Immersive Accessibility for All

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Orange, 7th March 2019

Partners

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Scenario 1: Arts and culture

Tate Gallery with Vibe opens the Amedeo Modigliani Virtual Reality Studio at Tate Modern

Scenario 2: Entertainment

Pearl becomes the first VR production to be nominated for an Oscar in the short animated film category.

Scenario 3: Education

‘Google Expeditions’ allow teachers to build immersive tours to aid learning

Headline scenario: Broadcast content

Scenario 4: News and documentaries

“Clouds Over Sidra” is a Virtual Reality film created in partnership with the UN Millennium Campaign, UNICEF

Scenario 5: Sports

2018, PyeongChang 2018 Winter Olympics

Accessibility scale

Scenario 1: Art and Culture

Scenario 2: Entertainment

Scenario 3: Education

Scenario 4: News and documentaries

Scenario 5: Broadcast

Consumers of accessible formats: end user group in perspective

The minority user group 1

People with sight loss

Globally, approximately 1.3 billion people live with some form of vision impairment. [1]

- 188.5 million people have mild vision impairment
- 217 million have moderate to severe vision impairment
- 36 million people are blind.

In Europe, there are an estimated 30 million blind and partially sighted people.

[1] Universal eye health: global action plan 2014/19

The minority user group 2

People with hearing loss

Globally, 466 million people are living with moderate to profound hearing loss.

- Unless action is taken, by 2030 there will be nearly 630 million people with disabling hearing loss;
- By 2050, the number could rise to over 900 million.

In Europe, about 71 million adults aged 18 to 80 years have a hearing loss greater than 25 dB

[1] Hearing Loss Factsheet (WHO)

User Centric Design

ImAc Project undertook an extensive evaluation of the requirements for subtitling and audio description in immersive media.

Subtitles

Requirements - Subtitles

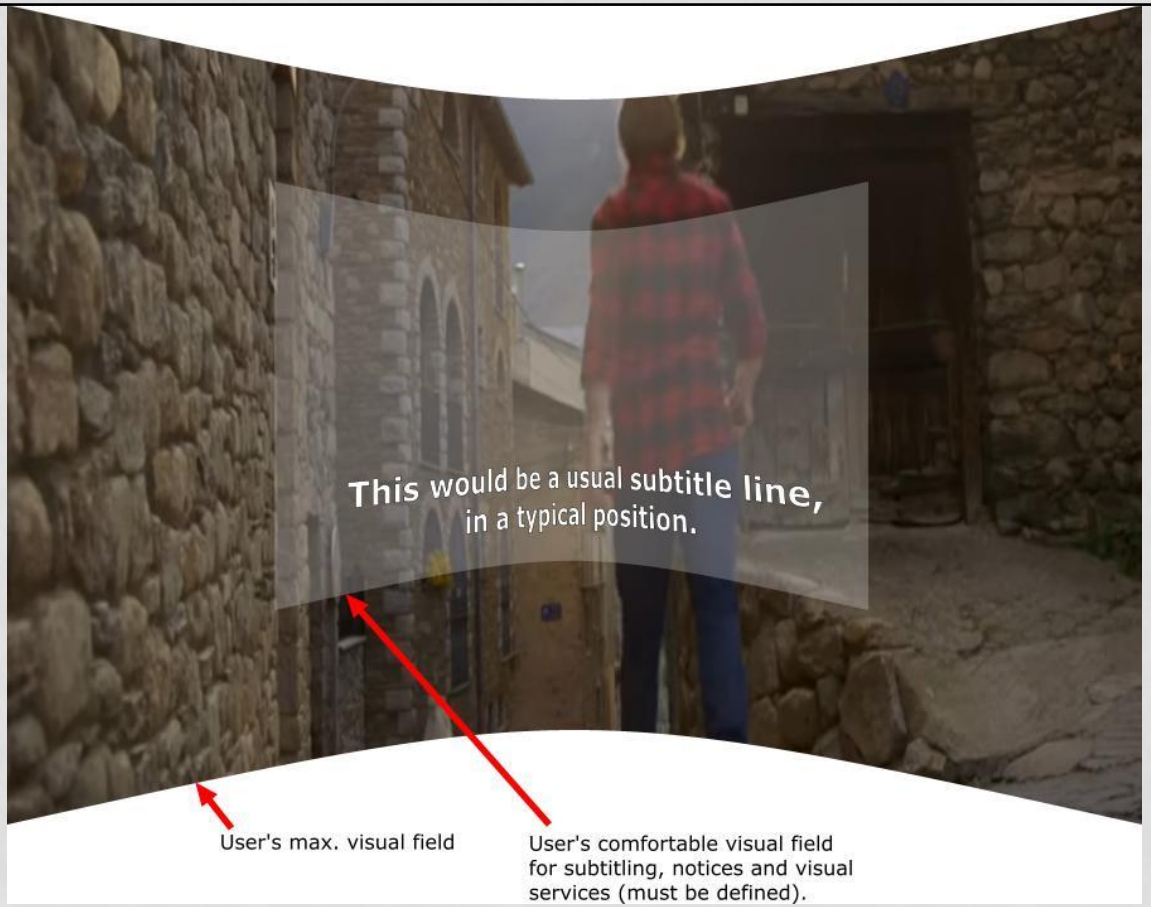
- During the focus group tests, four presentation modes and five personalisation options were identified.

