

FACT SHEET 3D XR STUDIO

The 3D XR Studio is a web-based authoring tool that allows users to create immersive experiences in XR and AR. It enables users to combine different types of multimedia content (3D models, images, videos, audio, and text) into interactive scenes, creating narrative paths and virtual environments that can be explored via mobile devices or AR/XR headsets. It is specifically designed for cultural heritage professionals with an intuitive, no-code interface.

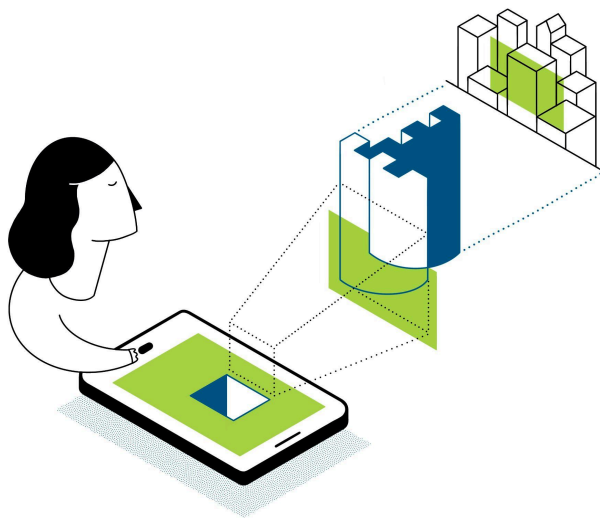
The 3D XR Studio can generate AR tours that the visitor on-site can access with their smartphone, downloading the app. In specific points of the site, the visitor finds "totems", physical references with instructions and QR codes. This allows the visitor to see the models selected and placed by the curator (potentially with rotation and scale fine tuned), see a suggested path and access the descriptions, audios and other media selected by the curator.

This is neither GPS nor internet based (except for the initial download phase) therefore it works offline without relying on GPS.

WHAT IS THE 3D XR STUDIO?

3D XR Studio is a web and mobile-based authoring environment for creating XR narratives and spatial experiences using 3D models.

It is designed for storytelling, education and cultural mediation.



WHO IS THE 3D XR STUDIO FOR?

- Cultural Heritage Professionals
- Researchers

KEY FEATURES

- Place 3D models in real or virtual environments.
- Define routes, scenes and narratives.
- Combine maps, media and interactions.
- Fine-tune placement on-site using mobile devices
- Publish lightweight XR experiences.

