HbbTV 2.0.4 – Accessibility Changes

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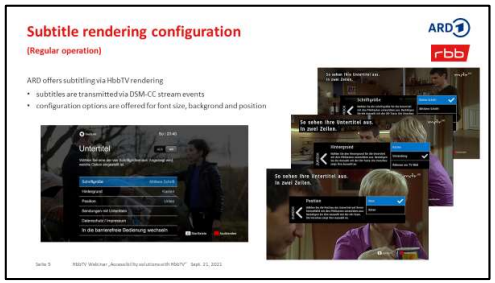
Introduction / Agenda

- What Accessibility aspects can HbbTV address already?
- What the New Version of HbbTV might bring?
- EAA readiness

Current Capability of HbbTV (v2.0.3)

- As already seen in the previous presentations there is quite a lot that can already be achieved with the existing HbbTV toolkit



HbbTV 2.0.4 – Accessibility

- What extras will HbbTV 2.0.4 bring in terms of Accessibility support?

- Some new accessibility *features*
  - E.g. Dialog Enhancement using NGA codecs
  - In some cases, makes service creation / app authoring easier
  - More on the features later ...

- An accessibility *framework*
  - To form a “connection” between the TVs and the applications
  - More on the framework next ...

Caveats / Disclaimer

- HbbTV 2.0.4 is a work in progress
- Whilst the feature set has been agreed, there isn't a 100% guarantee that everything will make it into the new specification
  - But I hope they will!

Accessibility Framework

Motivation 1

- ✓ Todays TV OSs are including an increasing number of Accessibility features – which can be exploited by the TVs native applications
- ✓ HbbTV browsers also support some features directly ...
- ✓ ... other features can be realised by apps using the existing HbbTV toolkit

- × But! - These vary between TV vendors and between App providers...
- × Some TV OS Accessibility features affect the HbbTV environment, yet others don't
  - Again, this varies across TVs from different vendors ...

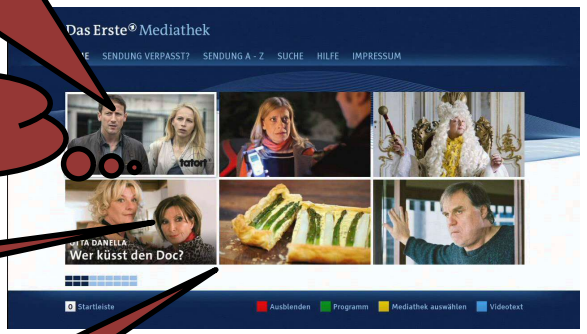
Motivation 2

- It's a messy situation and neither party has good visibility of each others capabilities ...
- Also, at present, only very limited information about User Settings are shared between the TV and an HbbTV applications
  - This results in:
    - Each application creates a settings menu to capture the Users needs and intentions
    - In turn, this results in Users having to repeat the same set-up in a number of different applications
- The introduction of HbbTVs Accessibility Framework aims to improve on this situation ...

Feature Support Negotiation (Example)

Yes I do: It affects all HbbTV apps. And the user has enabled "Screen Magnification"

Do you natively support "Screen Magnification", and if so, does the user want "Screen Magnification"?



I've got a large layout format feature in my app which may result in a better end user experience

Would you suppress your "Screen Magnifier" feature?

Sure. I'm suppressing it for HbbTV for now.

Great! – I'll enable my large layout mode now

Suppression of a TV native feature

- In the previous example, we saw the app request that the TV suppress it's native feature – why?

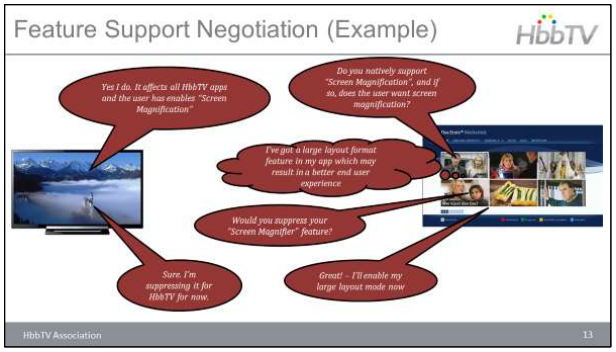
- TVs may offer some accessibility feature that is natively implemented
- In some cases, this native implementation may affect HbbTV apps without any involvement / knowledge of the HbbTV app
- The native feature could be a generic mechanism that works for all applications within the product
  - As such, it may not be as useful as a dedicated and tailored ***application specific implementation***

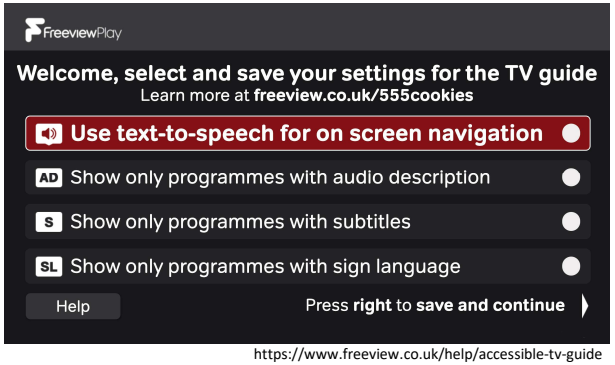
- In this situation, the application can request that the TV suppresses it's implementation of a feature so that the application can take responsibility instead
  - ... also to prevent a nasty clash where ***both*** parties try to address the same problem...

