



Europeana
foundation

We transform the world with culture!

Fiesole Retreat

Martina Bagnoli

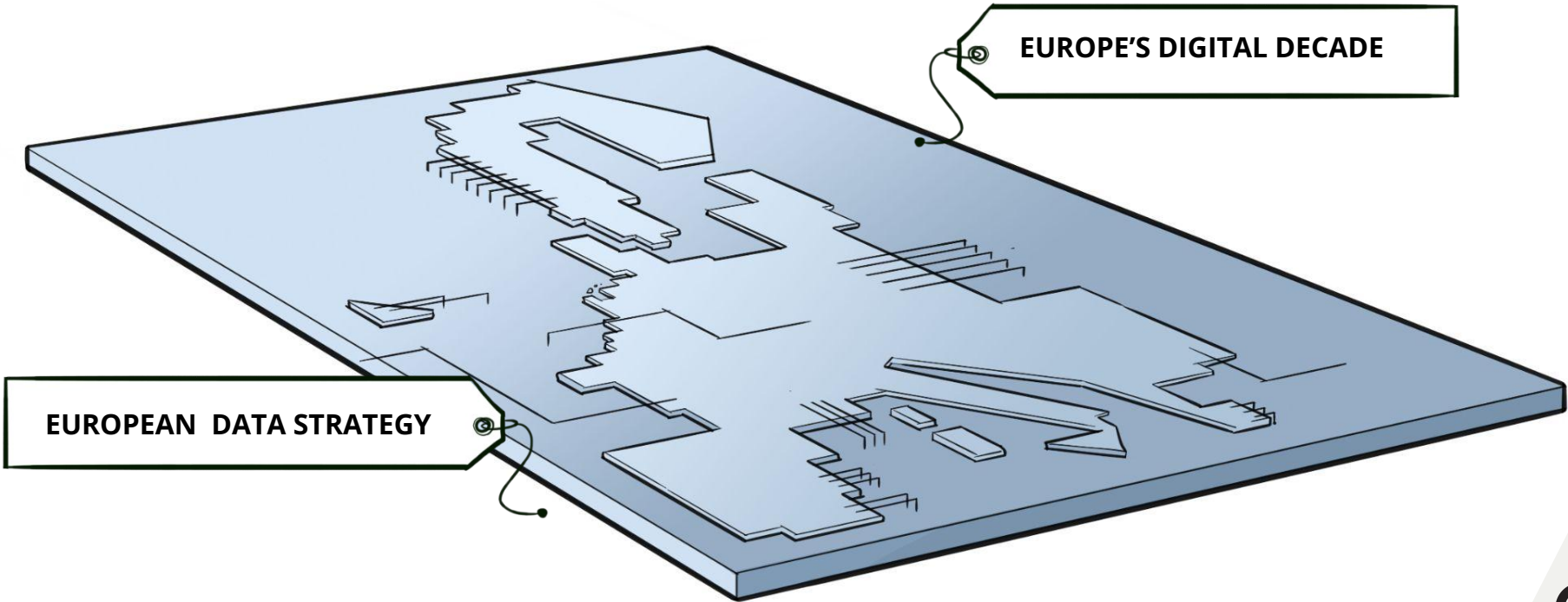
Chair Europeana Foundation Supervisory Board



