



HbbTV 2.0.5 Explained



- 3 mandatory new features
 - DRM
 - Web Assembly
 - Web security specifications – HSTS, CSP2, upgrade-insecure-requests
- Some optional new features
 - New video codecs (AV1, VVC)
 - HTTP/3
 - New DVB-I application models from A177r7 – service list apps, applications in series with media
 - Purpose is obtaining/renewing/withdrawing GDPR consent, agreement to T&Cs, single sign-on,
- 1 approved requirement not addressed
 - Improving memory management for MSE media playback
- Removals, simplifications and deprecations
 - Tiresias and font definitions
 - Remove part of MediaSync
 - Remove "Do Not Track"
 - Make "Transport Stream over IP" an optional feature

- In the real world, HbbTV devices have included DRM for years – PlayReady and sometimes Widevine
 - For more details, see [the explainer](#) for [the HbbTV DRM specification](#)
 - Not formalised earlier due to market sensitivities
- HbbTV has an open source [DASH and DRM reference app & content](#)
 - Members can access anonymised results of running this over 100 TV sets
 - Members can re-use code from this
- 2.0.5 formalises this & makes one of those DRM systems mandatory
 - Tests for DRM are being included in the HbbTV device test suite
- More background on HbbTV and DRM in [this webinar](#)

- Enables apps to include code executed with native performance
 - e.g. software video decoding used for signing, shown by 3CAT in autumn 2025 - <https://youtu.be/Uilh5OLg9M8?si=0bkXeaef6z14k2yn>
- A game changer - enables apps to include features that would otherwise need the device manufacturer & take years to reach an installed base
- Earlier versions of Wasm present in many HbbTV TVs already but support should be more consistent going forwards
- More background on Wasm and HbbTV in [this webinar](#)

- Some web security specifications not previously required are added
 - HSTS = [‘HTTP Strict Transport Security’](#)
 - HTTPS / TLS must be used
 - CSP2 = [‘Content Security Policy Level 2’](#)
 - Controls what resources a page is able to use
 - Defends against cross-site scripting and other attacks
 - [upgrade-insecure-requests](#)
 - Instructs browser to automatically replace HTTP URLs with HTTPS
- Most implementations supported them already but perhaps not all

- HbbTV now has a separate [“Registry of Video Codecs”](#)
 - Lists how apps can test for each codec being supported
 - Lists where each codec is defined
 - Also includes HDR technologies
- Codecs can be added without changing the core HbbTV spec itself
 - Still going through the HbbTV Requirements Group process
- Hopefully avoids problems others had with debatably incompatible IPR policies

- HTTP/3 is added as optional
 - So it can be included in the test suite
- Should avoid some issues found with HTTP/2
 - Browsers in some HbbTV devices supported HTTP/2 in theory but never tested
 - Apps hosted on servers supported HTTP/2
 - ISPs did not support HTTP/2 so not used when apps first used
- Then one day some ISPs removed barriers to HTTP/2
 - Apps stopped working on some devices for no clear reason
 - No way for device manufacturer or app developer to know that ISPs had done something

- DVB-I A177r7 adds 4 new application models
- Applications linked to a whole service list (types 4.1/4.2/4.3)
 - For a platform or service aggregator to obtain (GDPR) consent or agreement to terms & conditions or single sign-on (4.1)
 - 2 further related models - renewing consent or agreement (4.3) & allowing the user to withdraw consent (4.2)
- Application in series with media presentation (type 1.3)
 - Same as 4.1 but for a service provider to use across their services
 - May also be used for proactive DRM license acquisition

- Tiresias and font definitions
 - Requirements simplified as there is was only one supplier for Tiresias and Letter Gothic fonts
- Remove part of MediaSync
 - Video via broadcast and audio via broadband is very complex to implement & no longer relevant
 - Content providers can send both video and audio via broadband
 - Believed not used in the real world
- Remove "Do Not Track"
 - This approach never took off in the web
- Make "Transport Stream over IP" an optional feature
 - Only useful for backwards compatibility with oldest HbbTV devices

Improving memory management for MSE media playback



- Refers to memory management features from [Apple's 'Managed Media Source'](#)
 - Included in Working Draft of MSE v2 spec
 - No sign of Managed Media Source being picked up by Chrome or Firefox
- HbbTV implementations may evict buffered data when memory is low
 - Send “bufferedchange” event to the app
 - May give a better user experience than killing the app

- 2.0.5 includes 75 errata to 2.0.4
 - Built up over about 18 months
 - Some impact text inherited from 2.0.3 & earlier
 - Hopefully nobody is still implementing those
- About 30 relate to annex O, HbbTV/DVB-I integration
 - This is healthy & normal for the first time a new spec is implemented
- Some relate to the new accessibility feature introduced in 2.0.4
- Others are more varied

- HbbTV 2.0.5 is an incremental update to HbbTV 2.0.4
- Biggest change is fixing issues with 2.0.4, particularly the new annex O for DVB-I
- Only 3 mandatory new features
 - Implementations likely already support these in some form
 - 2.0.5 formalises these and provides a baseline for the future
- Optional features are mainly to enable unit tests to be developed for features that may be there anyway
 - Relying on features to “just work” without testing is dangerous