

AR Tour Builder

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INTRODUCTION

The AR Tour Builder is a web application that supports the design of AR tours by associating 3D objects and other types of content (e.g., images, audio, text) to specific locations on a map. The builder is intended for CH professionals and other stakeholders who wish to prepare engaging experiences for their on-site visitors. The platform offers asset management capabilities, allowing users to pin content hosted on online platforms such as Europeana, the EUreka3D Data Hub or the CHI's own repository. The user can specify multiple tours for the same geographical area, organised as individual projects (e.g., short or longer tours, tours addressed to children, etc.). Each tour consists of a set of georeferenced points of interest, each of which can be associated with a set of various media assets and contextual information. The builder supports the creation of multilingual tours, where both the content and tour-specific information can be provided in multiple languages. Tours can be accessed on-site via the companion AR Tour Experience mobile app, which presents the curated multimodal content based on the user's geolocation. The focus is on outdoor experiences, enabling rich engagement with cultural sites through AR overlays, images, videos, audio, and textual content.

BY FOLLOWING THIS GUIDE, YOU WILL BE ABLE TO

- Create and manage custom AR tours using a browser.
- Define POIs for the tour on a map.
- Attach 3D models, images, audio, video and documents to POIs.
- Add multilingual explanatory text and audio associated with the POI and its connected assets.
- Preview tours before deployment.
- Test the tour you prepared on-site by using the accompanying AR Tour Experience app

THIS GUIDE IS INTENDED FOR

This guide is intended for:

- Curators and cultural heritage professionals of heritage sites
- Archives working with urban or landscape heritage
- Educators
- Tourism and local heritage stakeholders

BEFORE YOU START, YOU NEED

- A computer with a web browser
- Internet connection
- Access to open content assets hosted on an online platform (3D models, images, audio, texts)
- Optional: a draft or idea for a site or a route you want to tell a story about in AR

OVERVIEW OF THE WORKFLOW

The overall workflow involves the following steps:

1. The user creates a new project in AR Tour Builder.
2. They add Points of Interest (POIs) on a map.
3. A set of items of various formats, including 3D models, images, textual documents, and links can be added to each POI.
4. Short textual and audio explanations can be added as metadata in the desired language(s).
5. The tour can be tested on-site via the accompanying AR Tour Experience mobile app.

STEP-BY-STEP GUIDELINES

HOW TO ACCESS THE AR TOUR BUILDER?

The AR Tour Builder is available via these links:

- Demo web tool version available on: <https://eureka.ails.ece.ntua.gr/>
- Production version available on: <artourbuilder.eureka3dxr.fedcloud.eu>

HOW TO LOGIN?

The first step to get access to the AR Tour Builder is to **register in EGI Check-in**. The process to register your account is as simple as performing a log in with your usual account. Check-in allows users to authenticate with any organisation adhered to eduGAIN, including Universities, academic federations and research institutions, as well as with the so-called “social” identity providers such as Google, LinkedIn or ORCID, as shown in the image below.

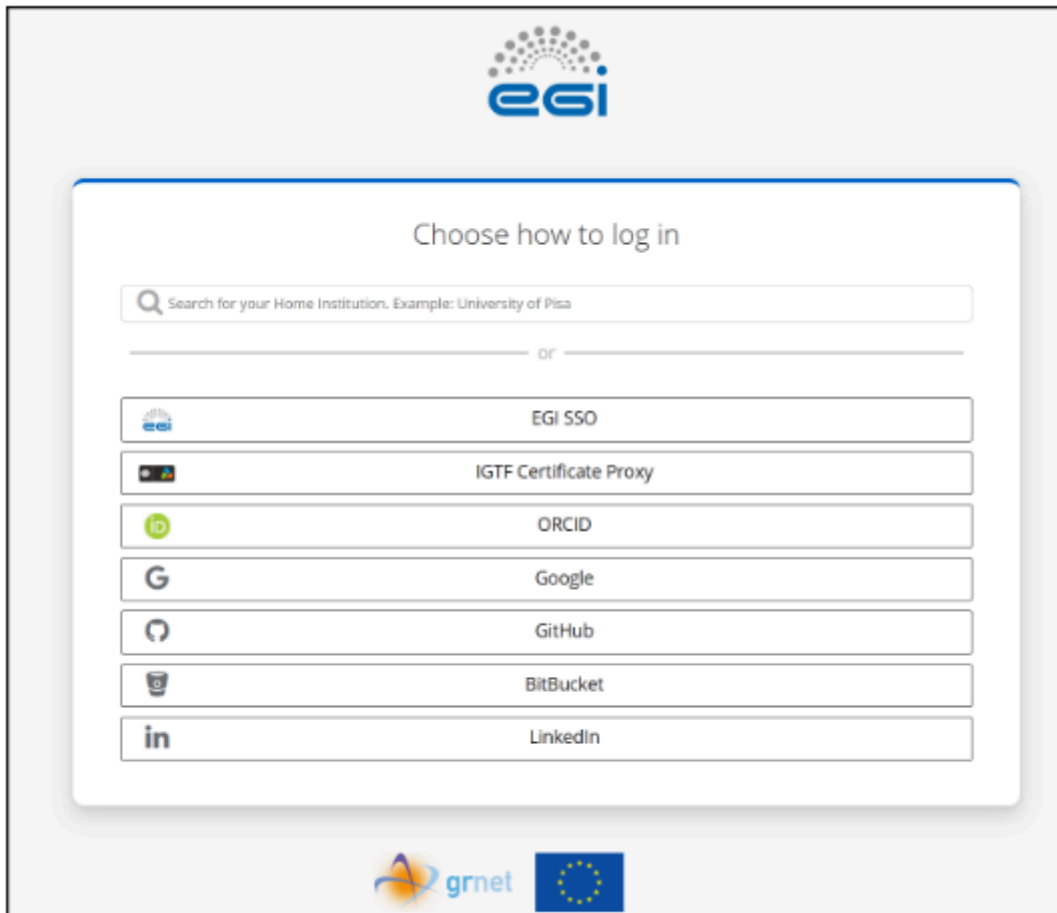


Figure 1 EGI check-in

The second step is to **join the EUreka3D Community**. For this, you need to send a request for approval by visiting the following link: https://go.egi.eu/join_eureka3d

Both processes, the registration in Check-in and the request to join the community, are documented in Section 2 of the Content Provider Handbook, available at: https://go.egi.eu/eureka3d_handbook

Once you have completed the aforementioned process with your preferred account, you will be redirected to the My Projects page of the AR Tour Builder.