Co-financed by the Connecting Europe
Facility of the European Union

THE PLANS OF THE EUROPEAN COMMISSION

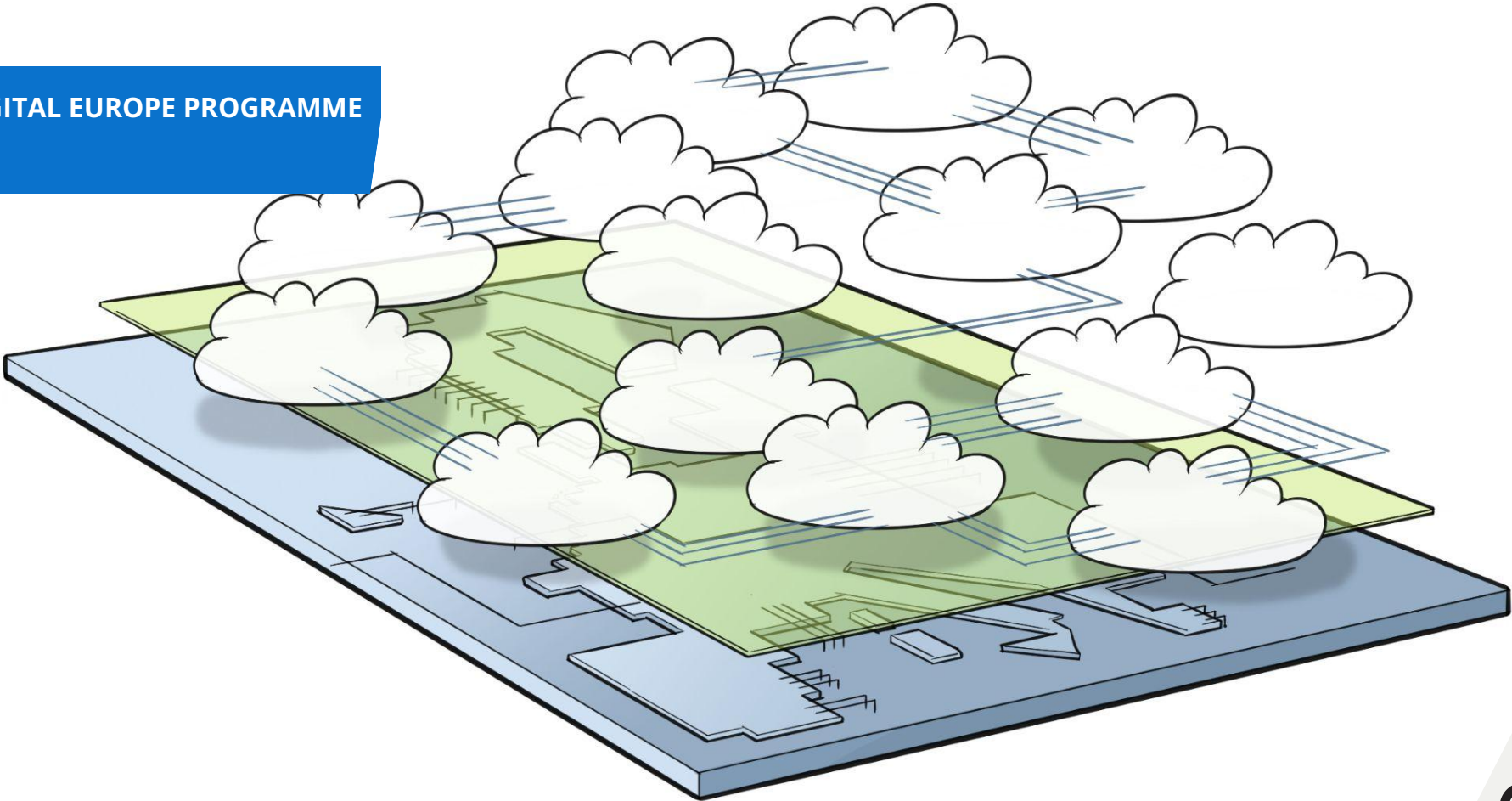
DIGITAL SINGLE MARKET



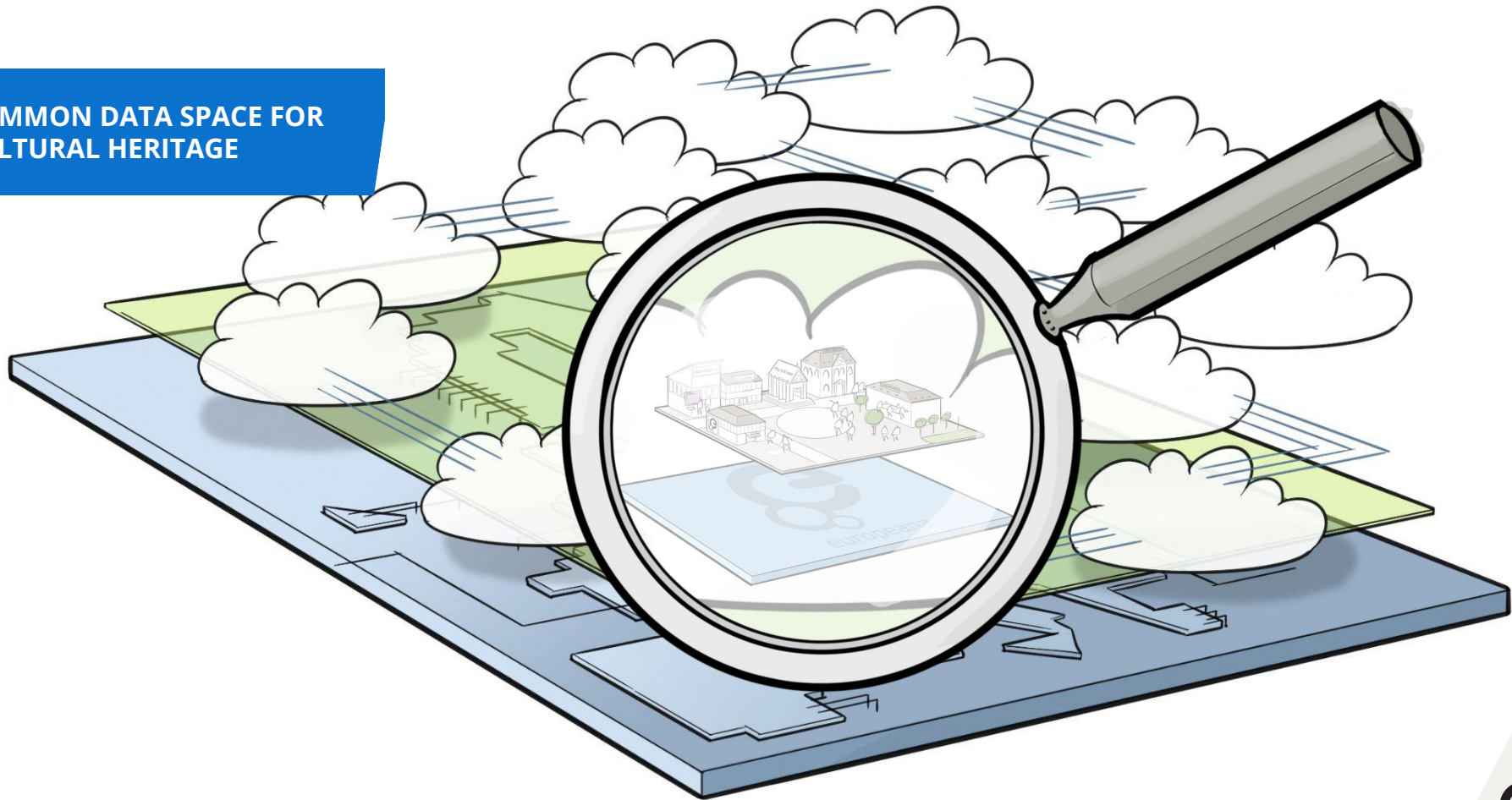
EUROPEAN DATA STRATEGY

EUROPE'S DIGITAL DECADE

DIGITAL EUROPE PROGRAMME



**COMMON DATA SPACE FOR
CULTURAL HERITAGE**



COMMON DATA SPACE FOR CULTURAL HERITAGE



“Digitise in 3D all monuments and sites (at risk) and 50% of all monuments and sites that are most visited”

“Member States should ...support and raise awareness of Europeana among the general public and particularly in the education sector and schools”

“All public funding for future digitisation ...should be made conditional upon making digitised content available in Europeana and the data space”

