

Daguerreobase

Collective cataloging tool for daguerreotypes
and daguerreotype literature



DELIVERABLE

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Daguerreobase

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C	Confidential, only for members of the consortium and the Commission Services	

REVISION HISTORY AND STATEMENT OF ORIGINALITY

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1. Introduction

As Daguerreobase will act as an (project) aggregator of content for Europeana, the realization of the objectives of the Daguerreobase project are strongly dependent on good metadata communication and connectivity between the Daguerreobase aggregator and the Europeana portal.

To make the Daguerreobase into a valuable source of information that will contribute to and benefit from Europeana, several methods will be used.

The Linked Open Data protocol was an integral part used in the development of the new Daguerreobase. An API is developed to prepare the necessary mappings for the metadata conversions to the renewed Daguerreobase structure and to handle the alignment of the digital content with Europeana but also with other aggregators and providers.

A DAM (Digital Asset Management system) and data entry tool will be used to provide the metadata and derivatives to the Daguerreobase aggregator.

More detailed descriptions of these methods and tools are described in separate documents and deliverables as part of the WP5 tasks.

- Collection management set up (D5.2);
- API (D5.3);
- Linked Open Data (D5.4);
- Linking Europeana Collection (D5.5);
- Data Import (D5.6).

This document will describe the Daguerreobase API.

2. Definitions¹

API: Application Programming Interface.

Content: Digital (digitised or digital born) information about objects. In this project, content is restricted to digital images and metadata descriptions of daguerreotype objects.

Content Aggregator: An aggregator in the context of Europeana is an organization that collects metadata from a group of data providers and transmits it to Europeana. Aggregators also support the data providers with administration, operations and training.

Project aggregator: Project aggregators are organizations that have joined a project consortium with a specific aim and purpose. Project aggregators aim to aggregate within a specific theme or by domain (single or cross).

Daguerreobase: Project/thematic content aggregator on daguerreotypes. EU-CIP, ICT-PSP funded project #297250.

Daguerreobase API: Technical interface for the purpose of searching and retrieving Daguerreotype Metadata.

Europeana portal: Stichting Europeana, the Foundation providing the Europeana API.

Metadata: Metadata is information about Content, describing its characteristics to aid in its identification, discovery, interpretation and management.

Preview: general term including smaller and/or lower resolution version of still image Content or shorter and/or lower resolution extract of audio or moving image Content.

¹ According to Europeana definitions. Europeana Aggregators' Handbook. Edition May 1, 2010.

3. Daguerreobase API (Application Programming Interface)

With its extensive experience in facilitating the cultural heritage sector, consortium partner PIM implemented a collection management system, built for connecting metadata and collections. To create advanced metadata, the collection management system uses a data entry tool. The collection management system provides the ability to use and manage triple relations. Triple relations are a core part of connecting the information in the Daguerreobase to the semantic web. To make use of the possibilities of Linked Open Data thesauri are built following the SKOS (Simple Knowledge Organization System) methodology. Within the proposed collection management system the user is able to manage all used thesauri.

3.1. Data

Data is used to describe both images and metadata. The consortium decided to aggregate all images available for a daguerreotype and all metadata available as described in the simple form in Memorix Maior, the collection information system for the daguerreobase. The new API facilitates in the transition between the old and the new database. The old database was, during the development of the new database, used to aggregate content. When the renewed database was completed new aggregated content can be added without difficulty by the use of an API. This is a vice versa relationship, the API can also be used to enhance the Europeana portal and other portals. When the mapping to EDM was made not all fields that are available in the simple form in Memorix Maior could be mapped to EDM. This mapping will be described in detail in D5.5.

3.2. OpenSearch

For the API we use the existing standard called "OpenSearch". OpenSearch is a collection of technologies that allow publishing of search results in a format suitable for syndication and aggregation. It is a way for Daguerreobase to publish search results in a standard and accessible format.

The OpenSearch description document format is mapped to the metadata model of the Daguerreobase database so that it can be used by search client applications.

The OpenSearch response elements can be used to extend existing syndication formats, such as RSS and Atom, with the extra metadata needed to return search results.

3.2.1. Why use OpenSearch?

The web is a large place, and search engines that crawl the surface of the web are picking up only a small fraction of the great number of content that is available. Moreover, some of the richest and most interesting content can't even be crawled and indexed by one search engine or navigated by one relevancy algorithm alone. This is especially the case for Daguerreobase, since the metadata model of Daguerreotypes is an extended one.