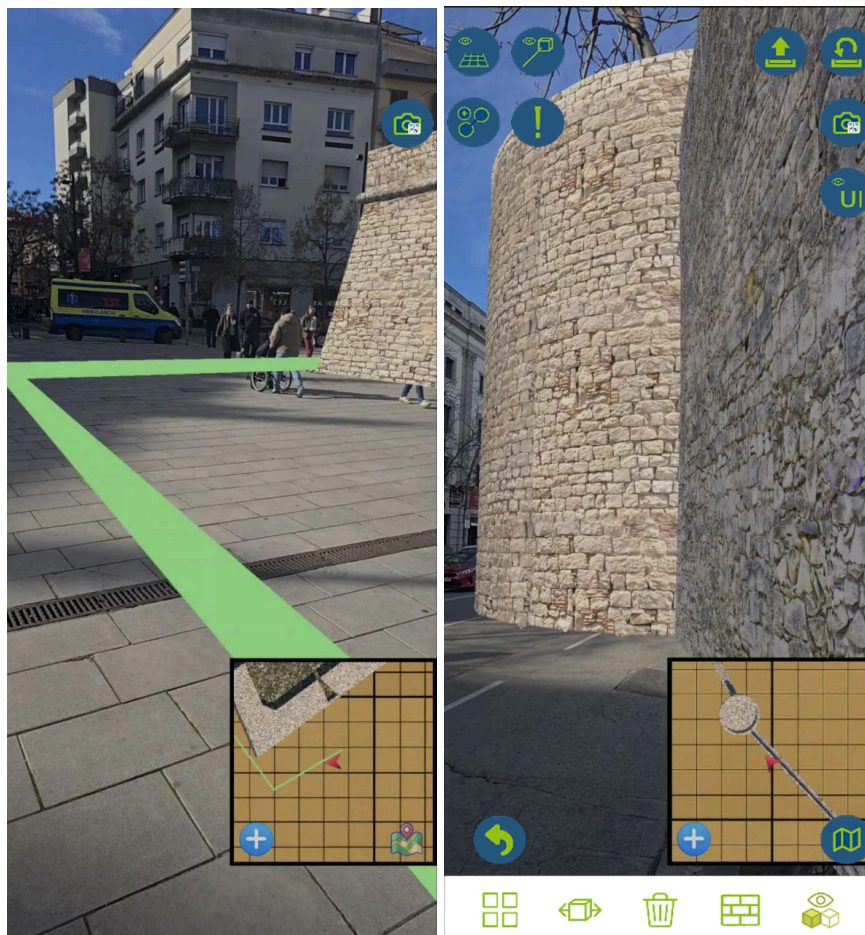
EXAMPLE USER STORY

An archivist wishes to create a curated AR experience for a visitor to follow the route of the destroyed walls and fortifications that once surrounded the city.

1. The curator selects media to use in the scenario (3D models, video, audio, etc.)
2. The curator creates a new project in the 3D XR Studio web app.
3. Using the provided map, the curator defines the portion of the city into which to place the 3D models.
4. The curator creates the desired route by setting a series of path points on the map.
5. The curator sets points of interest along their defined path.
6. The curator associates the selected points of interest with text, audio and video.
7. The curator defines starting points based on physical totems within the city.
8. Fine-tuning of 3D model positioning is undertaken by the curator in the field through the web app.
9. When visitors reach the physical totem, they can follow the instructions written on it in order to download the app.
10. The instructions inside the app will guide the visitors to read the QR code printed on the physical totem.
11. The app asks the visitor to place the phone next to the totem in a specific position and to wait for the initial download of the AR experience (such as 3D models and media).
12. Once the download is complete, the AR experience starts in the app of the visitors, showing 3D models, a suggested path and other media such audio or images selected by the curator (see point 1)



Use of XR 3D Studio Web App for creating a touristic experience



Screenshots from the XR 3D Studio Mobile App for tourists (left) and curators (right)

OUTPUT

Web-based and mobile XR experiences

WHAT DO YOU NEED?

- 3D models: GLB (suggested), OBJ (no texture)
- Information to provide to the final users in specific points of interest (videos, audio, text or images)
- Web and mobile access (for mobiles compatible with Google Ar Core)
- A PC device is suggested for the web component

SUPPORTED FORMATS

- supported 3D formats: GLB (suggested), OBJ (no texture)
- supported audio formats: most common formats (.ogg, .mp3, .wav, etc.)
- supported images formats: most common formats (.jpg, .png, etc.)
- supported video formats: most common formats (.mp4, .avi, .mkw, etc.)
- mobile devices (compatible with Google Ar Core)

LINK

You can register and start using the tool here: <https://www.swing-it.net/eureka3dxr/3dxrstudio/>

ADDITIONAL RESOURCES

- Step by step guidelines
- Demo on YouTube: <https://www.youtube.com/watch?v=QJhAAihlyxl>

ESTIMATED TIME

- Curator's side: typically 30 minutes~1 hour to create a full experience for visitors, placing and tweaking models, points of interest, suggested paths and starting synchronisation point (called "totem").
- Visitor's side: less than 1 minute to download the app and the initial models at the starting totem (according to the internet connection speed).

SKILL LEVEL

- Curator's side: Basic understanding of how to interact with a browser in a PC device and a mobile app.
- Visitor's side: Basic understanding of how to interact with a mobile app.

EFFORT REQUIRED

- Curator's side: Selection of bespoke models, potential media to insert in each point of interest and creation of a suggested path for visitors, through the web component.

Using the mobile component, adjust the position/rotation/scale of the selected models, understanding of spatial distances and sensible perspectives, considering the potential of occlusion walls to enhance visitors' realistic experience. Testing with the mobile component on site allows to improve the final output.

- Visitor's side: Using the information provided within the mobile component, visitors have to frame precisely a QR code placed next to the totem in order to allow a correct spatial synchronisation. An initial download of the models and media selected by the curator is needed at the starting point of the experience.