OUR PURPOSE

*Our work helps to develop an open,
knowledgeable and creative society*

TWO CHALLENGES FOR OPERATING THE DATA SPACE



MULTILINGUAL CHALLENGE

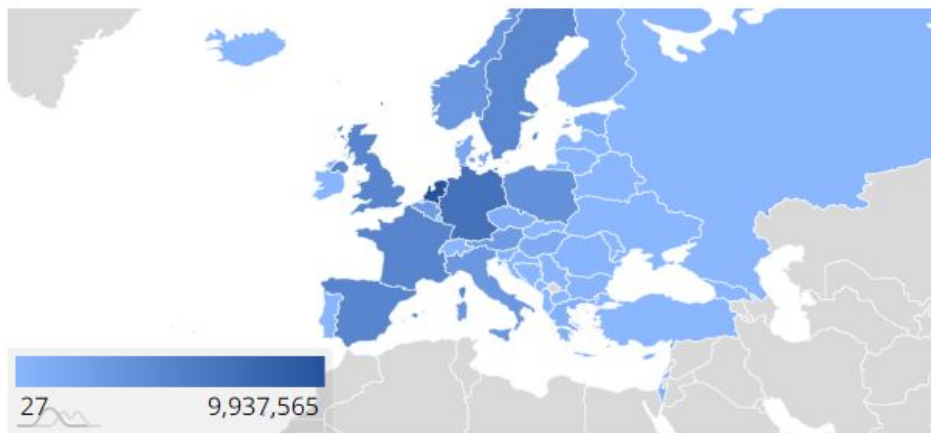
Kreenholmi Manufaktuur, Viimistustavabriku toodangu näidis by Kreenholmi Manufaktuur (valmistaja) - 1991 - Eesti Sõjamuuseum - Kindral Laidoneri Muuseum, Estonia - CC0.



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A MULTILINGUAL EUROPEANA

Diversity of collections across Europe

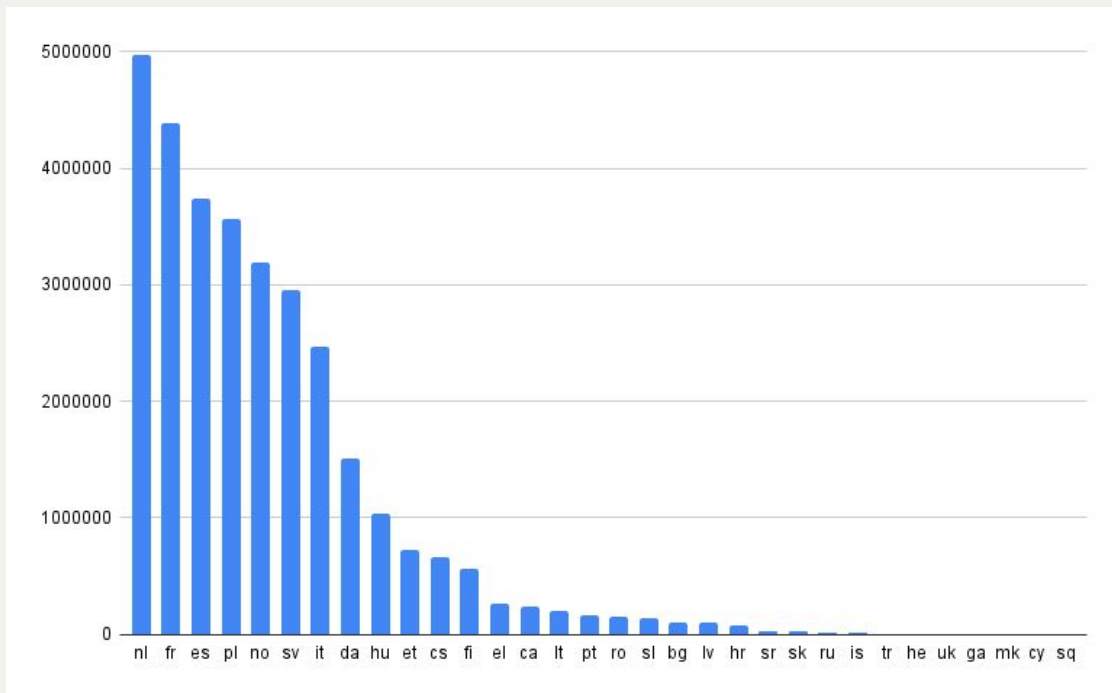


COUNTRY	RECORDS PROVIDED	
Netherlands	9,937,565	16.43%
Germany	6,797,422	11.24%
France	4,901,356	8.1%
Spain	4,865,263	8.04%
United Kingdom	4,782,563	7.91%
Sweden	4,505,121	7.45%
Poland	3,632,510	6%
Norway	3,189,059	5.27%

[View by countries >](#)

A MULTILINGUAL EUROPEANA

Collections described in more than 38 languages



MULTILINGUAL EXPERIENCE AT EUROPEANA

Navigate the
Europeana website
in 24 official EU
language + Basque



Read editorial
content



Read item text



Search Europeana



PROGRESS WE HAVE MADE

Navigate the Europeana website

Users can benefit from translation of UI in their own language (24 EU official languages + Basque)

Always require adaptation to new features and to feedback

Read editorial content

Users of the Europeana website have access to more and more editorials in their own languages.

