![i2cat logo - THE INTERNET RESEARCH CENTER]

FOSTERING YOUR INNOVATION

Features

Use of web-based components

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

Supported media formats

- Codec agnostic
- Internet Media Subtitles and Captions (IMSC) subtitle file format

Supported consumption devices

- PC and laptops (mouse and keyboard for interaction)
- Mobile devices (screen, gyroscope and physical buttons for interaction)
- VR devices (HMD buttons, movement trackers and controllers for interaction)
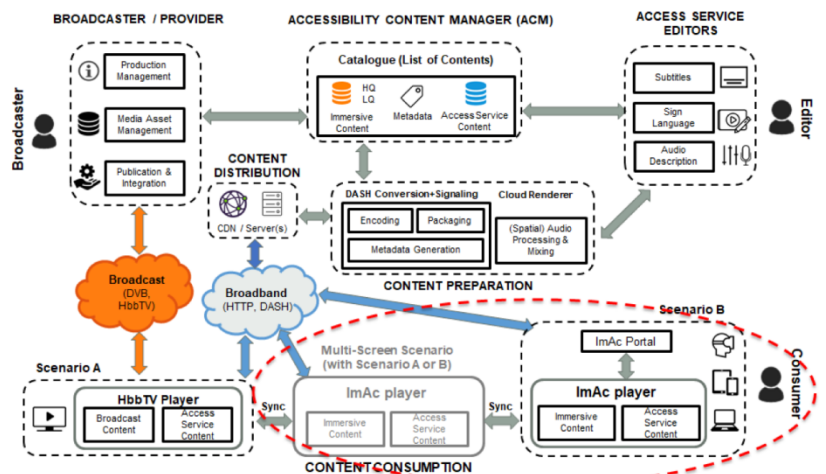
Subtitles & Sign Language

- Tailored size, position and language
- Two rendering modes (attached to the speaker/always visible in the FoV)
- Support for non-continuous video streams

Audio Description & Subtitles

- Three audio placement modes: no positioning, fixed point in the scene and coming from the action
- Independent volume settings from the main audio track
- Extended Audio Description tracks for specific scenes, actions or objects

Voice control

- Voice recognition and spoken feedback to the execution of commands

Immac360

Immersive Accessibility-enabled VR360 web player

Our solution provides a new set of presentation methods for accessibility contents adapted to 360 video scenarios.

In particular, the invention consists of a web player that enables consumption of VR360 video and spatial audio, augmented with an interactive and hyper-personalised presentation of access service content (subtitles, audio description and sign language), via accessible user interfaces.

The player also provides assistive technologies, like magnification features, guiding methods, and voice control, and can be efficiently integrated in multi-screen scenarios.

Problem solved

State-of-the-art players just provide limited support for presentation of subtitles but ImAc provides improved presentation modes and personalization features for subtitles, and for user interaction modalities, validated with users with accessibility needs.

A key novel aspect for the presentation of all these access services is that they are provided via independent streams to the main audio and video, thus enabling an interactive personalization, and innovative presentation modes, like attaching visual elements to the field of view, to specific regions of the scene, or just re-position and re-size them dynamically as desired.

Key Benefits

- Best-fitted and personalized presentation modes.

- Decoupled accessibility layer from the traditional media layer but seamless blending enabled.

- Allow the integration of immersive and accessibility content in current broadcast-related services

- Evidenced-based set of requirements generated from user testing
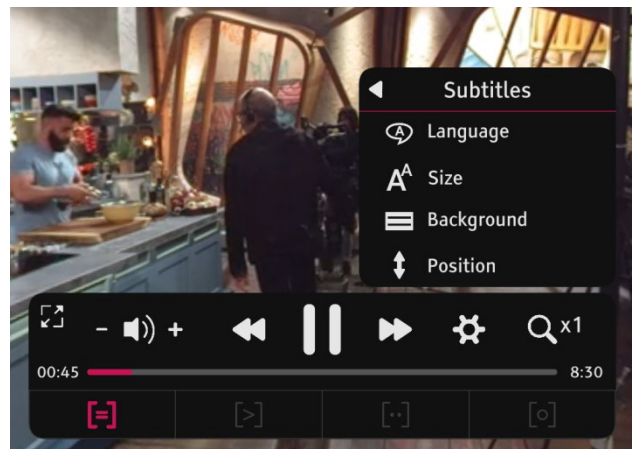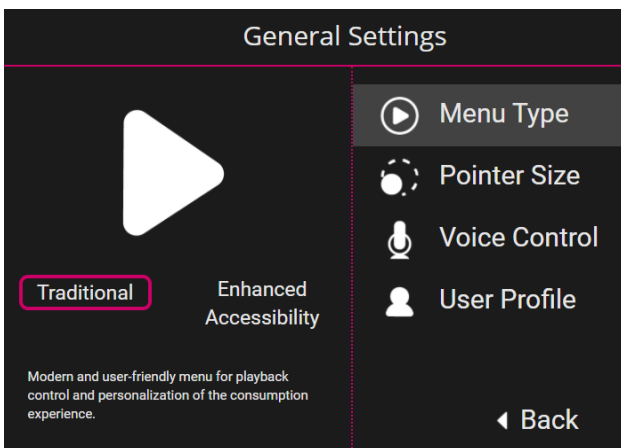
About i2CAT

i2CAT is a nonprofit research and technology center that promotes R&D activities in advanced digital technologies. The center has pioneered a new model of innovation based on collaboration between companies, public administrations, academia and users.
Our activities are focused on three objectives:

- **Research:** playing a key role in EU Framework Programme for Research and Innovation, participating in 23 H2020 projects.
- **Strategic projects:** leading local initiatives and projects to deploy digital strategies and policies of the public administrations.
- **Technology:** Fostering R&D collaboration with companies to develop innovative market-oriented solutions.

Applications & uses cases

Around 15% of the population has accessibility needs, and this is augmented by the increasing ageing ratio, which is strongly related to the accessibility requirements.

The production and consumption of VR360 content is increasingly growing, not only in the broadcast and entertainment sectors, but in others like culture, tourism, education, etc.

Europe already has secured policy options for a future EU accessibility regulatory framework and national EU countries must determine now the types of legal requirements that would apply to relevant actors.

Providing cutting-edge technology to all people is essential and promotes inclusion.