- Presentation modes:
  - Basic Mode
  - Icon to indicate position
  - Written notice indicate position
  - Present sound as icons
  - Angular positioning mechanism

- Personalisation options
  - Language
  - Easy to read
  - Position
  - Background

Presentation Mode 1: Basic Mode

Center, slightly below eyeline, recommended is two-lines, colour to identify different speakers



Presentation Mode 2: Position notices icons

Basic mode and **arrow** or wind rose or compass indicates position of speaker

Presentation Mode 3: Written position notices

Basic mode and separate notices like „turn your head left“ will guide the user to the speaker

Presentation Mode 4: Present sound as icons

Icon that represents sound (like a music note) combined with customisation

Presentation Mode 5: Angular-based positioning mechanisms

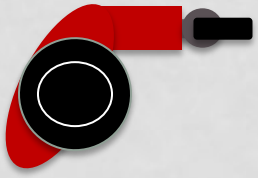
Player places subtitles at left / right edge to indicate position of speaker

Personalisation

- Language: English, Catalan, German and Spanish
- Easy to Read: different font sizes (e.g. small, medium and large)
- Position: comfortable field of view (explored in presentation modes)
- Backgrounds: semi-transparent box (80% opacity), outline (2px for each font size)

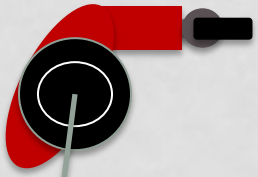
Audio Description

Placement of AD



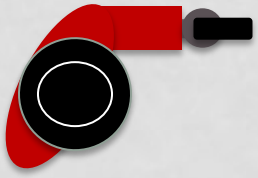
“Mal pulls a gun on Sheriff Nemo.”

AD on Action



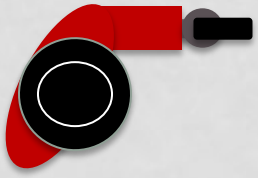
“Mal pulls a gun on Sheriff Nemo.”

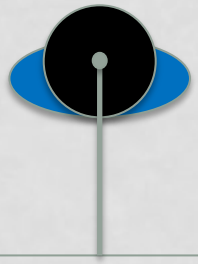
AD fixed in the scene
“Friend on sofa”



“Mal pulls a gun on Sheriff Nemo.”

AD centred on user "Voice of God"





"Mal pulls a gun on Sheriff Nemo."

Editing tools

Requirements - Editor

- Allow the professional users to edit subtitles, sign language, audio description and spoken subtitles in the ‘VR-mode' and ‘normal mode’.
- Accessibility Content Manager (ACM) for managing library of video and accessibility content i.e., ST, AD etc.
- In the next iteration, editors will be able to directly load and save AT and AD files from the computer hard drive.
- A 360 preview player for the low-resolution video playback and monitoring will be embedded in the editor with the following will be able to be viewed either as Equirectangular or VR view.