Percentage of exhibitions published in more than one language increased from 50% to 64%.

Read item text

Users of the website can translate on the fly the metadata description of an item in their language of choice.

Item translation feature released in October 2021

Search Europeana

With the 'Spanish search pilot', a user searching the Spanish version of Europeana will obtain more results described in English in addition to the Spanish ones.

Spanish to English translation implemented in the Spanish version of Europeana in December 2021

Overall multilingual strategy

Paid or volunteer static translations to user language

Read editorial content

User on a language-specific Europeana portal

Navigate the website

Automatic, paid or volunteer translation of Europeana UI to user language

Search

Live machine translation of query to English

Query in user language
+ Query in English

Exploit multilingual vocs & add static English (pivot) translation

Multilingual (meta)database and search index

Read item text

Language-specific item page

Live machine translation from English to user language

slide adapted from Paolo Scalia

ITEM TRANSLATION

VIEW ITEM METADATA IN DIFFERENT LANGUAGE

Enable users of the website to translate on the fly the metadata description of an item to their language of choice

- For all 24 official EU languages
- Using real-time translation service (Google for now)

SPANISH SEARCH PILOT

MULTILINGUAL SEARCH

- This pilot is meant to help test translation of search queries
- Validating implementation for one language allows us to put aside some issues raised by multilinguality on the entire process

E.g. no translation of metadata to English

- It enables us to focus work on some components and get something visible for them much earlier

epidemias - Buscar

Categoría ▾ Tipo de medio ▾ ¿Puede reutilizarse? ▾ País proveedor ▾ Más filtros

Resultados: 1,559

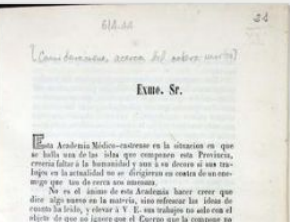


Don Esteban Mandillo
Alcalde Constitucional de esta capital y presidente de su M. I. Ayunt...
Santa Cruz de Tenerife. Ayuntamiento
Universidad de La Laguna

- Spain (1,518)
- Europe (11)
- Germany (9)
- Czech Republic (8)
- Austria (5)
- Netherlands (4)
- Portugal (2)
- Italy (1)
- United Kingdom (1)

REINICIAR APLICAR

Páginas luctuosas
Ruiz Bustamante, Antonio
Universidad de La Laguna



Expedientes de epidemias
Galiciana. Arquivo Dixital de Galicia

epidemias - Buscar

Categoría ▾ Tipo de medio ▾ ¿Puede reutilizarse? ▾ País proveedor ▾ Más filtros

Resultados: 2,017



Conquista y crisis demográfica: la población indígena del occidente de Guatemala en el sig...
IDUS. Depósito de Investigación de la Universidad de Sevilla



Saint Teliau, invoked during epidemics and fevers.
Wellcome Collection

- Spain (1,725)
- United Kingdom (63)
- United States of America (59)
- Germany (26)
- Bulgaria (24)
- Europe (20)
- Finland (17)
- Netherlands (15)
- Sweden (15)
- Hungary (14)
- Czech Republic (8)
- Austria (6)
- Serbia (6)
- Denmark (4)
- Ireland (2)
- Italy (2)
- Poland (2)
- Portugal (2)

REINICIAR APLICAR



CHALLENGES ENCOUNTERED

Wide scope of language to be covered (24 languages +1)

Quality of the underlying data is key (language information in the data)

Lack of automatic translation services suitable for Cultural Heritage data



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Арт. 29 *китен*
Рис. 1425
Вид 4

КММ 151: 86
Т42: 86

EUROPEANA EFFORTS TOWARDS AI



CONTEXT FOR AI ACTIVITIES

[Strategy 2020-2025](#): Application of Machine Learning for improving metadata automatically

[Machine Learning Discussion document](#): Identify strategic opportunities for Machine Learning projects and initiatives at Europeana

[Report from the Europeana taskforce on AI in relation to GLAM](#)

[Current AI related projects at Europeana](#)

- [Saint George on a Bike](#)
- [V4Design](#)
- [Europeana XX](#) provided the Recommendation Engine