HOW TO CREATE A NEW PROJECT?

Once you log in you will be redirected to **My projects** page, where you can see all the projects you are part of.

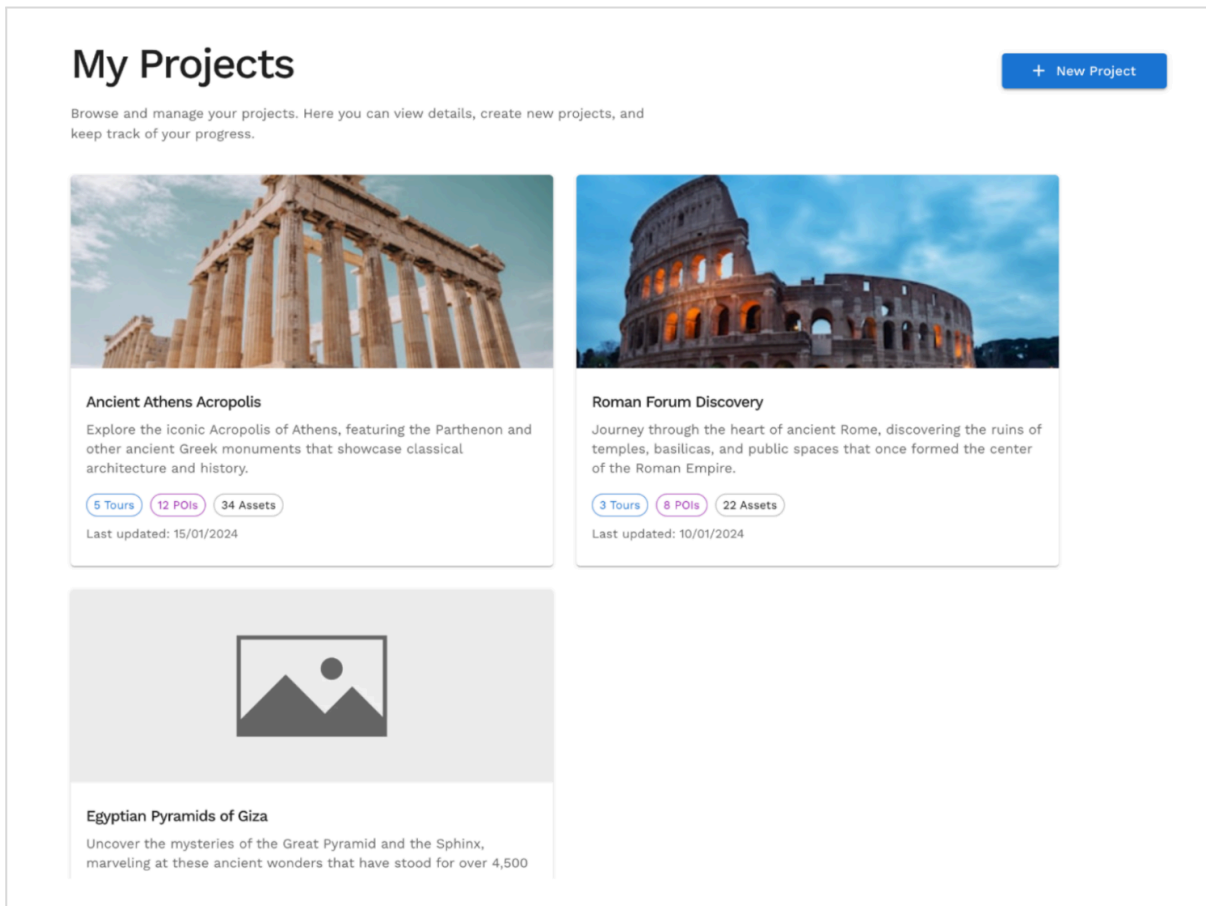


Figure 2 My projects page

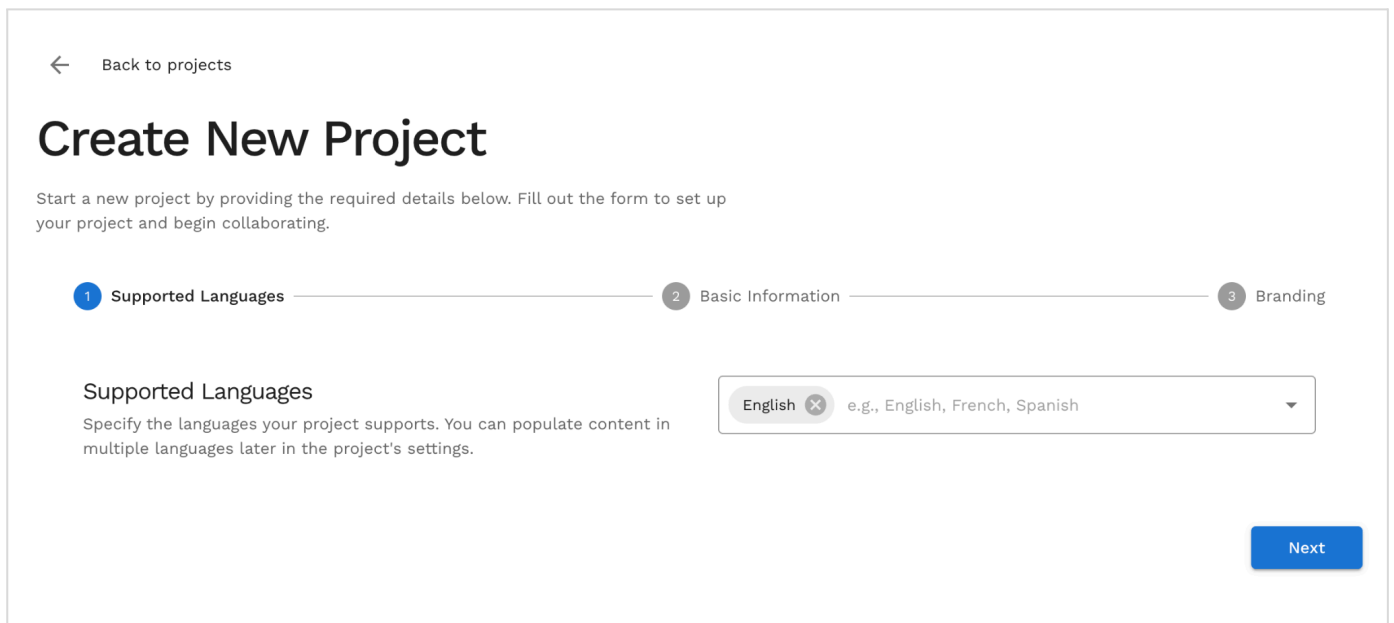
What do you see on the My Projects page?

The My Projects page shows all your projects. On this page you get an overview of the projects, the associated data, such as the tours, number of POIs and assets, etc.

By clicking on a project, you get redirected to the project's dashboard, displaying project associated data like its tours and members.

In order to create a new project, select **New Project**. A stepper form will open in order to fill in the necessary information.

First you need to specify the languages the project will support, which are basically the available languages the curators will be able to add content.



← Back to projects

Create New Project

Start a new project by providing the required details below. Fill out the form to set up your project and begin collaborating.

1 Supported Languages ————— 2 Basic Information ————— 3 Branding

Supported Languages

Specify the languages your project supports. You can populate content in multiple languages later in the project's settings.

English × e.g., English, French, Spanish

Next

Figure 3 Create a new project; select language

In the next steps you will be prompted to enter the project name and a description, ideally in the languages you selected in the previous step, as well as some branding like a logo and cover photo.

Branding is optional, but will help a lot with the visual representation of the project when presented in the AR Tour Experience mobile app.

← Back to projects

Create New Project

Start a new project by providing the required details below. Fill out the form to set up your project and begin collaborating.

