

3D-Heritage.eu

3D-Heritage.eu is an open source-based application for handling the workflow high-quality 3D assets (3D models and point clouds). 3D-Heritage.eu allows secure storage large high-quality 3D assets, managing metadata of 3D assets, editing 3D assets and viewing of 3D assets on-line. Users can add and edit annotations to enable better presentation of physical asset in on-line 3D viewer. 3D viewer enables easy navigation around the 3D model and exact measurements (distance, height, cover). **3D-Heritage.eu is optimised for the needs of cultural heritage professionals.**

The platform **3D-Heritage.eu** integrates several modules and tools that form a cloud-based platform that is open, upgradable and facilitates the development and integration of additional modules and tools.

The core modules are:

3D model management

- **3D Viewer** – is on-line 3D viewer that allows easy to use view function (navigation, measurements, full screen mode), 3D editing (transformations, light settings, annotation management – heading, text, image, and navigation). Support for large, high resolution 3D models. Various formats gltf, .fbx, .obj and other.
- 3D model upload, 3D model conversion for progressive web viewing, storage.
- **Repository** - a graphical user interface for Asset management: 3D model upload and conversion, 3D model view and edit, advanced metadata management (asset metadata, technical metadata) harmonised with Europeana. Each model has licencing information that defines download and re-use possibilities.

3D metadata management

- Compliance with Europeana metadata model (EDM) and standards and 3D model aggregators (review option; generation of xml files for data exchange)
- Interoperability with Linked Open Data (WikiData, Geonames...)

Europeana interoperability:

- XML files for metadata exchange with Europeana via aggregators
- Use of **oEmbed** standard enables seamless integration of 3D viewer to any web site or platform.
- Europeana standards for licencing (CC BY, CC0, Public domain)

Other:

- User management: multi user and multilevel access
- Multi-language tool
- Search function
- API's support
- Public portal enables open and secure access to uploaded 3D models.

3D VIEWER

3D on-line viewer

- Upload of large 3D models:
 - o Conversion of 3D models
- 3D model viewer
 - o 3D renderer for 3D model visualisations
 - o GUI:
 - Tool bar
 - View: navigation (left, right, top, bottom, up, down, initial position), measurement (distance, height, angled, area, clear)
 - Edit: navigation (left, right, top, bottom, up, down, initial position), measurement, transformation (change model position, rotate the model, scale the model), background colour setting (transparent, colour, texture), thumbnail setting (screenshot, upload), lights settings (direction, point, spot), colour, position).
 - Annotations: position on a 3D model, text, picture, navigation
 - Notification: error/success message.

3D REPOSITORY

Management of 3D assets

- Upload and conversion of large 3D models
- Asset metadata (name, description, categories...)
 - o Historical periods –WikiData
 - o Locations – Geonames
- Technical metadata (triangles, Vertices, PBR, Textures, materials, UV Layers, Vertex Colors, Animations, rigged geometries, Scale transformation, size, data format, data type, accuracy)
- Descriptive technical metadata (resolution, number of photos, creation method, representation type, collection, price, provenance, year of creation, digital capture technology, digital capture hardware)
- Production metadata (rights owner, data provider, intermediate provider, client, rights holder, creator)
- Licences:
 - o Creative Commons
 - o Licence statements
- Direct download of 3D model directly from storage
- Aggregation to Europeana (metadata and 3D model preview)

3D HERITAGE

by ARCTUR

- Generation of xml for metadata exchange with Europeana via aggregator
- Thumbnails
- Embed (standard oEmbed) to any web page.
- Search (3D models and metadata: categories, historical periods, region, description, name)
- Review option
- Multilanguage: English and Slovenian
- User management

3D HERITAGE PORTAL

Public portal for display of (selected) 3D models

- Display of all 3D models (grid/map): 3D viewer – 3D model navigation & measurements, full screen
 - Display of metadata (asset metadata, 3D model metadata, technical metadata).
 - Additional multimedia files and descriptions
 - Search function
 - Embed - copy iFrame code
 - (Request) for 3D model file download
 - News section
- Content management system ADS by Arctur
 - Retrieval of metadata from repository via API
 - Embedding of 3D viewer via oEMBED to any web page/application.