

An ancient Egyptian stone relief carving. The central figure is a seated woman, likely a deity or queen, wearing a long, pleated dress and a headscarf. She is flanked by two standing male figures, possibly deities or nobles, wearing short kilts and long, pleated shawls. The figures are rendered in a stylized, hieroglyphic manner. The relief is set against a light-colored stone background with some darker, possibly painted, areas.

3D content in Europeana: the challenges of providing access

Kate Fernie, 2Culture Associates and CARARE

Overview

- Some background about Europeana and CARARE
- Opening access to cultural heritage collections
- User expectations and experiences
- Providing access to 3D online

What is Europeana?

- Europe's platform for digital cultural heritage funded by the European Commission
- 50+ million items – photographs, videos, music, newspapers, text (books, reports, diaries, letters), spoken word and 3D
- Archaeology themed collections c. 1.5 million items

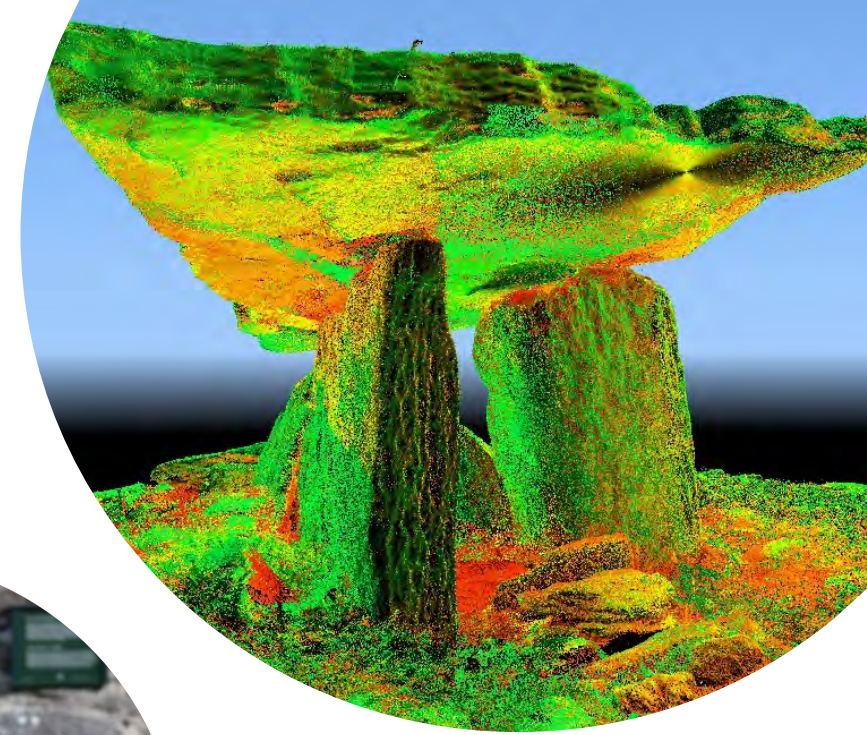
<https://www.europeana.eu>



Fragment of relief, Medalhavsmuseet, CC-BY

Some background about CARARE

- CARARE is a membership association and a Europeana aggregator for Archaeology
- Several members are active in 3D digitisation
- CARARE has been providing 3D content to Europeana since 2011-12
- We've experienced various developments in 3D over that time



