

ImAc Player

by i2cat

Accessibility-enabled VR360 web player. It enables the consumption of 360° video and spatial audio, augmented with a hyper-personalised presentation of access services (subtitles, audio description and sign language).

Features

Use of web-based components:

- Universal (cross-platform, cross-browser and cross-network) support



- No need for installations / updates at the client side
- Built on top of dash.js, the reference player for Moving Picture Experts Group (MPEG) Dynamic Adaptive Streaming over HTTP (DASH) standard

Supported media formats:

- Codec agnostic (browser-capable codecs)
- Traditional 2D video and 360° video (in both Equirectangular and CubeMap projections)
- Traditional 2D audio (including uncompressed WAV) and 3D spatial audio (First and Higher Order Ambisonics)
- DASH streaming
- Internet Media Subtitles and Captions (IMSC) subtitle file format. It is a profile of Timed Text Mark-up Language (TTML), standardised by W3C

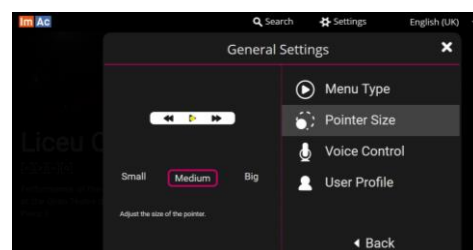
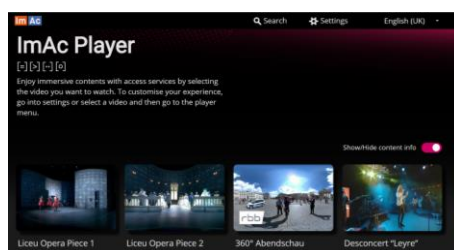
Supported consumption devices (and interaction modalities):

- PC and laptops
 - » Use of mouse and keyboard for navigation and interaction
- Mobile devices (e.g. tablets, smartphones)
 - » Use of touch screen, gyroscope and physical buttons for navigation and interaction
- VR devices (e.g. Head Mounted Devices, HMD)
 - » Use of HMD buttons, movement trackers and controllers for navigation and interaction

Portal

Landing page for:

- Language selection
- Personalised service settings
- Search and filter
- Catalogue of videos, indicating the available access services and languages
- Video selection



User Interface (UI)

- Responsive design
- Adapted to VR environments
- Visual feedback on the execution of commands
- Voice Control (voice recognition and spoken feedback to the execution of commands)
- Preview feature
- Enlargement features
- Universal icons for accessibility: [=] [o] [··] [-<]
- Open menu by looking down, by performing consecutive clicks, or via voice control



Access Services

Supported features for **Subtitles (ST)**:

- Two rendering modes: subtitles attached to the speaker / position of the scene (scene-referenced or speaker-referenced) and always visible at the bottom center of the Field of View (FoV) (user-referenced)
- Personalised presentation: size, position and language
- Responsive subtitles
- Validated methodology for Easy-to-Read subtitles
- Graphical representation of non-speech info (e.g. sound effects)
- Support for non-continuous video streams (showing/hiding the signer window based on the interpreter's activity)
- Speaker's name

Supported features for **Sign Language (SL)**:

- Personalised presentation: size, position and language
- Non-Continuous video streams (allowing automatically showing/hiding the video window based on the signer's activity)

Assistive Technologies

- **Guiding Methods** to indicate where the target speaker/action is in the 360° area: arrows, radar and use of spatial audio (plus auto-positioning modes in test versions)
- **Zoom Features**
- **Voice Control** (voice recognition and spoken feedback to the execution of commands)
 - » Development of a Relay Server to connect with external voice recognition systems, like Alexa (Echo Dot) & Amazon Web Services and Google Home

Open-Source

Github: <https://github.com/ua-i2cat/ImAc>

Standardization

The player features are being proposed for standardization in diverse international bodies / organizations



Supported features for **Audio Description (AD)**:

- Three audio placement modes and narratives
 - » Classic: no positioning
 - » Static: from a fixed point in the scene
 - » Dynamic: Coming from the direction of the action
- Extended Audio Description tracks (for specific scenes, actions or objects)
- Independent volume settings for the AD and main audio tracks

Supported features for **Audio Subtitles (AST)**:

- Two audio placement modes
 - » Classic: no positioning
 - » Dynamic: Coming from the direction of the speaker
- Independent volume settings for the AST and main audio tracks

Multi-Screen Scenarios

Technology to enable multi-screen scenarios, composed of one main screen and one or multiple companion screens (e.g., tablet, smartphone, HMD) providing extra related contents in an interactive, personalized and synchronized manner

- Support for discovery, association, launching, interaction and media synchronization features
- Support for both web-based and Hybrid Broadcast Broadband TV (HbbTV) scenarios



Access URLs

Current version: <http://imac.i2cat.net/player/>

Contact media.team@i2cat.net to have access to other dev releases with extra research-oriented features

Video

Scan the QR code to watch a video showing the features of the ImAc player