Different types of content require different types of search engines. The best search engine for a particular type of content is frequently the search engine written by the people that know the content the best. OpenSearch helps the search engines of Daguerreobase and search clients wishing to use the Daguerreobase metadata communicate by introducing a common set of formats to perform search requests and syndicate search results.

3.2.2. OpenSearch and Daguerreobase

For this project we defined a field set on which can be searched and also a set of fields that will be displayed. Not all fields will be available due to privacy or other issues. Other fields are not available because they are too specific to search on.

Fields that can be searched on by the website and OpenSearch

Entity daguerreotype	title	Entity collection
ID	subject_name	identifier
identification	subject_location	description
dated_begin	inscription	
dated_end	window_shape	Entity creator
number_of_plates	housing_shape	name
stereo_plates	tags	notes
type		country
image_description		nationality

This list of fields can be increased on demand when needed for research of education.

Fields that are shown on the website

Entity daguerreotype	'rightholder',	Entity creator
'dated_begin',	'stereo_plates',	'name',
'dated_end',	'window_size_width',	'notes',
'dated_source',	'window_size_height',	'role'
'identification',	'window_size_type',	
'dated_source',	'window_size',	Entity plate
'number_of_plates',	'housing_size_width',	'plate_edge_top',
'remarks_general',	'housing_size_height',	'plate_edge_right',
'assessments',	'housing_size_depth',	'plate_edge_bottom',
'provenance',	'housing_size_type',	'plate_edge_left',
'title',	'housing_size',	'plate_corner_topleft',
'description',	'window_shape',	'plate_corner_topright',
'image_description',	'housing_shape',	'plate_corner_bottomright',
'subject_name',		'plate_corner_bottomleft',
'inscription',	Entity collection	'securing_paper_or_tape_fixed_to'
'keyword_technique',	'identifier',	'securing_paper_or_tape_type',
'copyrights',	'description'	'securing_paper_or_tape_shape',

'securing_paper_or_tape_edges',
 'securing_paper_or_tape_color',
 'securing_retained_by_housing',
 'surface_applied_coloring_type',
 'surface_goldtoning_present',
 'surface_coating_present',
 'surface_applied_coloring_present'
 'number',
 'plate_size_other',
 'polishing_lines',
 'perforation_number',
 'annotation',
 'remarks',
 'surface_goldtoning_present',
 'surface_coating_present',
 'surface_applied_coloring_present'
 'securing_retained_by_housing',
 'shape',
 'plate_edge_top',
 'plate_edge_right',
 'plate_edge_bottom',
 'plate_edge_left',
 'plate_corner_topleft',
 'plate_corner_topright',
 'plate_corner_bottomright',
 'plate_corner_bottomleft',
 'size',
 'material',
 'backplate_surface',
 'surface_applied_coloring_type',
 'perforation_location',
 'securing_adhesive_fixed_to',
 'securing_adhesive_place',
 'securing_paper_or_tape_fixed_to',
 'securing_paper_or_tape_type',
 'securing_paper_or_tape_shape',
 'securing_paper_or_tape_edges',
 'securing_paper_or_tape_color',

Entity assessment

'previous_altering',
 'treated',
 'date_altering_start',
 'date_altering_end',
 'frame',

'housing',
 'remarks',
 'signs',
 'treated_type',

Entity mat

'spacing_paper',
 'spacing_paper_painted',
 'spacing_paper_texture',
 'spacing_paper_type',
 'spacing_paper_color',
 'material',
 'color',
 'decoration',
 'decoration_texture',
 'decoration_type',
 'window_edge_type',
 'window_edge_color',
 'top_mat_color',
 'spacing_paper_type',
 'spacing_paper_color',
 'decoration_design',
 'number',
 'spacing_paper_painted',
 'spacing_paper_texture',
 'painted',
 'spacing_paper',

Entity case

'cover_retainer_material',
 'cover_retainer_color',
 'cover_retainer_present',
 'cover_insert_material',
 'cover_insert_color',
 'cover_insert_present',
 'cover_cushion_present',
 'cover_rails_present',
 'cover_rails_decoration_present',
 'cover_rails_decoration_remarks',
 'hinges_material',
 'hinges_attached_by',
 'hinges_orientation',
 'hinges_number',
 'material',
 'exterior_covering_material',