<https://www.carare.eu>

Opening up collections

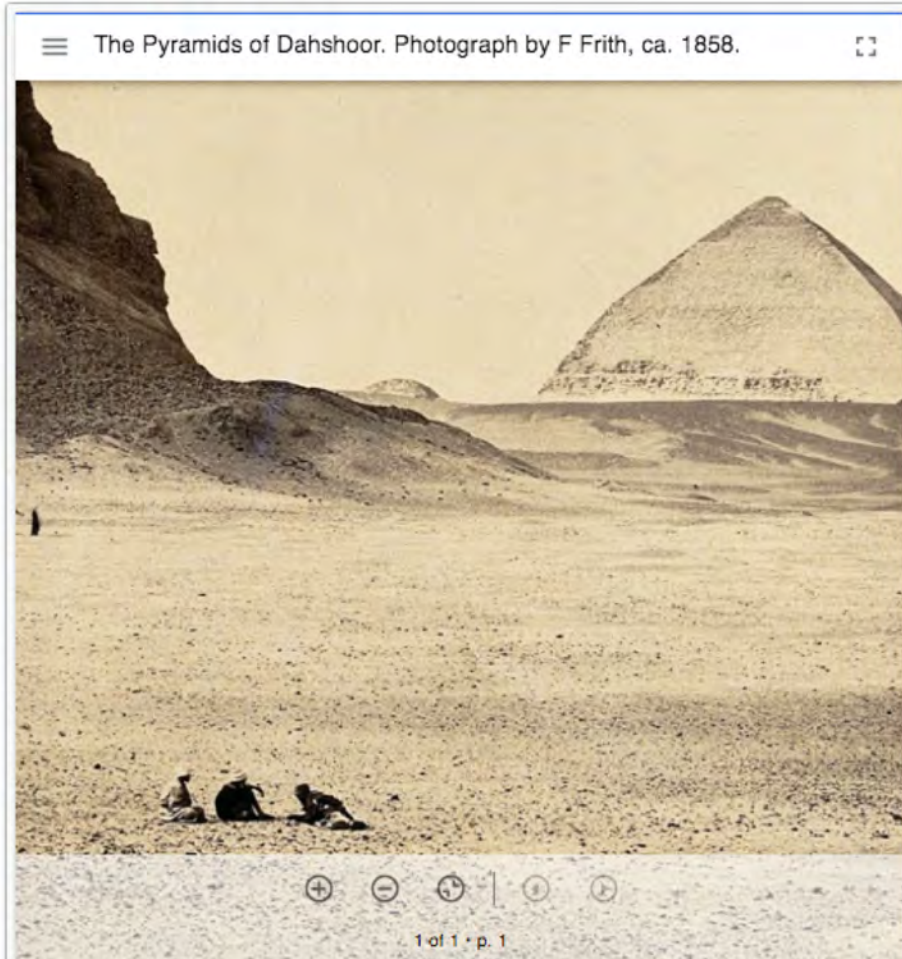
- Around 4000 cultural institutions, research institutions, private companies and others are sharing digital assets via Europeana
- Europeana works with partners on standardizing how it handles data and media formats
- Frameworks for interoperability and standardization of rights allow for re-use in education, research and creative industries



National Museum Stockholm,
Wiki loves Monuments, CC-BY-SA



The Pyramids of Dahshoor. Photograph by F Frith, ca. 1858.



Pyramids of Dashoor, Wellcome Collection, CC-BY

User experiences and expectations

- People are used to being able to view content immediately on their devices
- How easy it is for web platform developers to support this experience varies
 - Images and text documents are relatively easy
 - Video and audio are more complex
- Standardized formats and players help especially with delivering higher quality

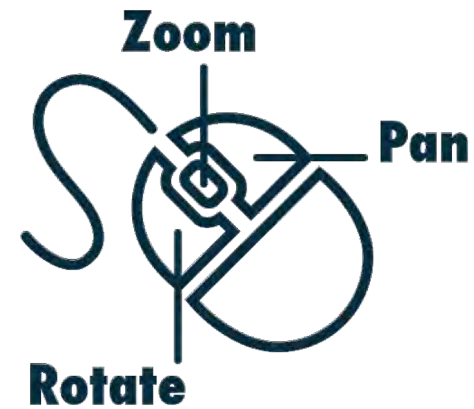
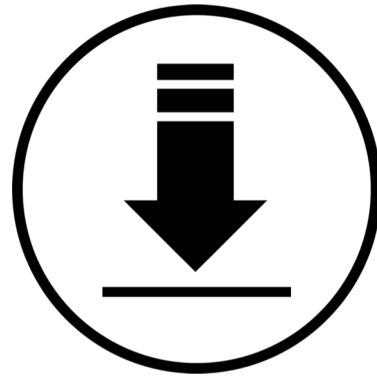
3D – going online

- Until fairly recently publishing 3D content online was considered to be an unsolved problem
- File sizes were vast, too heavy for speedy download
- Various different plugins or software had to be downloaded and installed before you could view



Bishops Gate, Derry, Northern Ireland
2015, Discovery Programme, CC-BY

What we hope users will find when they search for 3D in Europeana



Simple objects: user experience

- Explore objects from all sides
- Zoom in on details
- Show specific views (front, side, top)



3D pdf, model of Helmet from Peretu
Muzeul Național de Istorie a României, CCO

Complex objects: user experience



Castle of St Magdala de Pulpis, ADD&4D, InC

- Explore objects inside and out
- Interiors and complex scenes
- Zoom in on details
- Show specific views (virtual tours of features)

Reconstructions: user experience



- 3D and 4D visualization
- Explore scenes including landscapes and phases of a site
- Guided tours

