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.
<table>
<thead>
<tr>
<th>HbbTV 2.0.4 – Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What extras will HbbTV 2.0.4 bring in terms of Accessibility support?</strong></td>
</tr>
<tr>
<td><strong>Some new accessibility <em>features</em></strong></td>
</tr>
<tr>
<td>– E.g. Dialog Enhancement using NGA codecs</td>
</tr>
<tr>
<td>– In some cases, makes service creation / app authoring easier</td>
</tr>
<tr>
<td>– More on the features later ...</td>
</tr>
<tr>
<td><strong>An accessibility <em>framework</em></strong></td>
</tr>
<tr>
<td>– To form a “connection” between the TVs and the applications</td>
</tr>
<tr>
<td>– More on the framework next ...</td>
</tr>
</tbody>
</table>
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
✓ 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 other’s capabilities ...

• Also, at present, only very limited information about User Settings are shared between the TV and an HbbTV application – 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 its 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 its 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!

[Image of Feature Support Negotiation (Example)]

Setting screens no longer needed..

https://www.freeview.co.uk/help/accessible-tv-guide
Accessibility Features
<table>
<thead>
<tr>
<th>Accessibility Feature</th>
<th>v2.0.4 change point</th>
<th>Current feature support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtitles / Captions</td>
<td>Settings sharing</td>
<td>Good support in v2.0.3</td>
</tr>
<tr>
<td>Dialogue Enhancement (with Next Gen Audio)</td>
<td>Settings and Control API</td>
<td></td>
</tr>
<tr>
<td>High Contrast UI</td>
<td>Settings sharing</td>
<td></td>
</tr>
<tr>
<td>Screen Reader</td>
<td>Settings sharing at least</td>
<td></td>
</tr>
<tr>
<td>Feedback to User Actions</td>
<td>Settings and Trigger API</td>
<td>Some support in v2.0.3</td>
</tr>
<tr>
<td>Audio Description</td>
<td>Settings sharing</td>
<td>Support in HbbTV 2.0.3</td>
</tr>
<tr>
<td>Screen Magnifier</td>
<td>Settings sharing</td>
<td></td>
</tr>
<tr>
<td>In Vision Signing</td>
<td>Small change – see later</td>
<td></td>
</tr>
<tr>
<td>Easy Menu Access</td>
<td>Special case – see later</td>
<td></td>
</tr>
</tbody>
</table>
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.