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Ministry of Culture
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ImGame

Technical Aspects

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ImGame – An Innovative Digital Environment Based on Research with Elements of Immersive Aesthetics and Serious Gaming No. 101054570

An educational game built with WebXR
using the A-Frame framework

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Why A-Frame?

- HTML
- Cross-platform WebXR support
- Customizable with JavaScript components
- Simple to start and do things (LMA, ViA)

ImGame Requirements

1. An intuitive way to create shaders
2. Multiplayer
3. Collectables and the studio
4. Somehow to deal with the art work exhibition
5. Large world in one load
6. VR compatible
7. Reusable components (Documented, introduced in LMA, ViA)

	What	is it done?
1	An intuitive way to create shaders	no (ChatGPT)
2	Multiplayer	no
3	Collectables and the studio	Polishing
4	Somehow to deal with the art work exhibition	done
5	Large world in one load	done
6	VR compatible	done (META QUEST 2,3)
7	Reusable components (Documented, introduced in LMA, ViA)	Polishing

Somehow to deal with the art work exhibition:

- Images and Videos
- Some vides are over 900mb
- 360 stereoscopic video

Requirement: All artworks should be visible like
in a physical exhibition

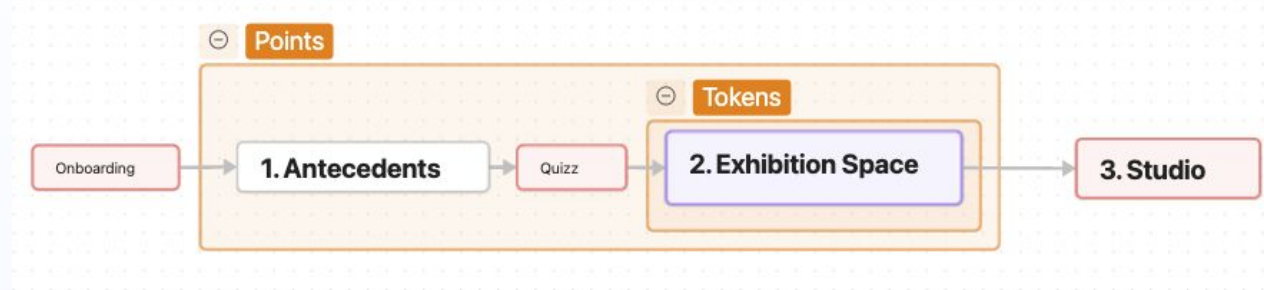
Somehow to deal with the art work exhibition:

1. All the videos visible are parts of a one short 1920x1080p webm video.
2. **av-manager.js** component gets the camera distance from each video, and when near enough, streams the original video. Similarly with textured geometry.



Large world in one load:

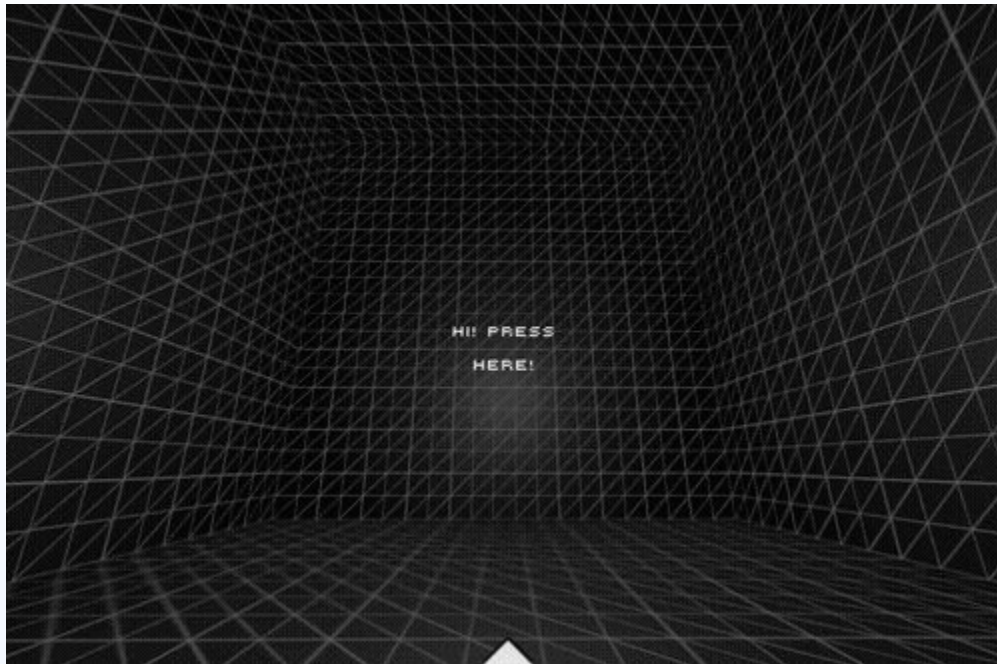
4 parts



Requirement: No additional loading screens.

Large world in one load:

Onboarding



Large world in one load:

Antecedents



Large world in one load:

The Quizz and the Exhibition



Large world in one load:

Studio



Large world in one load:

Trigger.js - click and load entities from separate htmls.

PHP - separate php files with parts of the scene.

VR compatible:

Inspiration - apple vision pro: eye tracking and pinch gesture for click

ImGame - Aim with head and pinch gesture for click

Why - head more precise than hands.



VR compatible:

Inspiration - apple vision pro: eye tracking and pinch gesture for click

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Why - head more precise than hands.



ImGame technical schematic:



<https://imgame.va.lv/imga-meshema.html>

Outdated

ImGame



<https://imgame.va.lv/>