Saint Salvator abbey and landscape, Visual Dimension, Inc

Technologies: supporting interaction online

- 3D PDF
 - 3D functionality (navigation, animation...) was promising c. 2011
 - No longer fully supported and has now been superseded
- Web GL/HTML5
 - Available across various platforms. No software to be installed
 - Various services have been developed
 - Nexus tools for streaming and visualizing large 3D models
 - Potree for rendering large point clouds
 - 3D HOP a framework for presentation of high resolution 3D models
 - Sketchfab hosting service which users Web GL for cross platform support
- IIIF 3D
 - Towards a framework for interoperability

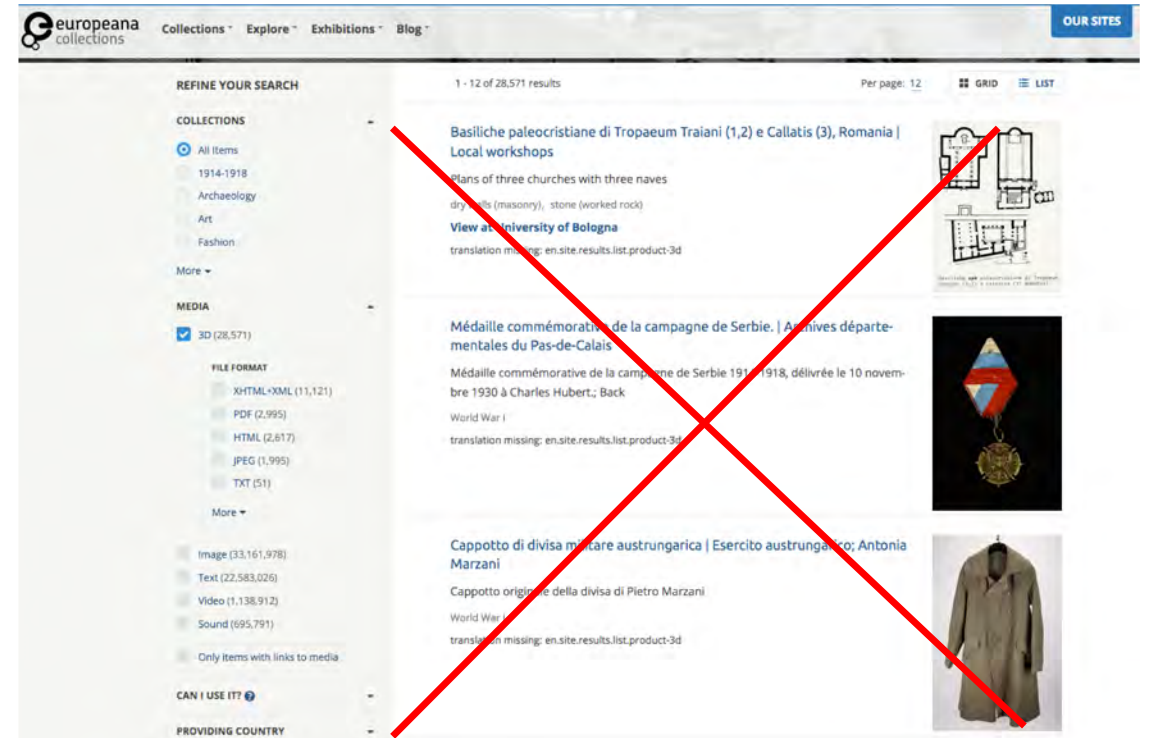
Challenges for Europeana



- There are 50+ 3D formats in use
- There are quite a lot of services now making 3D available online
- For video and audio files Europeana recommends use of oEmbed compliant viewers to serve up the content
- Any other viewer requires Europeana to implement a specific workaround