1 Supported Languages — 2 Basic Information — 3 Branding

Input Language English

Project Title
This is the title the project will appear with to the visitors too

Enter project title

Description
A brief overview of your project that helps users understand its purpose

Enter project description

Back Next

Figure 4 Create a new project; Add basic information

← Back to projects

Create New Project

Start a new project by providing the required details below. Fill out the form to set up your project and begin collaborating.

1 Supported Languages — 2 Basic Information — 3 Branding

Project Logo
Upload your project logo. This will be displayed on the project homepage and tour listings.

Click to upload Logo
PNG, JPG up to 2MB

Cover Photo
A hero image for your project. This appears at the top of your project page and inside the tour cards.

Click to upload a cover photo
PNG, JPG up to 5MB

Back Save

Figure 5 Create a new project; Branding

Once you fill in the form and click **Save**, your project is created and you will be redirected to the project's **Dashboard**.

What do you see on a project's Dashboard page?

The Dashboard page shows basic project information, as well as the tours and members contained in it.

The dashboard page acts as the main navigation hub, giving access to the project's **Tours**, **Settings**, and **Members** sections, allowing you to manage tour content, update project information, and handle team collaboration all from one place.

Tip - you can create multiple tours under one project

HOW TO CREATE A NEW TOUR?

1. Open the **My Projects** page and select the project
2. Go to Tours, by either selecting **Tours Editor** from the sidebar on the left or **See all** from the tours table inside the dashboard

