RBB approaches to accessibility on connected TV

HBB4ALL Workshop 2015: Smart Accessibility on Connected TV
18 March 2015
**rbb Rundfunk Berlin-Brandenburg**

- Public service broadcaster for Berlin and Brandenburg
- Local catchment area: 30,000 KM2 / Population: 6 million
- One TV station, seven radio channels, wide range of multimedia services, online, videotext, mobile apps, interactive TV, social media
- Member of ARD - Europe's largest broadcasting network
- Host ARD Digital Play Out Center (interactive services) and ARDtext (subtitling)
rbb Innovation Projects Unit

- Interdisciplinary team: project managers, project engineers, assistants
- Develop and test new technology with rbb:
  - Concept → Financing pilot operation → Hand over
- Accessibility, Second Screen, Usability, HbbTV, Social TV, Cultural Heritage
- Basis: European research and development projects
- 29 European R&D project successfully completed to date
- Currently involved in six projects
Subtitles – from analogue to digital
From analogue to digital subtitles

- Results of PSP project DTV4ALL (2008 - 2011):
  1. Introduction of DVB subtitles and best practice for on-screen display
  2. What users really wanted was to customise subtitles themselves
Hybrid Broadcast Broadband TV (HbbTV)

- HbbTV combines broadcast with IP
- HbbTV is a standard that makes it possible to offer interactive applications on TV → Red button applications
- Open standard
- Supported by most major TV manufacturers in Europe
- HbbTV 2.0 recently released
Customised Subtitles using HbbTV

- **HBBNEXT**: we created an HbbTV application that allowed users customise subtitles

- **User Tests in 2012 und 2013.**
  - Close cooperation with accessibility associations in Berlin and Brandenburg

- **Since IFA 2012 operational tests and distribution gradually increased**
  - Initially only one **rbb** news show and only available in Berlin and Brandenburg (via DTT)

- **Status**: Available for all **rbb** TV programmes with subtitles
How do you access the HbbTV subtitle application?

- Red button on TV remote control
- **rbb** launcher bar
- Subtitle application widget
HbbTV Subtitles: On/Off and context sensitive help (optional)
HbbTV Subtitles: Font Size
HbbTV Subtitles: Position

So sehen Ihre Untertitel aus. In zwei Zeilen.

Stellen Sie die gewünschte Position ein. Mit [OK] bestätigen Sie die Auswahl.

☐ Oben
☐ Unten

Funktion mit Zahlen oder Farbfasten auf Ihrer Fernbedienung aufrufen:
0 Startleiste 1 Hilfe einblenden 2 Bedienung, Datenschutz, Impressum 3 Ausblenden
HbbTV Subtitles: Background
Customised Live HbbTV Subtitles (DVB): Outlook

- The ARD Playout Center with support from the Innovations Projects have prepared a technical concept for use of the HbbTV subtitle application by the ARD
- Currently being assessed
- Plan: Any member of ARD network can use the application to offer customised subtitles
Customised Subtitles for HbbTV Catch Up TV Services

- In the project HBB4ALL a basic version of the application has been developed and is currently being tested internally.
- Uses EBU-TT-Basis-DE subtitle files.
- Starting in Summer 2015 larges scale tests using rbb catch up TV service.
- Plan: ARD-wide roll–out
  - ARD catch up service
  - Other regional broadcasters catch up services (Client applications).

- ARD working group has issued a policy document for subtitles for live streams for online and HbbTV.

VoD-Portals are very popular – difficult to explain why they do not carry subtitles

Challenge: Synchronisation of ST

03/15: HbbTV ST-App for VoD – non-customised
07/15: HbbTV ST-App for VoD – customisable
08/5 - 01/16: Test. 30 hearing impaired users

Cooperation between rbb and SWR in ARD
RBB approaches to accessibility on connected TV

Signer „on demand“
Signer „on demand“: Motivation

- Sign language service on TV are traditionally “open” - everyone sees them
- Via HbbTV we can offer a service for those who need it
- First lab test conducted in 2014
- Pilot planned for 2015 – exact extent of pilot still to be decided.
Variant 1: All-in-one Solution

- „Pull“ via IP-channel VoD with the signer integrated
- Replacing the TV picture rather than adding content
- Here, main video is pre-mixed with sign language video
- Only one video decoder in terminal required
- Usability concept tested in July 2014
Variant 1: All-in-one Solution – Usability Test July 2014

- Nine deaf users; 1.5 hrs each; tasks and evaluation
- Service well received - 8 of 9 would recommend it to their friends
- Some minor difficulties: very precise text is needed, icons rather than text where possible
- Preferences:
  - Customisable signing solution
  - Larger rather than smaller signer
  - Signer on right hand side
  - Signer in the foreground with a scaled TV picture
Variant 2: „Truly hybrid“ solution

• Signer via IP channel
• TV content via broadcast channel / DVB stream
• Both combined on screen
  • Customisation of sign language window possible
  • Requires multi-stream synchronisation and two video decoders in terminal (HbbTV2.0)
  • But HbbTV2.0 only recently published and two decoders not mandatory in HbbTV2.0.
• Plan develop showcase (2016)
How can we improve audio?
Clean Audio

- Aims of offer TV programmes with “cleaner” audio for viewers with hearing impairments
- Audio tracks of TV productions are automatically processed to reduce “background” noise, e.g. music, street sounds, etc.
- Process being developed by IRT
- Preliminary tests conducted in 24 July 2014
  - Conducted at RBB
  - 12 testers
- Lab tests 23 March 2015
  - Tests in RBB studio in Berlin – optimal acoustic conditions
  - 24 Tester with varying degrees of hearing impairment
- Larger test planned for Summer 2015.
  - Extent of test depended on outcomes of second lab test
Accessibility options in digital Teletext
ARDText Accessibility Options

- ARDtext HbbTV edition allows user customise size of font, colour and contrast
What’s next for accessibility at rbb?
Outlook, Challenges, Solutions

- Increased accessibly for all TV services – on air and on demand
- Automation of production workflows for multiplatform accessibility services
- Test and develop services using HbbTV2.0 features
- One central options function for all HbbTV accessibility services
Thank you

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