Increase understanding and improving the labelling of content

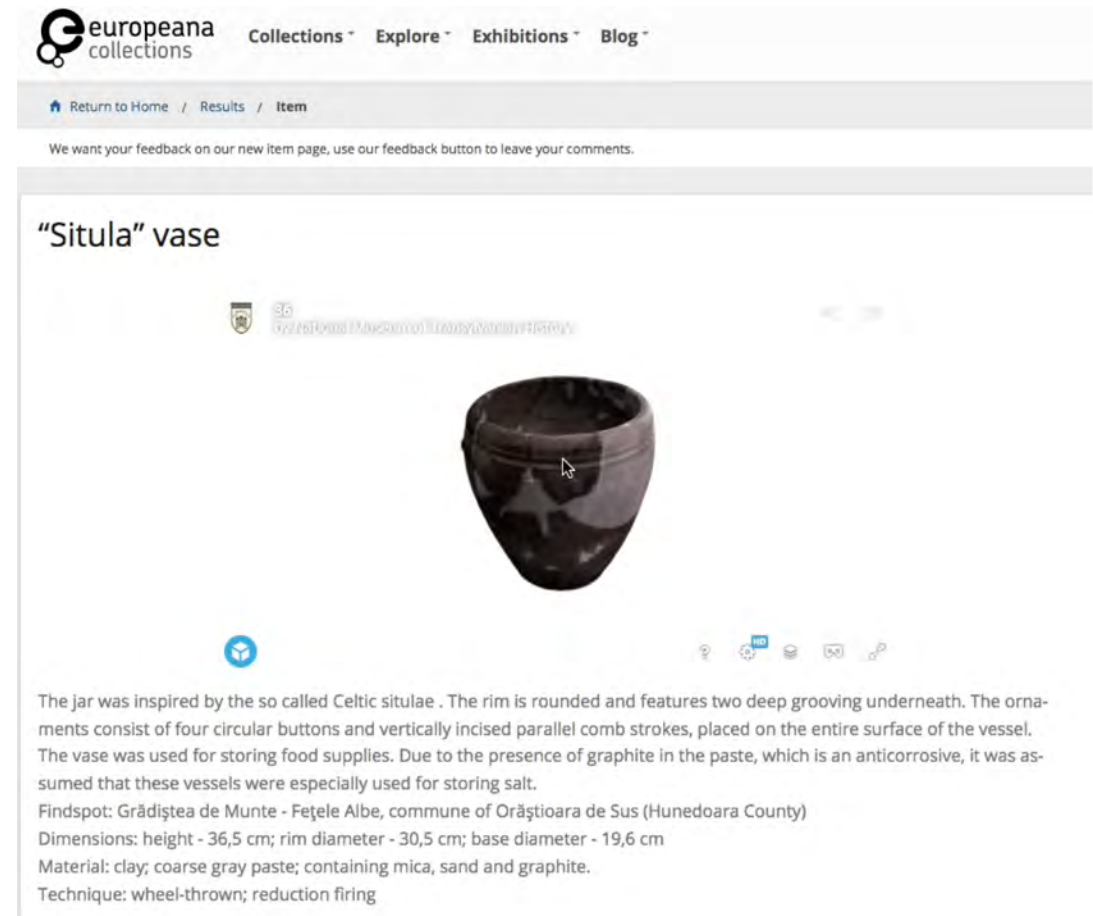
- We need to build capacity among cultural institutions
- To increase the amount of 3D
- And make sure the its correctly labelled



A misunderstanding lead some to label 2D images of three-dimensional real-world objects as being 3D

Increasing the support for in the Europeana site

- Implementing the Sketchfab viewer has allowed users to interact with 3D inside Europeana