Web ST Editor working example

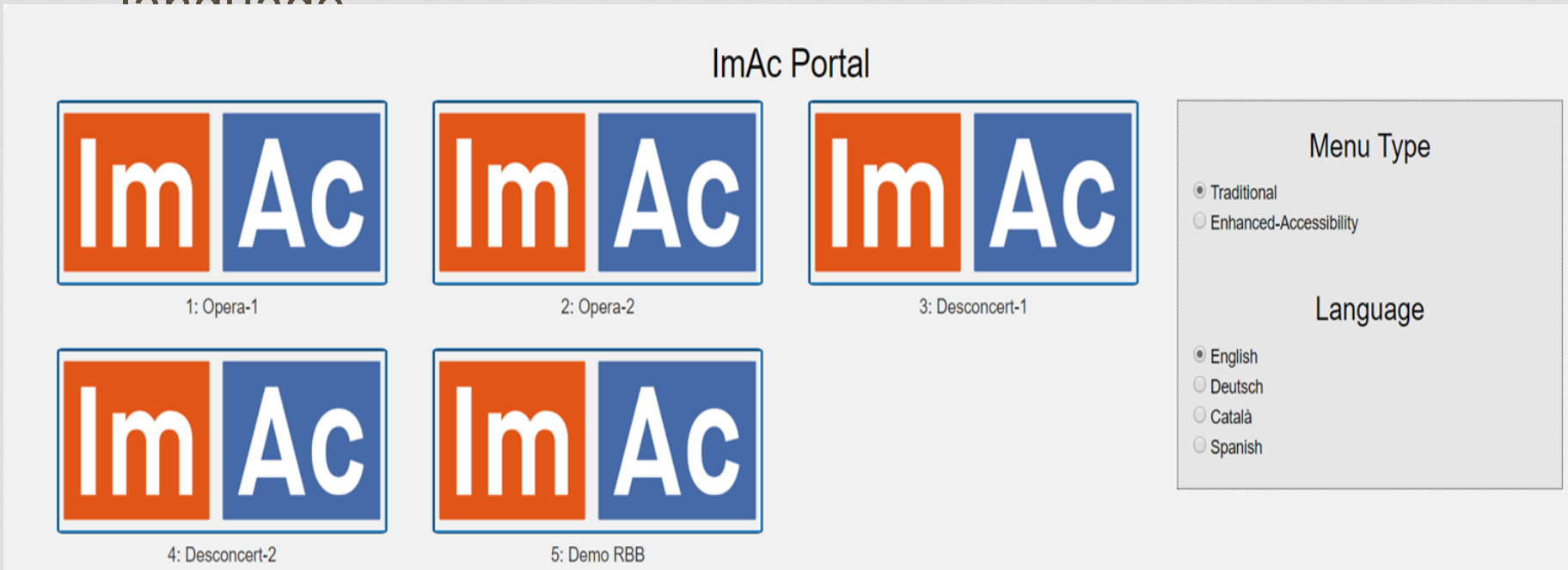
1. As a first step, listen to a fragment of the video (use the video controls shortcuts)
2. Then enter the text of the subtitle in the text area using the keyboard.
3. As we are working in 360°, search for the angle (Ctrl+Alt+arrows).
4. Then assign the angle found in the previous step (Ctrl+A).
5. Next search the starting frame by playing the video (F2) or frame by frme (Alt+left/right).
6. After pausing the video (F2), assign the TCin (Shift+Page Up).
7. Next, search the finishing frame by playing (F2) or frame by frame (Alt+left/right).
8. After pausing (F2), assign the TCout (Shift+page Down).
9. Next, chose a character for the speaker (Shift+F#).
10. Now move to the next subtitle (Page Down) and repeat steps 1 to 9.
11. Finally check the result using “Forced Preview” or “Free Preview” mode.

In some cases, you’ll need to change the alignment and/or region using the mouse.

