Hybrid Broadcast-Broadband distribution for new video services

A use cases perspective

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THE H2B2VS PROJECT
Project objectives

Hybrid distribution of TV programs and services over

- Broadcast network (terrestrial, satellite, cable) and
- Broadband network (ADSL, fibre, mobile, …),

By making use of a new compression technology: HEVC
Project summary

Eureka/Celtic + project

Started in February 2013
End in November 2015

21 Partners, 5 countries
USE CASES
All Use Cases are HYBRID Use Cases

Main information is sent by the Broadcast network

Additional information comes through the Broadband network
  – Scalable video
  – Additional/better audio
  – Personalized contents
  – ...
Four categories of Use Cases

- Picture quality improvements
  - HEVC
  - High Efficiency Video Coding

- Customized TV

- PIP & 2nd Screen

- Network Improvements
Picture quality improvements

Hybrid distribution of 4K HEVC programs

Hybrid distribution of 3D HEVC programs

Hybrid distribution of other UltraHD HEVC programs

HDR
Wide gamut
HFR

P120
Customized TV

**Additional Audio Services**
- Better quality
- Other languages

**Trick modes on broadcast programs**

**Content personalization**
- Multi-camera
- End of a drama
- Personalized advertising

**Educative applications for disabled or ill people**
**PIP & 2nd screen**

**PIP Use Cases**
- Follow-up of another program
  
**2nd screen Use Cases**
- 2nd view Social sharing
- HEVC social TV
- Alternative/additional content from the main program to the 2nd screen
- Live betting
Networks improvements

Uninterrupted TV service by switchover or FEC

Smart Broadcast Network

Regional Variation of a National Program
All Use Cases use the TEMI synchronization

**Broadcast**

- Video Encoder
- MPEG-2 TS
- TIME codes
- URL#1
- Video Frame
- Time codes
- Video Frame

**Broadband**

- Media CDN
- Video Frame
- Video Frame
Collaboration with other bodies
BUSINESS MODELS
6 different Business models were identified

- Services paid by the end user
- Services sponsored by commercials
- Services sponsored by Public Authorities
- Services paid by the Broadcast Network Operator
- Services paid by the TV channel
- Services paid by the bouquet operator
6 different Business models were identified

Services paid by the end user
Live Betting

Content Right Owners

Service Provider

Betting supervisor

TV channel

Broadcast & Broadband operators

End User

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6 different Business models were identified

Services sponsored by commercials
Advertizing Personalization

- Advertising Agency
- Service Provider
- TV channel
- Broadcast & Broadband operators
- End User

- Brand: Coca-Cola, Samsung, Apple, BMW, Chanel, Louis Vuitton

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6 different Business models were identified

Services sponsored by Public Authorities
Sign language translation

Public Authorities

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Service Provider

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TV channel

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Broadcast & Broadband operators

End User

Sign language translator company
6 different Business models were identified

- Services paid by the Broadcast Network Operator
- Services paid by the TV channel
- Services paid by the bouquet operator
Trick modes for live content

- **Content Right Owners**
- **Service Provider**
- **TV channel**
- **Broadcast & Broadband operators**
- **End User**
TWO EXAMPLES OF USE CASES WHICH WILL BE IMPLEMENTED
Trick modes for live content

- Greg is watching a program of TV+ on a large screen TV set which is connected to internet.
- A pop-up appears at the right up corner indicating that Greg can navigate in the content.
- Greg press the blue button of its Remote Control Device and control keys appear at the bottom of the screen.

![Diagram of TV controls](image)
Scalable 4K content

- Bob is watching one of his favorite terrestrial TV channels on his brand new UHD TV set which is also connected to Internet
- The football match is just starting in HD quality
- A pop-up appears in the corner of the screen inviting him to watch an UHD version of the match.

- He agrees and he is directed to a web portal which proposes to buy 2 € a UHD version of the match
- He uses his credit card to purchase the UHD programme and the full UHD picture quality appears on the screen
THANK YOU!

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