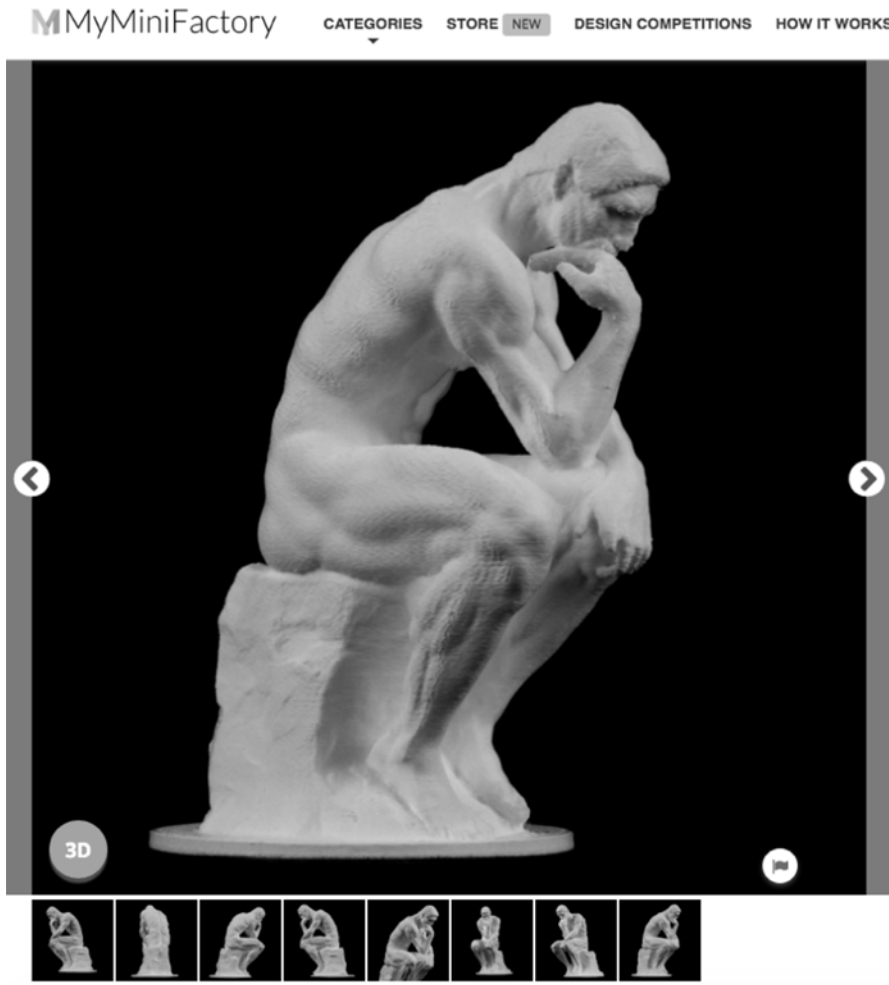
The screenshot shows the Europeana Collections website interface. At the top, there is a navigation bar with the Europeana Collections logo and links for 'Collections', 'Explore', 'Exhibitions', and 'Blog'. Below this is a breadcrumb trail: 'Return to Home / Results / Item'. A message states: 'We want your feedback on our new Item page, use our feedback button to leave your comments.' The main content area features the title '"Situla" vase' and a 3D model of a dark, rounded ceramic jar. The model is displayed in a Sketchfab viewer, with a mouse cursor hovering over it. Below the model, there is a detailed description in English, including the findspot, dimensions, material, and technique. The description reads: 'The jar was inspired by the so called Celtic situlae . The rim is rounded and features two deep grooving underneath. The ornaments consist of four circular buttons and vertically incised parallel comb strokes, placed on the entire surface of the vessel. The vase was used for storing food supplies. Due to the presence of graphite in the paste, which is an anticorrosive, it was assumed that these vessels were especially used for storing salt. Findspot: Grădiștea de Munte - Fețele Albe, commune of Orăștioara de Sus (Hunedoara County) Dimensions: height - 36,5 cm; rim diameter - 30,5 cm; base diameter - 19,6 cm Material: clay; coarse gray paste; containing mica, sand and graphite. Technique: wheel-thrown; reduction firing'.



Understanding the audiences

Children asylum seekers go to school, Felix Janssens, 1993, Stadsarchief 's-Hertogenbosc, CC-BY-SA

There can be more than one output



- 3D print formats are very good for engaging school children in science and technology
- Publishing via Sketchfab can be a good way of offering tours and virtual visits
- Researchers benefit from services like 3D HOP which offer tools for measuring objects
- File downloads are good for people starting their own project

Publishing is not the end of the story

- Publishing a model via Sketchfab, or any other service, is a way of making a version available
- Other versions can also be available via other services
- Files may be available for download
- The 3D project archive should also be deposited with an archive



Poul nabrone Portal Tomb, 3D model delivered by Sketchfab, Discovery Programme, CC-BY-NC-SA

As well as good 3D content

We need metadata

- to understand 3D content and the cultural that is represented
- To enable discovery and also preservation of the content

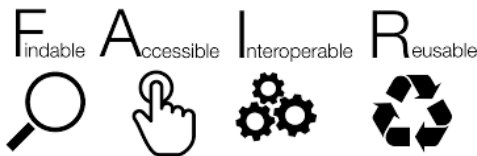
Yet metadata for 3D is often quite minimal

NO METADaTa
NO FUTURE

Can we move towards data FAIRness?

FAIR - a set of community principles to make data more easily findable, accessible, interoperable and re-usable

- Fairly well established for research data sets in Europe
- What does this mean for 3D?
- How do we begin to put this in practice?



To support better outcomes for users and preservation of 3D

Can we work towards:

- Identifying a limited set of common file formats that can easily be delivered, accessed and preserved
- Using those formats to guide selection of platforms for 3D delivery
- Support developments aimed at universal delivery
- Work together on standards for 3D and to improve interoperability between 2D and 3D
- Opening access

Thanks for your attention!

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