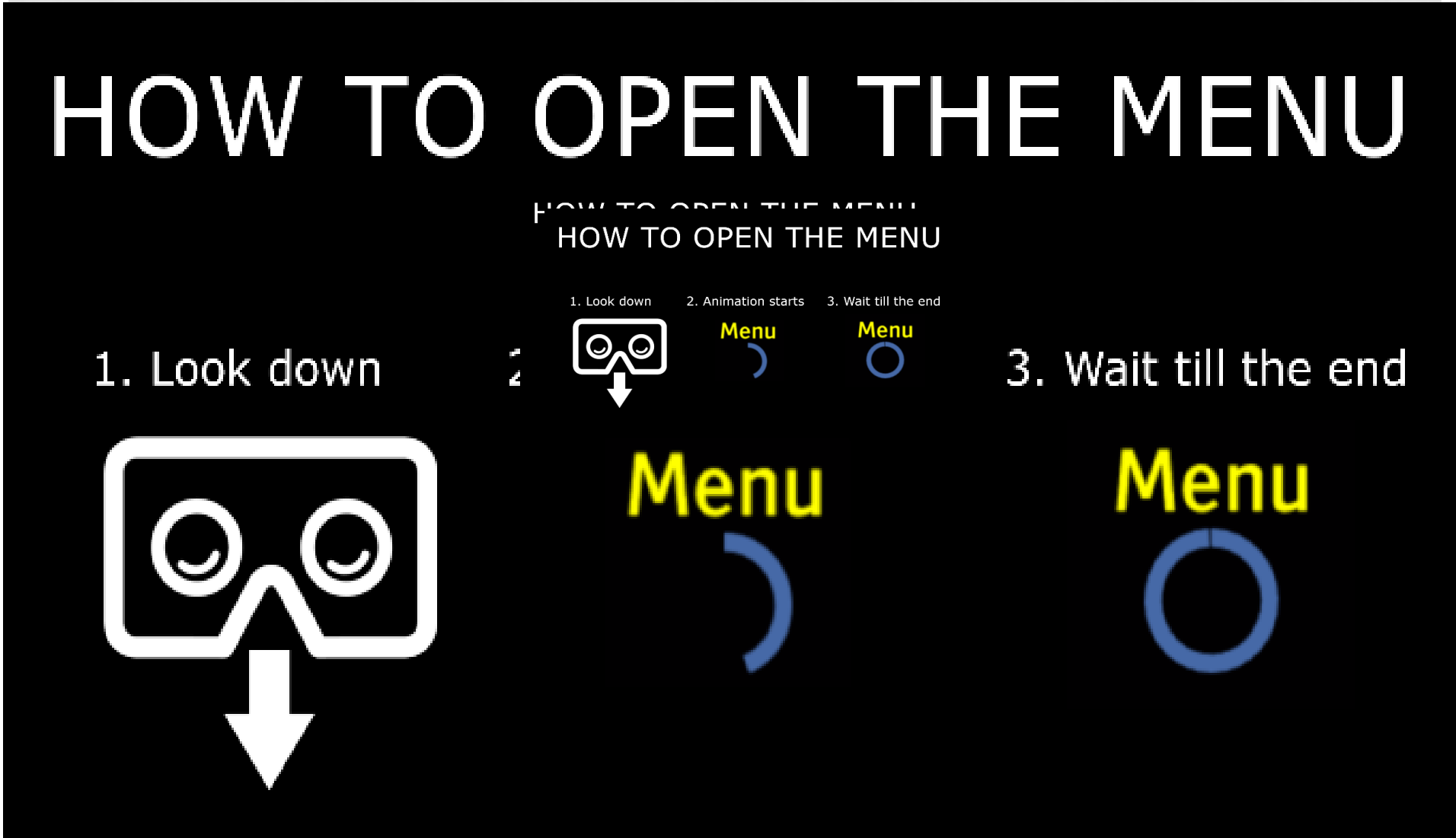
ImAc Player

ImAc Player

- Player is web-based
- Landing page shows the list of available videos and allows initial settings, like the user interface type and language



Playing content



User interface

- Accessible Interface

User interface

- Traditional Interface

Standardisation and next steps

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Thank you

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