'type',
 'shape',
 'parts',
 'material_decoration',
 'material_colour',
 'hinges_material',
 'hinges_attached_by',
 'hinges_orientation',
 'closure_mechanism',
 'closure_decoration',
 'rail_decoration_lid',
 'cover_rail_decoration',
 'cushion_material',
 'cushion_color',
 'cushion_decoration',
 'tray_retrainer_material',
 'tray_retrainer_color',
 'insert_material',
 'insert_color',
 'cover_retainer_material',
 'cover_retainer_color',
 'cover_insert_material',
 'cover_insert_color',
 'clasps_number',
 'hinges_number',
 'rails_decoration_remarks',
 'cover_rails_decoration_remarks',
 'interior_tray_retainer_present',
 'rails_present',
 'cover_cushion_present',
 'cover_retainer_present',
 'cover_insert_present',
 'cover_rails_present',
 'cover_rails_decoration_present',
 'metal_foil_preserver_present',

Entity binding

'color',
 'material',
 'texture',
 'assembly',
 'mat_active',
 platemark
 'silver_content_present',
 'silver_content_combined',

'silver_content_location',	'mounting_attached_to',	'line_colour',
'silver_content_number',	'mounting_eye_shape',	'size_width',
'silver_content_additional_details',	'mounting_eye_material',	'size_height',
'manufacturer_present',	'mounting_ribbon_material',	'size_thickness',
'manufacturer_partly_visible',	'window_size_type',	'size_type',
'manufacturer_location',	'window_size_width',	'size',
'silver_content_present',	'window_size_height',	'lines',
'silver_content_combined',	'window_size_depth',	
'silver_content_location',	'window_size'	Entity backing
'silver_content_number',	'rebate_size_type',	'hangingsystem_ribbon_color',
'silver_content_additional_details',	'rebate_size_width',	'hangingsystem_ribbon_material',
	'rebate_size_height',	'hangingsystem_eye_shape',
Entity frame	'rebate_size_depth',	'hangingsystem_eye_material',
'mounting_type',	'rebate_size'	'hanging_system_present',
'mounting_attached_to',		'material',
'mounting_eye_shape',	Entity finishingpaper	'assembly',
'mounting_eye_material',	'color',	'access_panel_lock',
'mounting_ribbon_material',	'design',	'hangingsystem_ribbon_color',
'material',	'texture',	'hangingsystem_ribbon_material',
'colour',		'hangingsystem_eye_shape',
'style',	Entity covering_glass	'hangingsystem_eye_material',
'ribbon_material',	'present',	'description',
'ribbon_color',	'painted',	'label_annotations',
'decoration_style',	'strass',	'recessed',
'decoration_locally',	'colour',	'access_panel_present',
'covering_finish',	'border_colour',	'hanging_system_present',
'innerfinish',	'shape',	'finishing_paper_present',
'mounting_type',	'decoration',	

3.2.3. Education API/Open Search

The information gathered in the Daguerreobase project provides a valuable resource for research and education. Although implementing a full e-learning capacity is besides the scope of this proposal it is significant to understand the underlying possibilities. It is important to the long-term sustainability of the project to offer rudimentary facilities to use the information stored and generated by the Daguerreobase database for future educational purposes. For example, many images are available in de Daguerreobase about inside elements like a mat, plate, plate mark and etcetera. In many occasions, students or researchers cannot open the case of frame of a daguerreotype. By Open Search tools they can search for specific terms like “multi paper mats” and view related images.

3.3. Europeana API²

By participating in Europeana, the rich content of the Daguerreobase will be available through the Europeana API. This way the content of the Daguerreobase can be combined with other cultural heritage information of other contributing European institutes. The Europeana API allows building applications, websites and mash-ups that include a customised view of Europeana content. The user can choose how much information is shown, where, and in what format. Users have to start developing their your own applications by registering for an API key. To find out how users can benefit from the Europeana API services, Europeana is providing a leaflet³ and a video with instructions⁴.

3.3.1 Specifications of the implemented and tested API

Discovery

The auto-discovery of the opensearch end-point is done by the appropriate link in the <head> tag of the search pages. This will link to a description document.

```
<head>
  <!-- ... -->
  <link href="http://www.daguerreobase.org/en/opensearch-description" rel="search"
  type="application/opensearchdescription+xml" />
  <!-- ... -->
</head>
```

For each language on the website there will be a separate description document, containing the same content but with different links, so that the results will be served in the appropriate language.

Description document

The description document contains a link in both “application/rss+xml” and “text/html” both of which will supply only results in the specified language.

It also contains an example on how to search on all records and how to search on a specific search term.

