Update on our Specifications and Related Activities

Reminder of HbbTV 2.0.4

- Spec published by HbbTV March 2023, [by ETSI September 2023](#)
  - Tests included in 2024-1 release and extended in 2024-2 release (August 2024)
  - Should permit HbbTV 2.0.4 products in 2025
- Key features
  - Integration with accessibility - particularly important as the European Accessibility Act becomes EU law in 2025
    - HbbTV does not require support for any particular accessibility feature, left to other regulations
  - Integration with DVB-I
    - Enable HbbTV "red button" broadcast-related apps in a DVB-I DASH-delivered service / channel
    - Enable HbbTV apps as DVB-I "application controlling media presentation", e.g. using dash.js or hls.js with MSE & EME
  - Integration with voice assistants
    - If someone uses voice input to get to an HbbTV app, forcing switching to the remote control to use the app is a poor user experience
- Deprecations of some less used / duplicated features
  - Deprecation = announcement of intent to remove in the future, not a removal in 2.0.4
- For more details, see [the explainer](#)

HbbTV Spec 2.0.5 - New Features

- Specification coming next year
  - Maybe in time for 2026 products but it's not that simple
- Most significant additions are WebAssembly ("WASM") and DRM
  - Excellent WASM demo at IBC from 3CAT using this for software video decoding for signing
    - Will already be in today's TVs unless explicitly disabled or removed
  - Documenting today's reality so it's more testable and content providers can rely on it
- Also optional support for 2 features
  - New video codecs AV1 and VVC
    - AV1 probably works 'accidentally' from HbbTV in some of today's TVs
  - HTTP/3 (i.e. including QUIC)
- Also tidying up unused & historical features – more on the next slide
- Many bug fixes, particularly to HbbTV / DVB-I integration from HbbTV 2.0.4
  - Lots of good feedback from early implementers and test developers

HbbTV 2.0.5 – Tidying Up

- Multi-stream sync (broadcast video + OTT audio) is removed
  - Never really used, very complex to implement & maintain
  - Instead use OTT video + OTT audio
  - This removal only applies to 2.0.5, it has not been removed from 2.0.4
- OTT streaming in MPEG-2 transport stream format now optional
  - Content providers should be moving towards DASH or MSE
  - Content providers that want to keep using this exclusively need to communicate with implementers
- Relaxed requirements for built-in fonts
  - Permit more alternatives to "Tiresias" and "Letter Gothic" as long as the font metrics are no larger
- "Do Not Track" (DNT) removed as it's died in the web and may mislead people

DRM "Guidelines"

- Historically HbbTV and some national organisations had bad experiences saying anything about DRM
  - HbbTV was silent about DRM for many years
  - Resulted in market fragmentation & apps / services using proprietary solutions
- Market feedback was that people couldn't make HbbTV+DASH+DRM work in the real world
  - Resulted in HbbTV creating the DASH-DRM reference app
  - In turn, that gave HbbTV objective data about actual market support of DRM systems
- Now developing a document on integration of HbbTV and DRM
  - First version includes PlayReady and Widevine + objective critieria for including more later
- Provides a mixture of material:
  - Background material on DRM,
  - Guidelines for content providers, platforms and operators, and
  - Requirements for implementations
- HbbTV 2.0.5 will require terminals support "decryption and presentation of DRM-protected video and audio broadband content using at least one of the DRM systems" in the DRM guidelines
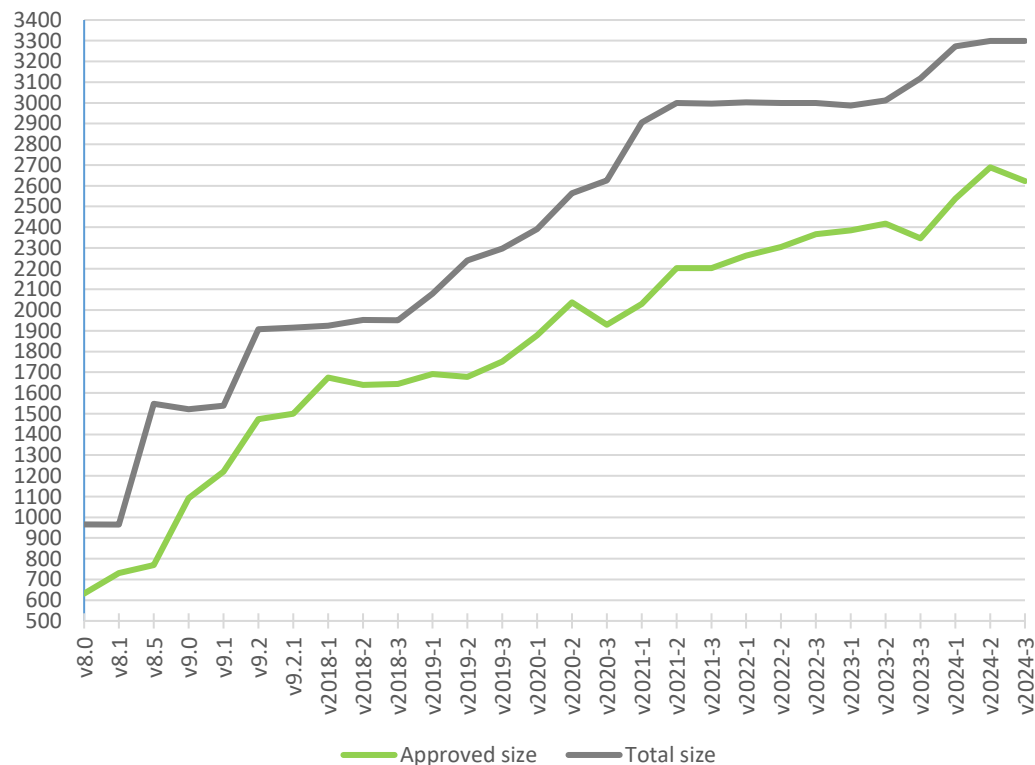
Example Data from DASH-DRM Ref App

