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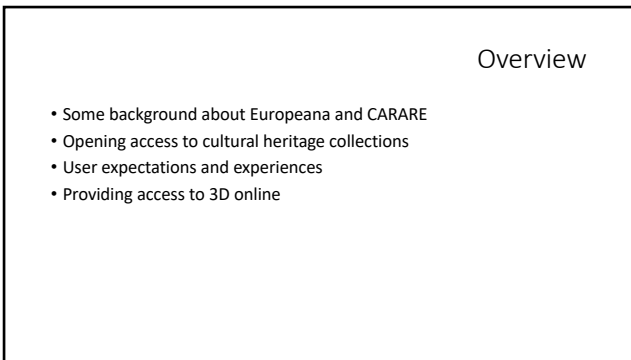
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Some background about CARARE

- 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>

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

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

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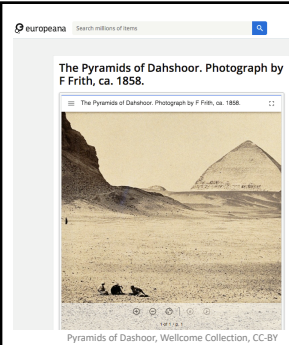
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Search millions of items

The Pyramids of Dahshoor. Photograph by F Fritch, ca. 1856.

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

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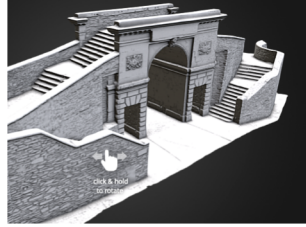
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### 3D – going online

- 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

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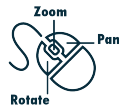
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### What we hope users will find when they search for 3D in Europeana



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### 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

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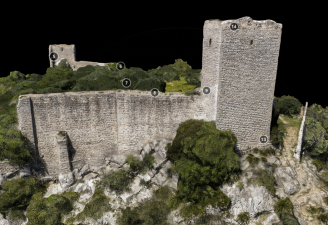
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Complex objects: user experience



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

Castle of St Magrada de Pulpis, ADD&4D, Inc

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Reconstructions: user experience



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

Saint Salvador abbey and landscape, Visual Dimension, Inc

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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 uses Web GL for cross platform support
- IIIF 3D
  - Towards a framework for interoperability

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### 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

<https://pro.europeana.eu/post/publishing-framework>

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### Task force on 3D content in Europeana

Aim is to increase the support for 3D in Europeana step by step



<https://pro.europeana.eu/post/3d-content-in-europeana-task-force-review>

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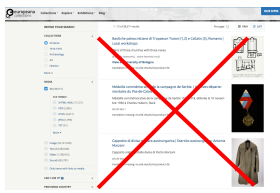
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### Increase understanding and improving the labelling of content

- 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

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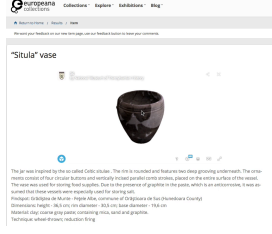
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### Increasing the support for in the Europeana site

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



The screenshot shows the Europeana website interface. At the top, there are navigation links for 'Europeana Collections', 'Explore', 'Institutions', and 'Blog'. Below the navigation bar, there is a search bar and a list of items. One item is highlighted, showing a 3D model of a 'Situla' vase. The model is a dark, rounded object with a handle. Below the model, there is a description in small text.

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Understanding the audiences

Children's asylum seekers' school, Felix Janssens, 1993. Stadsparchief 'S' - Historisch Centrum Gent

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### 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

<https://www.myminifactory.com/scantheworld/>

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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



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

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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



<https://share3d.eu/dashboard/>  
Karin Glasmann, National Museum of Sweden, CC-BY-NC-SA

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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?



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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

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Thanks for your attention!

[kfernie27@gmail.com](mailto:kfernie27@gmail.com)



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