The result page is published as Linked Open Data in RKD/XML and will be described in more detail in D5.4.

```
<OpenSearchDescription xmlns="http://a9.com/-/spec/opensearch/1.1/" xmlns:dc="http://purl.org/dc/elements/1.1/">
  <ShortName>Daguerreobase</ShortName>
  <dc:relation href="http://www.daguerreobase.org/" />
  <Description>
```

² The Europeana API (Application Programming Interface) is a web service that provides remote access to the Europeana collections. The Europeana API allows building applications, websites and mash-ups that include a customised view of Europeana content.

³ API Leaflet DefVer.pdf

⁴ <http://pro.europeana.eu/api>

```

    daguerreobase (OpenSearch API)
</Description>
<Developer>picturae.com Picturae</Developer>
<OutputEncoding>UTF-8</OutputEncoding>
<InputEncoding>UTF-8</InputEncoding>
<SyndicationRight>open</SyndicationRight>
<AdultContent>>false</AdultContent>
<language>en-GB</language>
<Tags>joomla, Joomla</Tags>
<Contact>"Daguerreobase", "info@daguerreobase.org"</Contact>
<Url type="application/opensearchdescription+xml"
    rel="self"
    template="http://www.daguerreobase.org/en/opensearch-description"/>
<Url
    indexOffset="0"
    type="application/rss+xml"
    rel="results"
    template="http://www.daguerreobase.org/en/opensearch/start/{startIndex?}?q_searchfield={searchTerms}"
    />
<Url
    indexOffset="0"
    type="text/html"
    rel="results"
    template="http://www.daguerreobase.org/en/browse/start/{startIndex?}?q_searchfield={searchTerms}"/>

<Query role="example" searchTerms="*:*" title="Show all records"/>
<Query role="example" searchTerms="sample" title="Search on the word 'sample'"/>
<Attribution>
    All content Copyright 2014, Daguerreobase    </Attribution>
</OpenSearchDescription>

```

4. OAI API

A full OAI-PMH implementation is available. The base url of this api is:

<http://api.memorix-maior.nl/collectiebeheer/oai-pmh/key/de1cc7ec-a2dc-11e3-a54d-3860770fff49/tenant/dag>

The service uses oai_dc as metadata prefix which results in the following location for all records.

http://api.memorix-maior.nl/collectiebeheer/oai-pmh/key/de1cc7ec-a2dc-11e3-a54d-3860770fff49/tenant/dag?verb=ListRecords&metadataPrefix=oai_dc

Resumption tokens used in the OAI don't expire. The resumption tag always contains an completeListSize attribute showing the accurate number of records.

Both the ListRecords and GetRecord pages show the same information, which uses the same making of the fields from the daguerreobase fields to Dublin Core as in the opensearch API.

See below for an example of such a record:

<http://api.memorix-maior.nl/collectiebeheer/oai-pmh/key/de1cc7ec-a2dc-11e3-a54d-3860770fff49/tenant/dag?verb=ListSets>

```
- <OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/ http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2014-05-13T09:48:23Z</responseDate>
  - <request verb="ListSets">
    http://api.memorix-maior.nl/collectiebeheer/oai-pmh/key/de1cc7ec-a2dc-11e3-a54d-3860770fff49/tenant/dag
  </request>
  - <ListSets>
    - <set>
      <setSpec>daguerreobase</setSpec>
      <setName>Daguerreobase</setName>
      - <setDescription>
        - <oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
          <dc:title>Daguerreobase</dc:title>
          <dc:description>Daguerreobase</dc:description>
        </oai_dc:dc>
      </setDescription>
    </set>
  </ListSets>
</OAI-PMH>
```

Listing a specific set of records will result in a list as below:

```
- <OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/ http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2014-05-16T11:13:43Z</responseDate>
  - <request verb="ListRecords" metadataPrefix="oai_dc">
    http://api.memorix-maior.nl/collectiebeheer/oai-pmh/key/de1cc7ec-a2dc-11e3-a54d-3860770fff49/tenant/dag
  </request>
  - <ListRecords>
    - <record>
      - <header>
        - <identifier>
          57f8e2da-c9fc-11e3-9221-432519f2dbd2:57f8e2da-c9fc-11e3-9221-432519f2dbd2
        </identifier>
      </header>
      - <metadata>
        - <oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
          + <edm:Timespan default:about="#5375673902754"></edm:Timespan>
          + <edm:ProvidedCHO></edm:ProvidedCHO>
          + <edm:Agent rdf:about="#agent_63a4ac22-c9fc-11e3-abc4-b3beacf03542"></edm:Agent>
          + <edm:Agent rdf:about="#agent_6455e758-c9fc-11e3-8bf9-f7b98bd58009"></edm:Agent>
          + <ore:Aggregation rdf:about="http://daguerreobase.org/type/57f8e2da-c9fc-11e3-9221-432519f2dbd2"></ore:Aggregation>
          + <edm:WebResource rdf:about="http://images.memorix.nl/dag/thumb/250x250/bf9a0e6f-8e8c-5979-e583-c98c0ebb6cf4.jpg">
            </edm:WebResource>
          + <edm:WebResource rdf:about="http://images.memorix.nl/dag/thumb/250x250/d7dc9b4e-d8b0-3920-2b22-f0277b59db75.jpg">
            </edm:WebResource>
        </oai_dc:dc>
      </metadata>
      <about> </about>
    </record>
    + <record></record>
    + <record></record>
    + <record></record>
  </ListRecords>
</OAI-PMH>
```