A SERIES OF EXPERIMENTS

watermark:0.981

IMAGE SIMILARITY

Nearest Neighbor Plot 7

Query Image



PROPERTY MARKS DETECTION

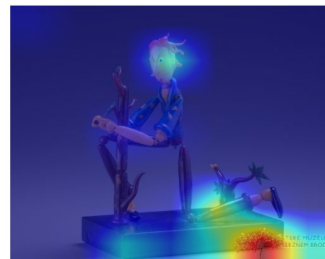


IMAGE RESOLUTION ENHANCEMENT

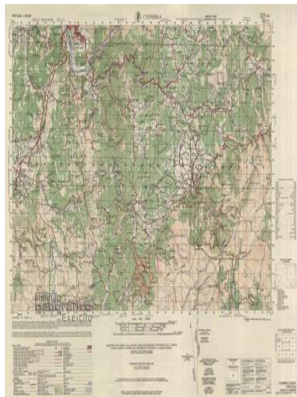
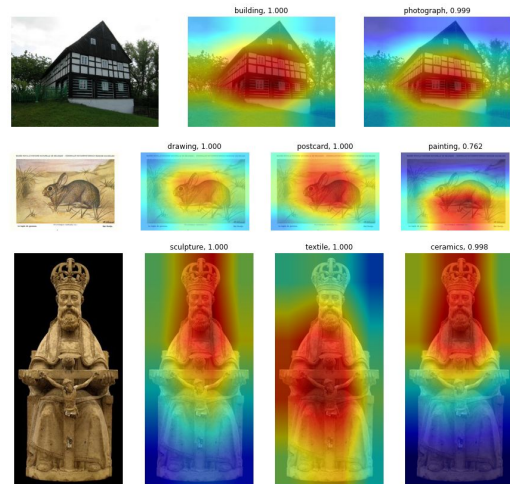
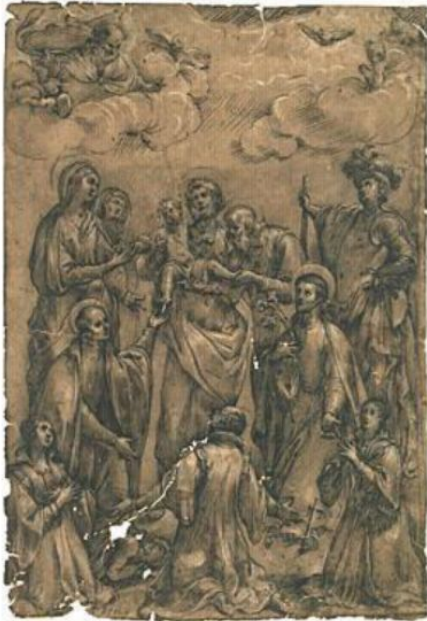


IMAGE TAGGING



FOCUS ON TWO EXPERIMENTS MOVING FORWARD

Enhancement of low-resolution images



- Opportunity to promote less good-looking collections after improvement
- Improve users' visual experience by providing bigger images and crisper thumbnails
- Improve the quality of collections (content) in Europeana for re-use


https://www.europeana.eu/en/item/03919/public_mistra_Lioconde_fr_ACTION_CHERCHER_FIELD_1_REF_VALUE_1_50350205321

FOCUS ON TWO EXPERIMENTS MOVING FORWARD

Enrichment of objects using image tagging



<http://data.europeana.eu/item/11604/LUCMUSXBONSODRFFXUHXFINLANDX41181014>
Pollinator (94.52%)
Butterfly (93.77%)
Insect (92.99%)
Arthropod (92.44%)
Moths and butterflies (85.27%)
Wing (75.24%)
Office ruler (72.71%)
Ruler (68.66%)
Symmetry (65.65%)
Invertebrate (63.80%)
=====



http://data.europeana.eu/item/11647/_Botany_44D_32089
Plant (94.56%)
Botany (87.92%)
Branch (87.48%)
Twig (86.46%)
Terrestrial plant (85.93%)
Flowering plant (72.69%)
Font (69.41%)
Subshrub (66.00%)
Art (60.21%)
Plant stem (58.62%)

- Image-based enrichment is independent from the quality of metadata
- Improve user experience by providing more data for display, search and metadata-based recommendation.

CHALLENGES ENCOUNTERED

Lack of annotated datasets

Difficulty to scale annotations efforts

Significant difference of quality between commercial and non commercial solutions