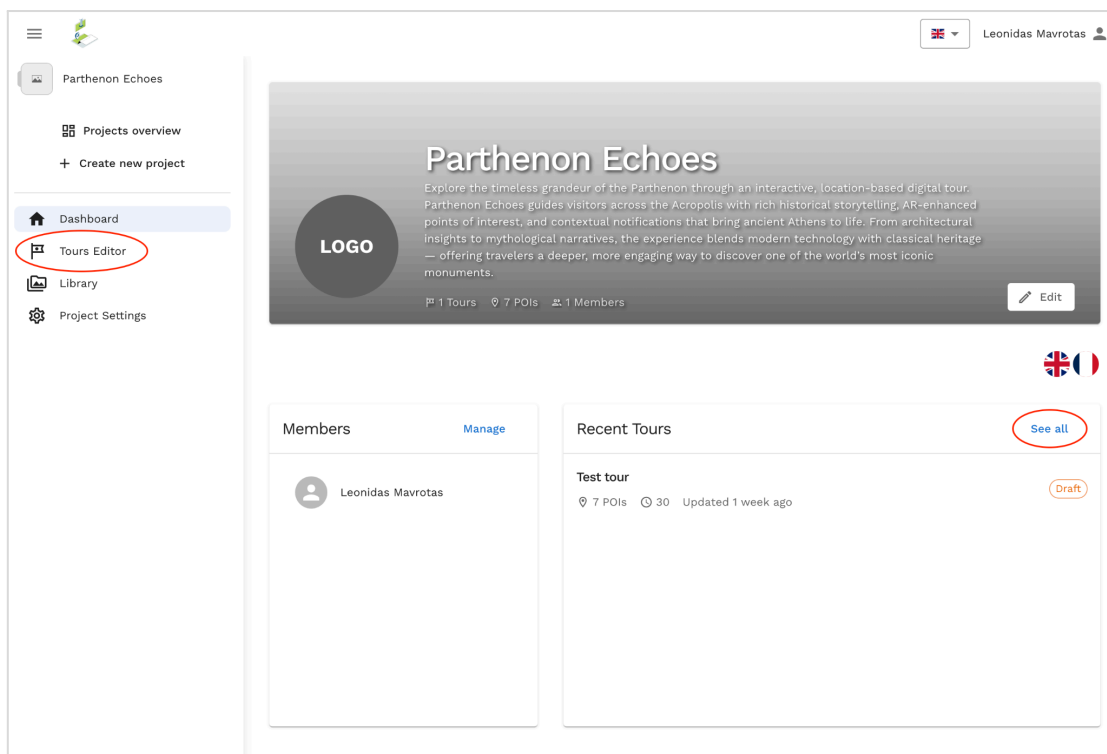


Figure 6 Tour overview

3. Choose 'Create new tour'

My Projects > Parthenon Echoes > Tours

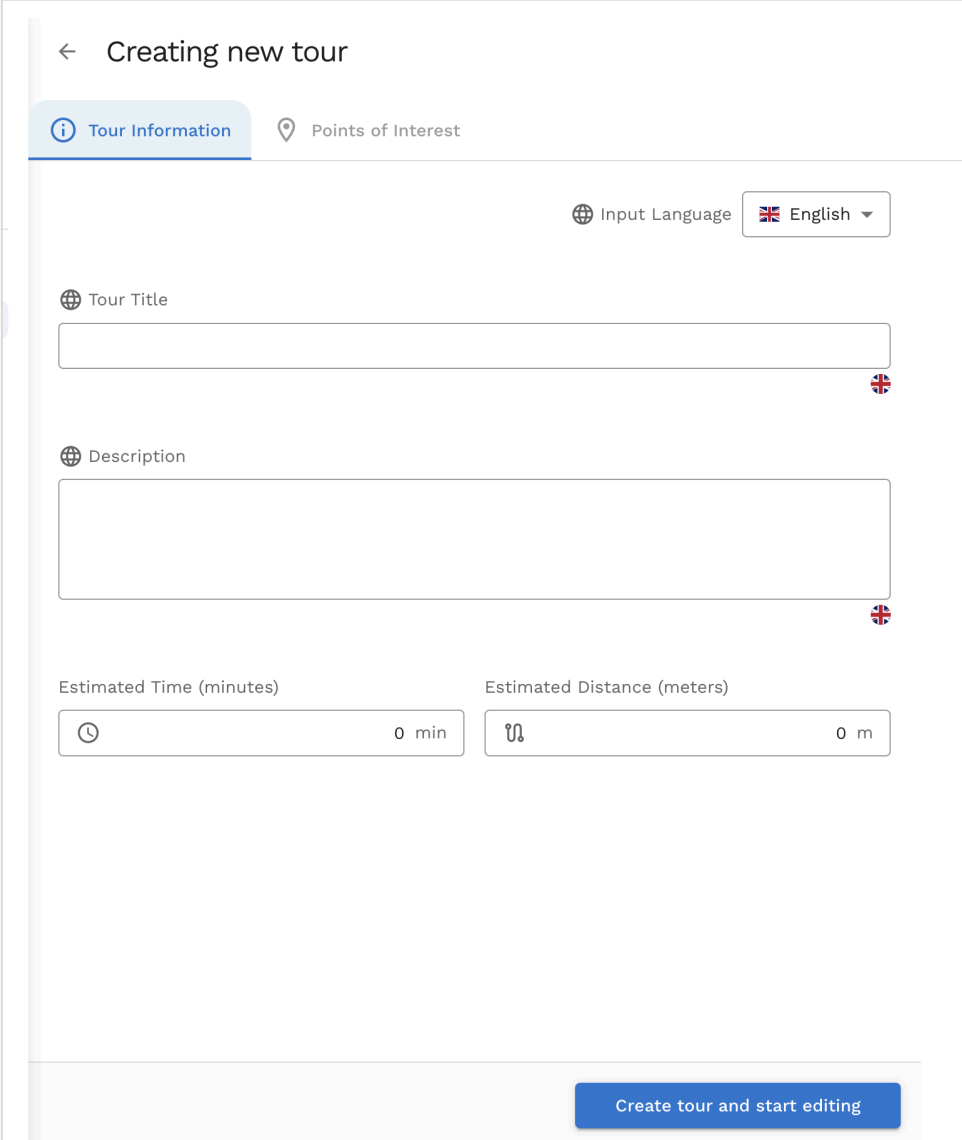
Project Tours

[+ Create New Tour](#)

Manage and organize immersive cultural heritage experiences. Create guided tours, add points of interest, and publish interactive archaeological trails for your visitors.

Figure 7 Create a new tour

4. Fill in the form with the tour's basic information:
 - a. Tour name (multilingual)
 - b. Description (multilingual)
 - c. Estimated duration
 - d. Estimated distance



← Creating new tour

Tour Information Points of Interest

Input Language English

Tour Title

Description

Estimated Time (minutes) 0 min Estimated Distance (meters) 0 m

Create tour and start editing

Figure 8 Input screen for a new tour

After creating the tour, you will be prompted to start adding **points of interest** to the tour.

