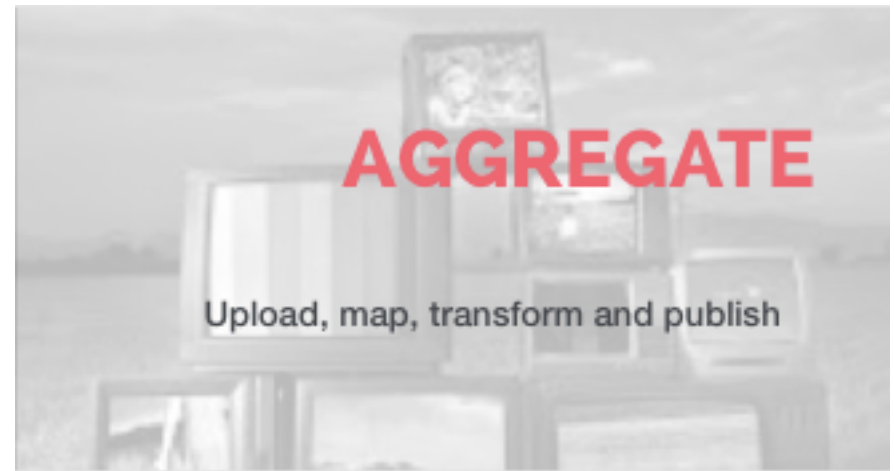
- Tag; free-text or with controlled terminologies
- Enrich; combine NLP techniques, formal SKOS thesauri and semantic web technologies to add expressive power
- Link; connect collected resources, use ontologies to express relations, explore and connect to the Linked Open Data cloud



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- Upload, host and showcase your content and metadata
- MINT-based aggregation gateway
- Content space media repository
- Map and transform to metadata models
- Link to high quality content
- Publish (OAI-PMH, Europeana, 3rd party portals)



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Metadata Processing Unit

MINT services

- Import using identified delivery protocols
- Visual mapping editor for crosswalk generation
- Transformation
- Schema Validation
- Data Cleaning
- Reconciliation with SKOS vocabularies
- Publication



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Mapping Tool

The screenshot displays the Mapping Tool interface for a project named "TestMapping (EDM)". The main workspace shows a list of mappings, each with a "structural" label and a "structural" button. The mappings are:

- rdf:RDF
- edm:ProvidedCHO
- edm:WebResource
- edm:Agent
- edm:Place

The left sidebar shows a tree view of the "TestMapping" project, including categories like "Institutional Metadata", "Administrative", "Descriptive Metadata", and "Retrieval Metadata". The right sidebar, titled "Navigation", contains a list of classes: ProvidedCHO, WebResource, Agent, Place, TimeSpan, Concept, and Aggregation.



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Group edit

The screenshot displays the Group Editor interface with the following components:

- Navigation:** My workspace, Dataset Options, Dataset Options, Annotator demo, Group Actions Preview.
- Left Panel:** A list of items with checkboxes, all of which are checked. The search bar contains "red". Below the list are "Deselect all", "Prev", "Next", and "Show: 15 100 1000" options.
- Center Panel:** A tree view of metadata properties including: rdf:RDF, edm:ProvidedCHO, @rdf:about, dcterms:created, dc:contributor, dc:creator, dc:description, dc:identifier, dc:type, edm:type, edmfp:localType, gr:color, skos:Concept, @rdf:about, mrel:clb, mrel:dsr, dcterms:spatial, dcterms:temporal, and ore:Aggregation. An "Apply Function" dialog is open, showing "Set constant value" and a "New value" of "http://thesaurus.europeana".
- Right Panel:** "Group Annotator: Actions log" showing a list of actions: "search for all in dataset / select 1000 items", "search for red in everything / select 132 items", and "editValue" with a complex XPath expression. "Clear all" and "Commit all" buttons are at the bottom.

<http://mint-projects.image.ntua.gr/espace>



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Media repository

Users receive an invite code, use it to register to the website, upload the images using an FTP client and, use MPU to connect with metadata records.

