

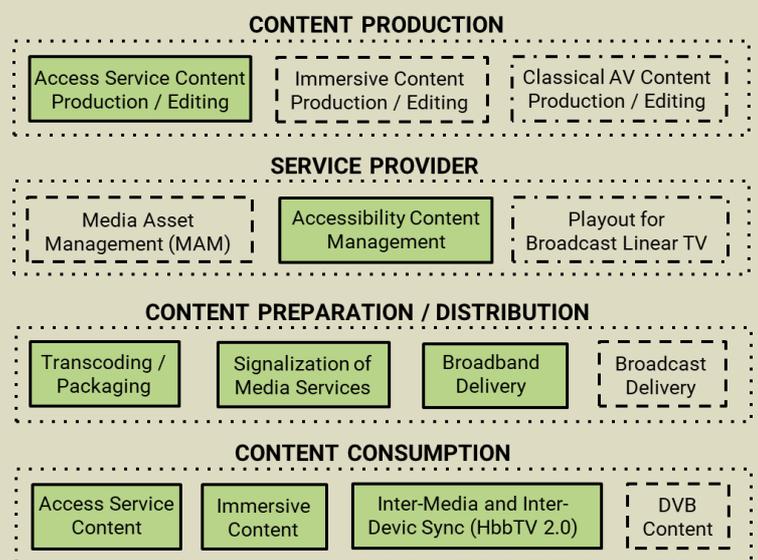
End-to-End Platform

ImAc has developed an end-to-end platform that augments broadcast services with accessible immersive content delivered via broadband, allowing for rich interaction and hyper-personalisation.

Key Features & Overview

- Individual tools for the production, editing, management, preparation, delivery and consumption of immersive and accessibility content
- Standards-compliant extensions to current technologies and formats
- Backward compatible extensions to current resources and common practices within the broadcast sector
- Key developed components:
 - » Accessibility Content Manager (ACM)
 - » Web-based access service editors
 - » Web-based VR360 player

Overview in figure (Green boxes = components developed in ImAc; transparent dashed boxes = other existing components in broadcast platforms)

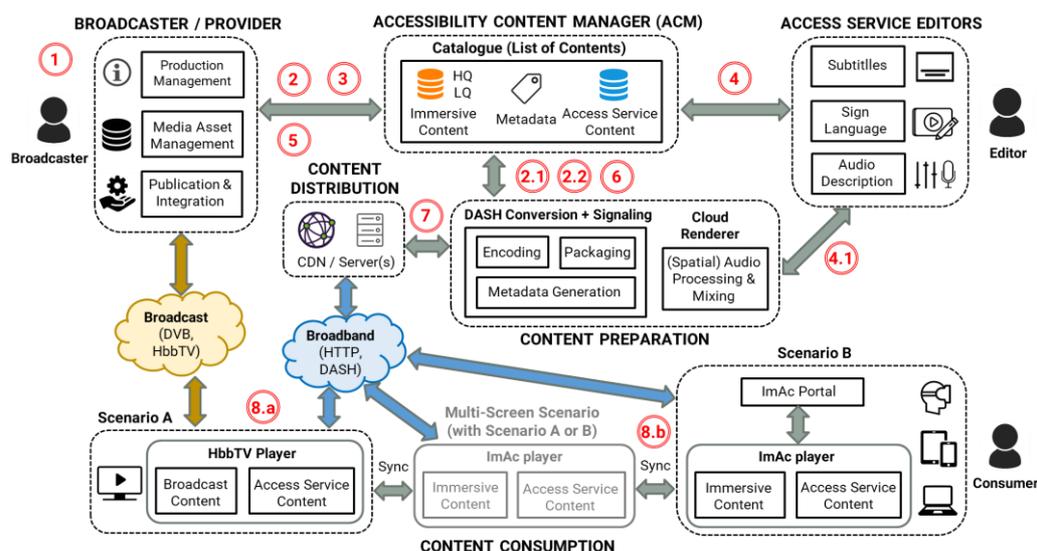


Architecture

- Modularity and scalability
- Open interfaces and APIs between components and modules
- Support for both hybrid broadcast broadband services (HbbTV) and full broadband services