| | | | = OK | | = Fatal | | = Major | | = Minor | x | = Do not test |

| No. | Year | HbbTV | PlayReady 1 | | | | | | | | | | | | |
			2.1 AVC 1080p	2.1.1 AVC 1080p LaUrl in mpd	2.1.2 AVC 1080p ExpressPlay	2.2 HEVC 2160p	2.3 Out-of-band subtitles	2.4 In-band subtitles	2.5 Advert insertion	2.6 In-band events	2.7 Multiple audio	2.8 Multiple moof/mdat 8s segdur	2.9 AVC 1080p SL2000	2.10 HEVC 2160p SL2000	2.11 AVC 1080p SL3000
149	2023	1.6.1	OK	OK	OK	#6	#28	#6	#49	#6	OK	OK	OK	#6	OK
150	2023	1.6.1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
159	2023	1.6.1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
162	2023	1.6.1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
172	2023	1.6.1	#20	OK	#20	#20	#20	#20	#21	#20	#20	OK	#20	#20	#20
179	2023	1.6.1	#25	#19	#25	#25	#25	#25	#25	#25	#25	#19	#25	#25	#25
183	2023	1.6.1	OK	OK	OK	OK	#17	#16	OK	OK	OK	OK	OK	OK	OK
186	2023	1.6.1	#5	#4	#4	#4	#4	#4	#23	#23	#4	#4	#4	#4	#4
201	2023	1.6.1	OK	#36	#6	#6	#6	#6	#6	#6	#36	OK	#6	#36	#36
192	2024	1.6.1	OK	OK	OK	OK	OK	#3	OK	#3	OK	OK	OK	OK	OK
193	2024	1.6.1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
197	2024	1.6.1	OK	OK	OK	OK	OK	#3	OK	#3	OK	OK	OK	OK	OK
199	2024	1.6.1	OK	OK	OK	OK	OK	#35	OK	#11	OK	OK	OK	OK	OK
208	2024	1.6.1	OK	OK	OK	#20	OK	OK	OK	OK	OK	OK	OK	#20	OK
209	2024	1.6.1	OK	#4	#4	#4	#4	OK	OK	OK	OK	OK	OK	OK	OK
213	2024	1.6.1	OK	OK	OK	OK	OK	#66	OK	OK	OK	#11	OK	OK	OK
217	2024	1.6.1	OK	OK	OK	OK	OK	OK	#6	OK	OK	OK	OK	OK	OK
218	2024	1.6.1	#36	OK	#36	#36	#36	#36	#40	#26	#36	OK	#36	#36	#36

HbbTV members can look at https://member.hbbtv.org/wg/IITF/document/7421

Unit Test Suite Progress

Name	Approved size	% approved	Total size (HbbTV)	Total size	Date
v2018-1	1674	87%	1924	2118	23.03.2018
v2018-2	1639	84%	1952	2146	04.07.2018
v2018-3	1644	84%	1951	2146	11.11.2018
v2019-1	1691	81%	2079	2274	15.03.2019
v2019-2	1677	75%	2239	2434	23.07.2019
v2019-3	1751	76%	2297	2492	12.11.2019
v2020-1	1879	79%	2391	2586	11.03.2020
v2020-2	2037	79%	2564	2759	13.07.2020
v2020-3	1929	73%	2626	2821	16.11.2020
v2021-1	2029	73%	2768	2963	26.03.2021
v2021-2	2202	79%	2799	3000	13.07.2021
v2021-3	2202	79%	2796	2997	17.11.2021
v2022-1	2263	81%	2801	3002	11.3.2022
v2022-2	2304	82%	2799	3000	14.7.2022
v2022-3	2367	85%	2798	2999	25.11.2022
v2023-1	2385	86%	2786	2987	17.3.2023
v2023-2	2417	87%	2785	3012	14.7.2023
v2023-3	2347	81%	2892	3119	20.10.2023
v2024-1	2538	84%	3033	3273	19.3.2024
v2024-2	2689	88%	3059	3299	19.7.2024
v2024-3	2623	86%	3059	3299	28.10.2024

DRM and Country-Specific Tests

- Over the years, several countries / platforms have evolved their own extensions to the HbbTV test suite
  - Started with DRM tests but grew
  - Complicated the process of implementing and certifying HbbTV
- HbbTV has reviewed two of these, Italy and UK
  - Review identified many improvements to be made to the DRM "Guidelines"
- Recently issued an RfP to bring these into the main HbbTV test suite
  - DRM tests for new EME API & advanced features with old oipfDrmAgent API
    - Tests for basic functionality with old oipfDrmAgent API are for later consideration – currently required in at least Australia & Spain
  - Non-DRM tests that are generally applicable
    - i.e. not country / platform specific after all
- Ideally UK and Italy will not need their country / platform specific HbbTV test suites from 2025-2 test suite release onwards
  - Although this is ultimately their decision

Activities Covered Later in More Detail

- Panel @1815 today will cover in more detail
  - HbbTV's test suite for devices
  - DASH-DRM reference app
  - HbbTV's interop events / plugfests
  - Re-engised developer portal
  - DASH validator
  - DRM and other country / platform test suites
- All are also good topics for the unconference tomorrow
  - Some already have proposals in the unconference hub