- There is a caveat – the TV may refuse this request – for good reasons:
  - The manufacturer may determine that the consistency of a feature across all applications in the product is more important for the user
  - The manufacturer may not actually be able to suppress the feature in the TV – for example if the OS provider doesn't offer a way to do this

Summary (Framework)

- **Purpose**
- To enable apps and TVs to have a constructive dialog between themselves to decide ‘who’ will take responsibility for realising a feature
- It also allows rich settings data from the TV settings menus to be available to applications
  - No more application menus for Accessibility settings!





https://www.freeview.co.uk/help/accessible-tv-guide

Setting screens no longer needed..

Accessibility Features

Table of features (overview)

Accessibility Feature	v2.0.4 change point	Current feature support
Subtitles / Captions	Settings sharing	Good support in v2.0.3
Dialogue Enhancement (with Next Gen Audio)	Settings and Control API	
High Contrast UI	Settings sharing	
Screen Reader	Settings sharing at least	
Feedback to User Actions	Settings and Trigger API	Some support in v2.0.3
Audio Description	Settings sharing	Support in HbbTV 2.0.3
Screen Magnifier	Settings sharing	
In Vision Signing	Small change – see later	
Easy Menu Access	Special case – see later	

Plus features implemented by app using HbbTV toolbox

Some highlights / special cases

Won’t go deep into details for each of these ...

... Just a quick dip into some different ones

Subtitles

- Has always been supported in HbbTV from v1.0
- Subtitles using TTML for broadband content (both Live and VOD) – added in v2.0.0
- v.2.0.4 will have additional support for rich TV subtitle settings can be shared with apps
- This will allow for *application rendered subtitles* to offers things such as:
  - Various sizes - e.g. if a user needs larger subtitles to be legible
  - Specific coloured text and backgrounds - e.g. if a user has problems viewing standard white subtitles placed on background video

- But there are some drawbacks / trade-offs:
  1. Both the DVB and TTML natively rendered subtitles have good time accuracy
     - Application Rendered subtitles have a looser presentation accuracy
  2. Often subtitles are “multi-coloured” e.g. to match a particular speakers in a drama programme
     - This would need to be carefully managed if user settings requested specific subtitle colours
- There will need to be some trade-offs and judgement calls by app providers as to what is the most important feature set to offer to users in this situation
  - Some consumer research may be required to inform best approach in detail

Dialogue Enhancement using NGA

- Next-Gen Audio codecs support DE feature, but there needs to be a mechanism for control of the enhancement level to be surfaced to the user

- HbbTV will add new APIs that control the levels of the Dialogue
  - In addition to reading any related TV settings that will help in the UI for these controls

In Vision Signing

- HbbTV 2.0.4 won't have specific feature support for in-vision signing
- That said, it is considered useful for an HbbTV Application to know the users intention in this respect, so the HbbTV Application can react in a variety of ways to address this
  - Offer more content recommendations with signed content
  - Offer or present signed content by default if a signed variant and non-signed variant exist in the content library
  - A VOD / Catchup service could, when launched, land in a different location specific for signed content
- It isn't clear if TV vendors would or would not create a menu option for a feature that isn't part of the TVs capabilities
- However, this will be defined by HbbTV, and we can see how the market manages and adopts this feature

Feedback to a User Action

- In HbbTV version 2, the ability to mix WebAudio with main audio was added
  - Motivation was accessibility: Audio feedback during menu navigation
- HbbTV 2.0.4 will extend this feature
  - A new API is defined that would trigger a TV implemented mechanism
  - Audible, Visual, Haptic options are to be supported *by the API*
- [And, of course, apps would be able to query the TV OS menu settings related to this feature]

High Contrast User Interfaces

- This is something that has always been possible from HbbTV version 1.0
  - Application defined alternative colour schemes etc. can be used to address this
- What the new version brings for this feature is:
  - the framework, as explained earlier, and
  - allowing applications to read the TVs users settings in this area and apply them application side

An “also ran” ...

- The HbbTV specification group also received a requirement to address “Easy Menu Access”
- After analysis, it was noted that this was a TV feature rather than an HbbTV feature.
- However, it was noted that HbbTV applications should be informed of any relevant changes made in TV menus so that the applications can reflect the users needs immediately
- The new HbbTV framework addresses this point

EAA readiness

EAA readiness (For June-2025)

- The anticipation is that the specification will be complete in time to assist parties to meet their obligations
- After specification is finalised, test suites and TV implementations can be developed and later deployed to the market
- At that point, services can actively make use of these new tools to build increasingly accessible services