Technologies & Formats

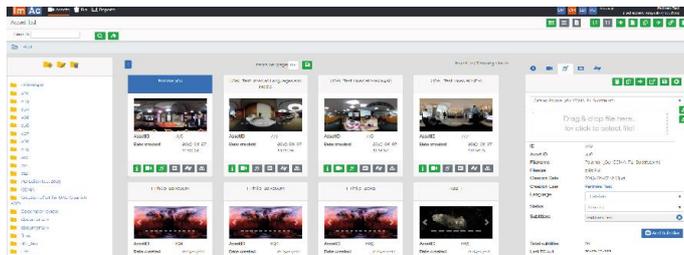
- HbbTV, DASH
- Browser-capable media codecs
- Traditional and 360° video
- Traditional and 3D spatial audio (ambisonics)
- IMSC subtitle file format (subset of TTML, being standardized by W3C)



Main Components

Accessibility Content Manager (ACM) - SaaS

- Upload, management and catalog of contents
- Interaction with Access Service Editors
 - » Conversion of videos to low quality for edition
 - » Production/Editing of Access Service content
- After verification, publication of contents is triggered



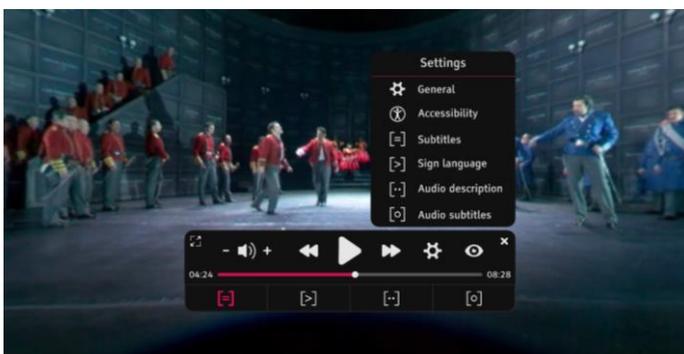
Access Service Editors – SaaS

- Web-based Editors for each Access service
 - » Subtitles (ST)
 - » Sign language (SL)
 - » Audio description (AD)



VR360 Player – Open-Source

- Web-based: cross-platform, cross-browser and cross-device support
- ImAc portal (video selection and initial settings)
- Personalized consumption of immersive (360° video and spatial audio) and access service (ST, SL, AD and AST) content
- Responsive, intuitive and accessible User Interface (UI)
- Assistive technologies: zoom features, guiding methods, and voice control
- Support for multi-screen scenarios (HbbTV and web-based)



Workflow Steps

From content authoring to consumption

1. Immersive content is produced / imported
2. Content ingest: The broadcaster updates a High Quality 360° video to the ACM
 - 2.1. A Low Quality version is automatically generated, to be used by the editors
 - 2.2. A thumbnail and cover of the 360° video are automatically generated**NOTE:** These files, together with existing access service content, can also be imported via the ACM
3. The broadcaster initiates the production of access service content
4. The professional editors create the access service content
 - 4.1. Spatial audio is processed, and multiplexed if necessary, by the Cloud Renderer
5. The broadcaster validates the created access service content
6. Content is prepared for distribution
7. Content is published to the distribution channels
8. Content consumption via the ImAc player
 - 8.a. HbbTV Scenario: The TV broadcast program is augmented with IP-delivered content presented on companion screens
 - 8.b. Web Scenario: Content is selected via the ImAc portal (website), with the option of linking companion screens

Access to Components:

Player URL: <http://imac.i2cat.net/player/>
Contact us to get temporary access to the ACM and editors
Demo videos in our Youtube channel: <http://bit.do/imacproject>

More information:

Website: <http://www.imac-project.eu>
Twitter: @imacproject
Contact: imac@i2cat.net