The system automatically processes images to extract technical metadata (i.e. width/height/colourspace/colour palette/size) and provides a list of URLs for the images

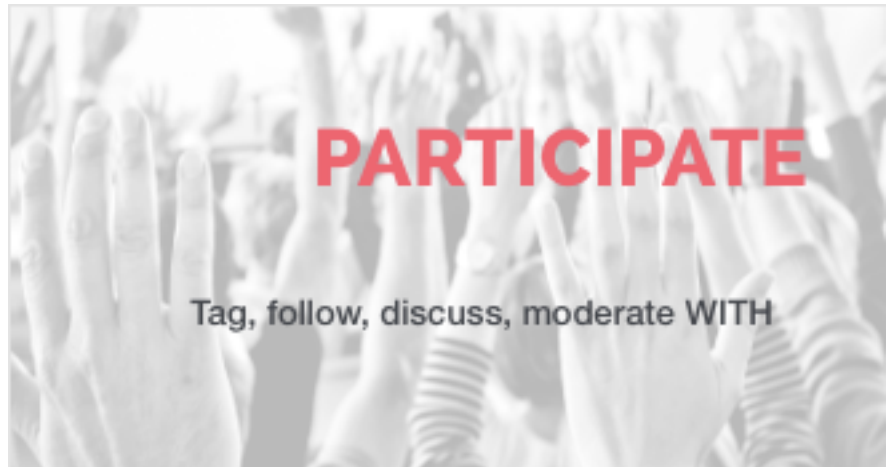
Watermarking



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- Follow content providers, contributors, collections
- Promote content and collections using social media
- Contribute to the development of the platform, integrate services, empower creative re-use



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WITH infrastructure

- Play server
- MongoDB database (document database with auto sharding)
- SOLR indexer (sharding support)
- Job queueing system based on Akka Actors (allow for distributed jobs)
- ▶ Scale out capable system
- Single Page Application front-end
- REST-style calls to the back-end



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Distributed data processing

- Using Akka Actors for highly scalable and distributed data processing
 - Transform Metadata from different serializations into each other (XML \leftrightarrow JSON \leftrightarrow RDF ...)
 - Validate XML records against schemas.
 - Indexing of records
 - Enrichment



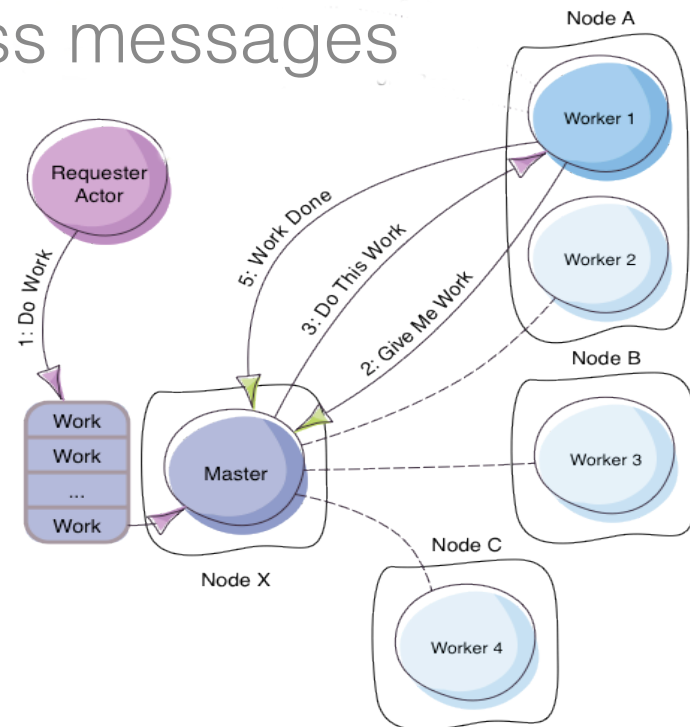
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Akka Actors



- Akka is a toolkit and runtime for building highly concurrent, distributed, and resilient message-driven applications on the JVM.
- Actors are very lightweight concurrent entities. They send, receive and process messages asynchronously using an event-driven receive loop.
- Simple concurrency and distribution, high performance elastic, resilient



More wishes

- Personalized search
- Content providers space
- Users modify/annotate Records
- Customize API
- Create templates to visualize Collections
- Track changed responses to the same search.



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Discuss

- Sources and integration
- Resource types
- Search history
- Collection attributes & scenarios
- Resource context, relations, annotations & Provenance
- Metadata serialization and access
- From tagging to linking



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Thank you

For more information

<http://europeana-space.eu/>

Prototype:

<http://ipa.image.ntua.gr:9010/assets/index.html>

ndroso@image.ntua.gr



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