A rdf description of one record will be presented as the example below:

```

- <rdf>
- <edm:Timespan default:about="#5375673902754">
  <edm:begin>1855</edm:begin>
  <edm:end>1855</edm:end>
</edm:Timespan>
- <edm:ProvidedCHO>
  <dc:date rdf:resource="#5375673902754"/>
  - <dc:description>
    Pendant of CRE2; J.W. Blom and S.W.V. Kiebert married in 1956; [referencenumber acquisition:] AWI-2007-4;
  </dc:description>
  - <dc:description>
    Framed daguerreotype. Portrait of J.W. Blom in 1855.
  </dc:description>
  <dc:title>Justina Wilhelmina Blom (1832-1916)</dc:title>
  <dc:subject>portrait;woman</dc:subject>
  <dc:subject>Blom, Justina Wilhelmina</dc:subject>
  <dc:subject>person</dc:subject>
  <dc:subject>Annotation</dc:subject>
  <dc:identifier>57f8e2da-c9fc-11e3-9221-432519f2dbd2</dc:identifier>
  <dc:identifier>NFM-CRE1</dc:identifier>
  <edm:type>IMAGE</edm:type>
  <dc:type>daguerreotype</dc:type>
  <dc:language>English</dc:language>
  <dc:creator rdf:resource="#agent_63a4ac22-c9fc-11e3-abc4-b3beaf03542"/>
  <dc:creator rdf:resource="#agent_6455e758-c9fc-11e3-8bf9-f7b98bd58009"/>
</edm:ProvidedCHO>
- <edm:Agent rdf:about="#agent_63a4ac22-c9fc-11e3-abc4-b3beaf03542">
  <skos:prefLabel>Dr. Schneider</skos:prefLabel>
  <foaf:name>Dr. Schneider</foaf:name>
  <skos:note>Dr. Schneider Linkstr. 9 Berlin</skos:note>
</edm:Agent>
+ <edm:Agent rdf:about="#agent_6455e758-c9fc-11e3-8bf9-f7b98bd58009"></edm:Agent>
- <ore:Aggregation rdf:about="http://daguerreobase.org/type/57f8e2da-c9fc-11e3-9221-432519f2dbd2">
  <edm:isShownAt>http://images.memorix.nl/dag/thumb/250x250/</edm:isShownAt>
  - <edm:isShownBy>
    http://daguerreobase.org/type/57f8e2da-c9fc-11e3-9221-432519f2dbd2
  </edm:isShownBy>
  <edm:provider>Daguerreobase</edm:provider>
  <edm:dataProvider>Daguerreobase</edm:dataProvider>
  <edm:rights rdf:resource="http://creativecommons.org/licenses/by/4.0/">Creative Commons – Attribution – (BY)</edm:rights>
  <edm:hasView rdf:resource="http://images.memorix.nl/dag/thumb/250x250/bf9a0e6f-8e8c-5979-e583-c98c0ebb6cf4.jpg"/>
  <edm:hasView rdf:resource="http://images.memorix.nl/dag/thumb/250x250/d7dc9b4e-d8b0-3920-2b22-f0277b59db75.jpg"/>
</ore:Aggregation>
+ <edm:WebResource rdf:about="http://images.memorix.nl/dag/thumb/250x250/bf9a0e6f-8e8c-5979-e583-c98c0ebb6cf4.jpg"></edm:WebResource>
+ <edm:WebResource rdf:about="http://images.memorix.nl/dag/thumb/250x250/d7dc9b4e-d8b0-3920-2b22-f0277b59db75.jpg"></edm:WebResource>
</rdf>

```