What do you see on a Tour page?

The Tours page consists of two navigation sections:

1. **Tour Information** displaying the basic Tour info (description, time estimation etc.) and
2. **Points of interest**. In case of guided tours, the POIs are sorted.

HOW TO ADD POINT OF INTEREST (POI) TO A TOUR AND ASSIGN CONTENT?

1. Open the POI form

- a. Open the tour from the Tours Editor page
- b. Enter the Points of Interest tab
- c. Click 'Add POI'
- d. A sidebar with the POI's form will appear from the right containing tabs to enter different categories of POI's information

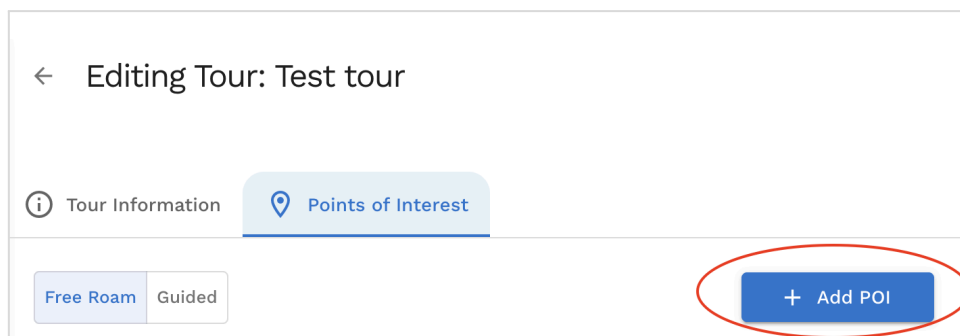


Figure 9 Add POI

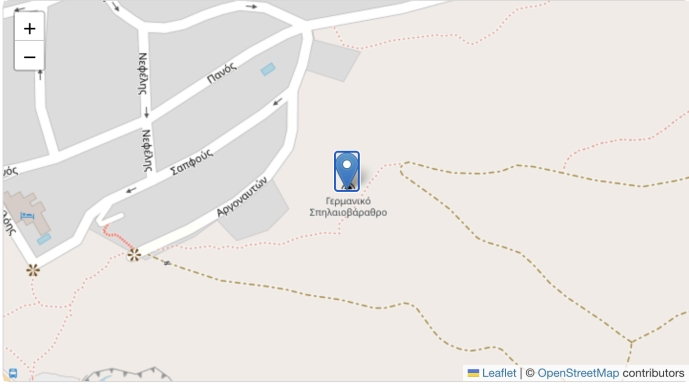
2. Enter the POI location

- a. Click on the map to place a pin or add the coordinates directly on the inputs below the map
- b. Drag the pin in order to update the POI's location, you will see the coordinates updating at the same time below.
- c. When ready, click **Next Step**

Create a Point of Interest
✕

Location
Details
External Links
Media

📍 Place a point of interest on the map or add its coordinates in the Latitude and Longitude fields below.



Latitude

Longitude

Cancel
Next Step

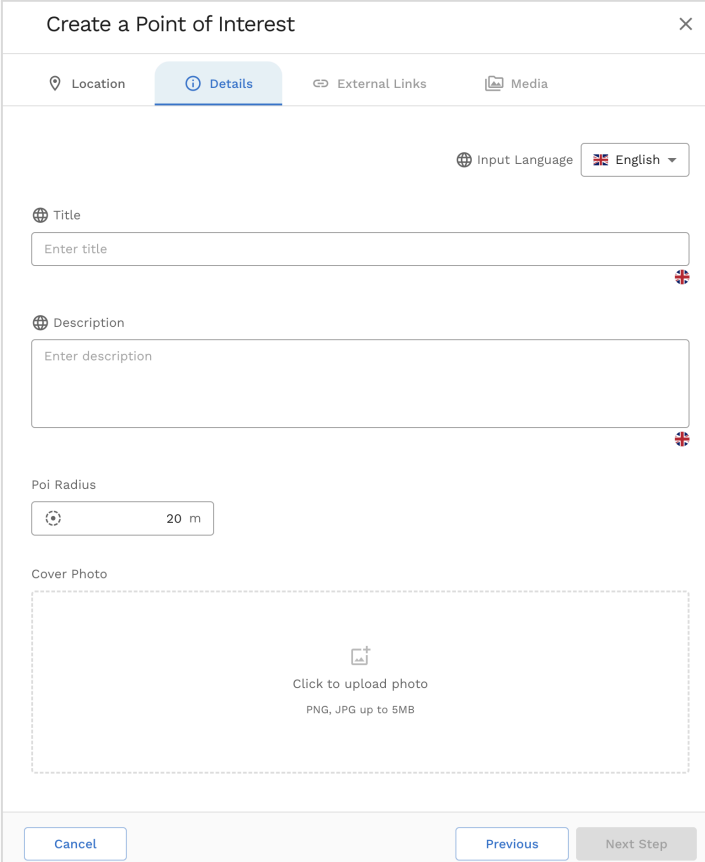
Figure 10 Add POI Location

3. Describe the POI

a. Add details

- Title (multilingual)
- Description (multilingual)
- Radius, the distance where the visitor gets an indication of reaching the POI.
- Cover photo (optional but recommended)

b. Click **Next step**



The screenshot shows a web form titled "Create a Point of Interest" with a close button (X) in the top right corner. The form has four tabs: "Location", "Details" (which is active and highlighted in blue), "External Links", and "Media".

Under the "Details" tab, there is an "Input Language" dropdown menu set to "English". Below this are two text input fields: "Title" (with placeholder "Enter title") and "Description" (with placeholder "Enter description"). Each field has a small red flag icon to its right. Below the description field is a "Poi Radius" field with a gear icon and a value of "20 m".

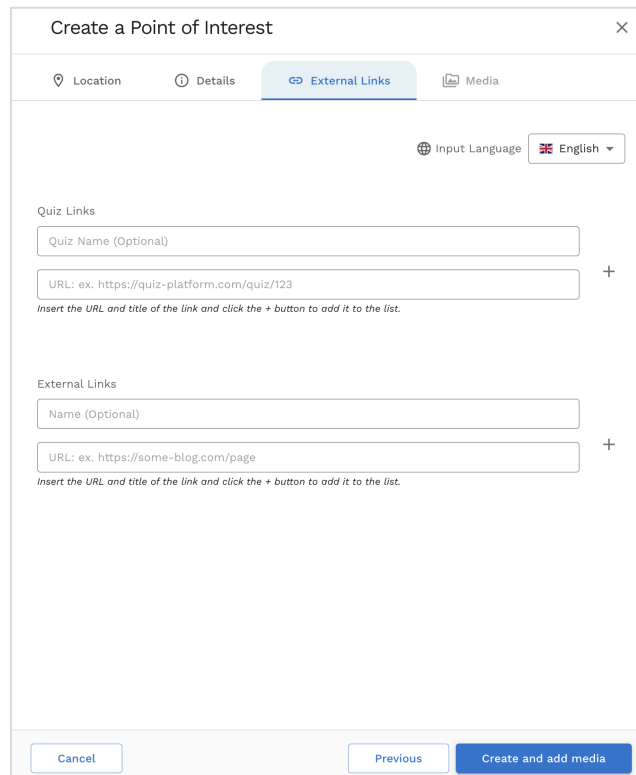
At the bottom of the form is a "Cover Photo" section with a dashed border. Inside, there is a plus icon and the text "Click to upload photo" and "PNG, JPG up to 5MB".

At the very bottom of the form are three buttons: "Cancel", "Previous", and "Next Step".

Figure 10 Add POI Information

4. Add external links

- a. You can add external links like **Quiz** or **Blog posts**
- b. You can also define different links per language, since each quiz/blog post link will probably be written in specific language
- c. When ready click **Create and add media**. This saves the POI and redirects to the Media step to start adding media assets to the POI.



The screenshot shows a web form titled "Create a Point of Interest" with a close button (X) in the top right corner. The form has four tabs: "Location", "Details", "External Links" (which is active), and "Media". At the top right of the form area, there is a language selector labeled "Input Language" with a dropdown menu currently set to "English".

Under the "External Links" tab, there are two sections:

- Quiz Links:** Contains a text input field for "Quiz Name (Optional)", a text input field for "URL: ex. https://quiz-platform.com/quiz/123", and a "+" button to the right of the URL field. Below the URL field is the instruction: "Insert the URL and title of the link and click the + button to add it to the list."
- External Links:** Contains a text input field for "Name (Optional)", a text input field for "URL: ex. https://some-blog.com/page", and a "+" button to the right of the URL field. Below the URL field is the instruction: "Insert the URL and title of the link and click the + button to add it to the list."

At the bottom of the form, there are three buttons: "Cancel", "Previous", and "Create and add media".

Figure 11 Add external links and media to the POI

5. Attach assets to the POI

- a. Go to **Media** tab
- b. Click **Add**
- c. Select between creating a new asset or selecting one from your library

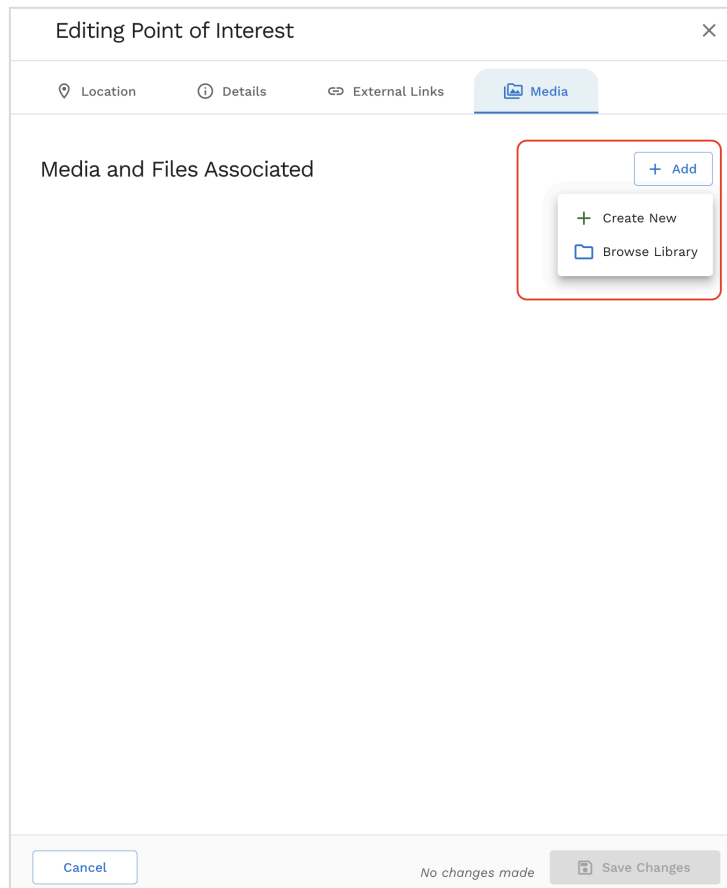


Figure 12 Attach asset to POI

6. Select and import an asset from your library

- a. Select an asset from your library
- b. The form will be prepopulated with this asset's information
- c. Continue editing the form and click Save

7. Create an asset from scratch

- a. Fill in basic information like
 - i. Title
 - ii. Description
 - iii. Set the asset as the primary asset of the POI. By toggling this option the asset will be showcased prominently in the mobile app when the visitor views the POI's information.
 - iv. Select Media Type
 - v. Add the media url
- b. In case of a 3D media asset, fill in additional information

What is the library?

The library offers an overview of all the assets that a user manages in the tool. Assets include 3D models, images, videos, etc. For each asset you find information on the name, type, size etc.

In this view you can preview, edit and delete assets.

HOW TO MANAGE 3D CONTENT?

Adding 3D content requires the following:

1. Find a POI where you want to associate the 3D content
2. Create an asset of type 3D and assign it to the POI

Then you can choose the 3D content:

1. Availability in AR mode
2. Georeference, whether to appear in AR at a specific real-world location
3. Rotation, scale and positioning using our 3D editor
4. Optional linked audio

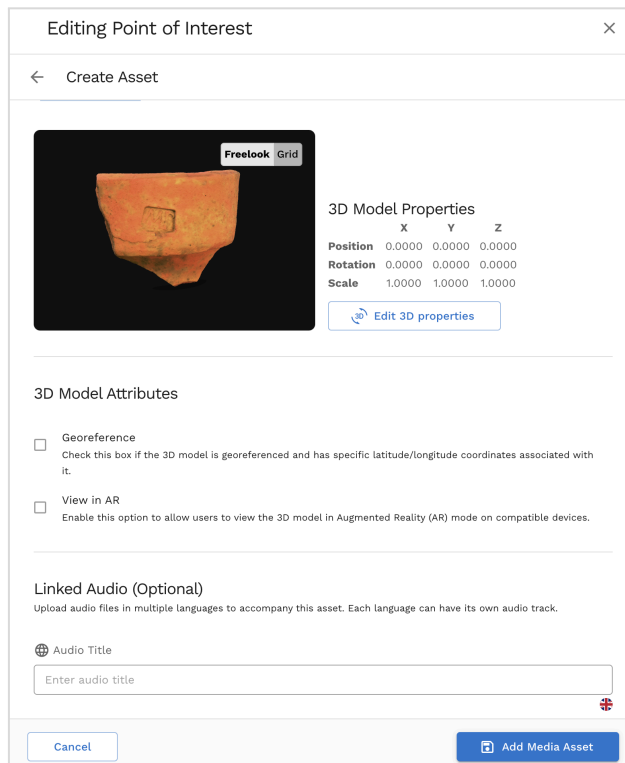


Figure 13 Detail asset page

Clicking **Edit 3D Properties** opens a dedicated 3D editor where you can precisely manipulate the model's position, rotation, and scale in real-world coordinates.

The editor provides the following tools and references:

- **Gizmo controls** — Use the on-screen gizmo to **Translate** or **Rotate** the model interactively by dragging along the colored axes (X, Y, Z).
- **Ground grid** — A reference grid is displayed beneath the model, where each cell represents **1x1 meters**, giving you an accurate sense of real-world scale.
- **Compass indicator** — A compass bar at the top of the viewport helps you orient the model relative to true cardinal directions (N, NW, etc.).
- **Properties panel** — A panel on the right displays the current numeric values for **Position**, **Rotation**, **Scale**, and **Dimensions (in meters)**, updating in real time as you manipulate the model.

Once you are satisfied with the placement and orientation, click **Save Transform** to apply the changes, or **Cancel** to discard them.

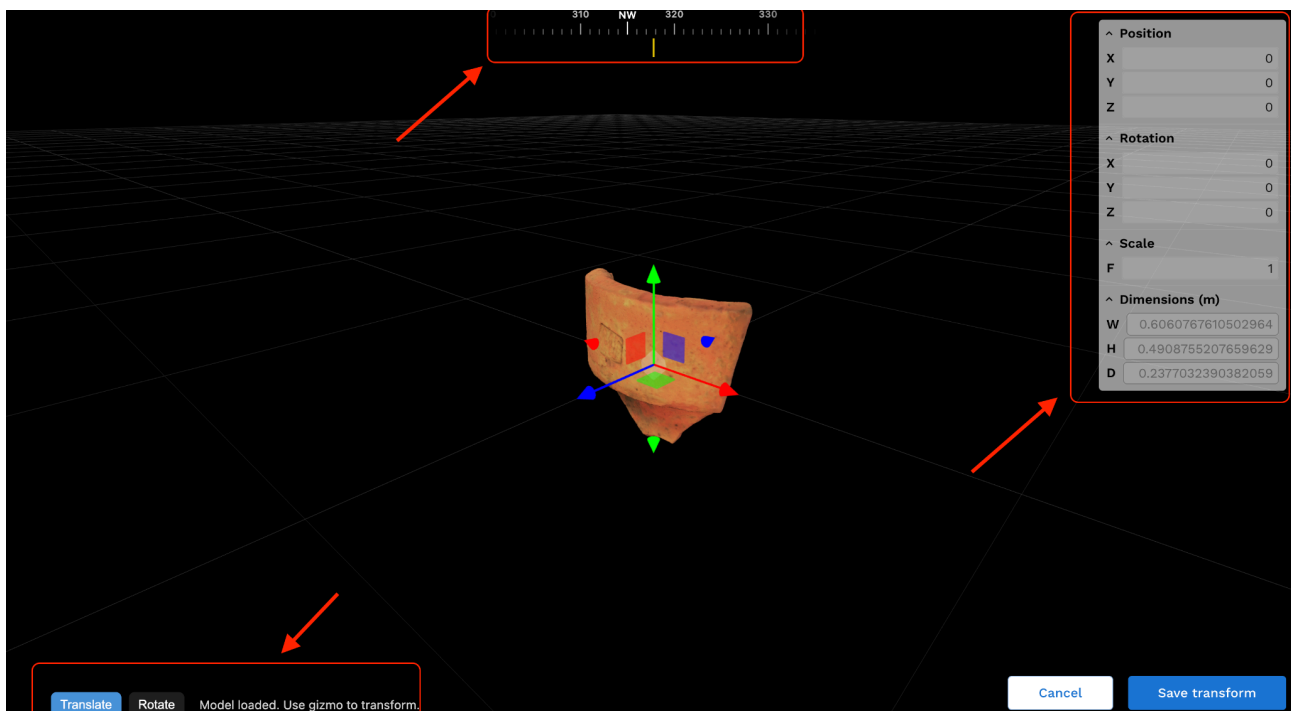


Figure 14 3D editor

HOW TO PUBLISH A TOUR IN THE AR TOUR EXPERIENCE?

1. Open a tour's page
2. Click Publish, top right of the page

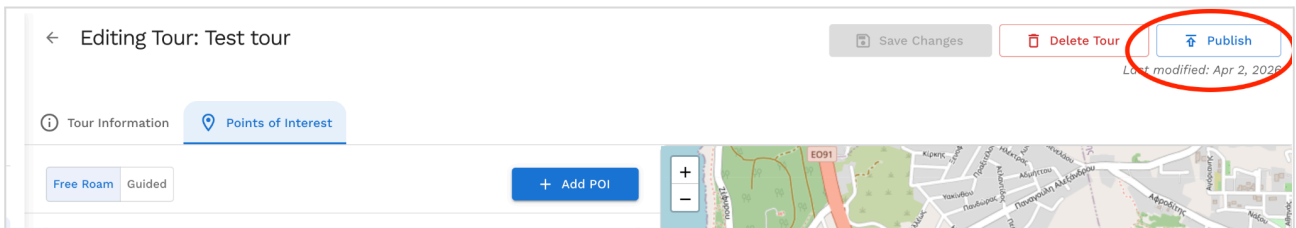


Figure 15 Publish the tour

HOW TO UPDATE A TOUR?

1. Open a tour's page
2. Modify the tour's information or POIs and click **Save Changes**

HOW TO MANAGE A PROJECT'S ASSETS LIBRARY?

1. Select a project
2. From the sidebar on the left, select **Library**
3. In the library page you can:
 - a. See all your assets
 - b. Filter assets by type
 - c. Create new assets, able to reuse them when adding content to a tour's POI.

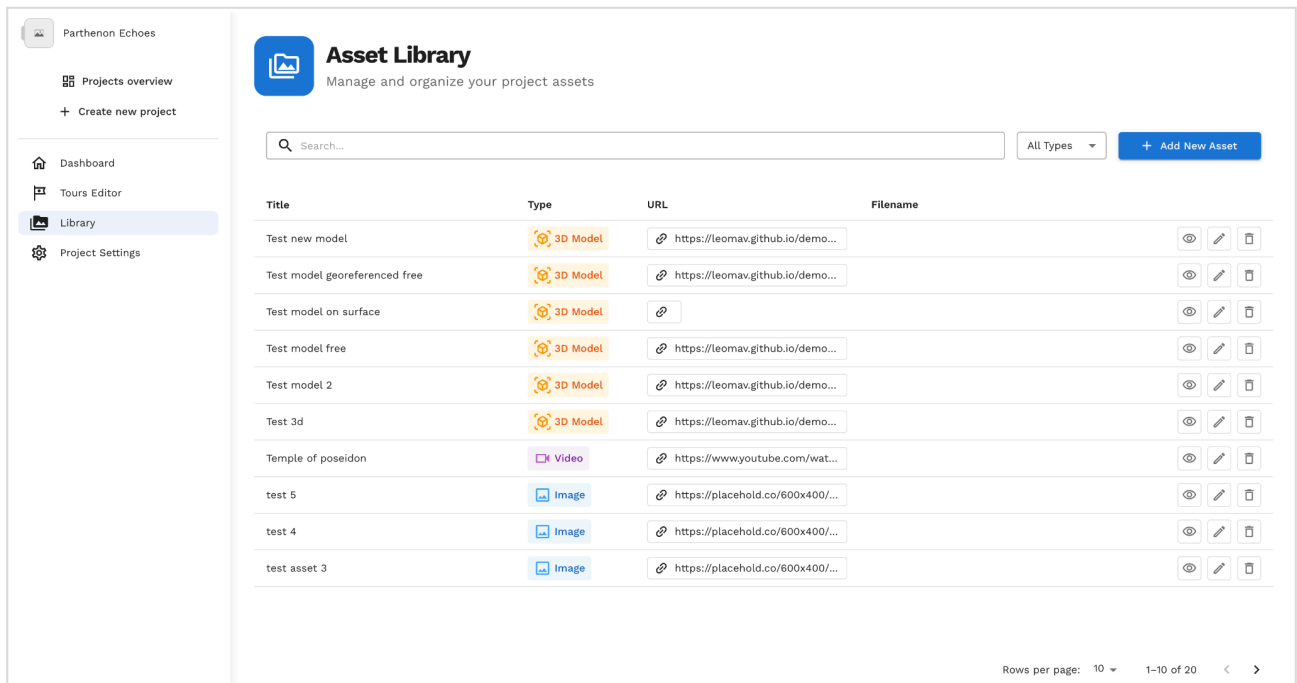


Figure 16 Asset library

MORE INFORMATION

- Source code on Github: <https://github.com/EUreka3D-XR/AR-Tour-Builder>
- API (documented in Swagger): <https://eureka.ails.ece.ntua.gr/api/docs/>
- Demo version: <https://eureka.ails.ece.ntua.gr/>
- Production version: artourbuilder.eureka3dxr.fedcloud.eu