Update on our Specifications and Related Activities

Jon Piesing
Vice-Chair HbbTV Association & Director Standardisation TP Vision
HbbTV Specification Workflow

- **Requirements Group**: Develops requirements
- **Steering Group**: Approves requirements
- **Specification Group**: Writes specification and unit test descriptions
- **Steering Group**: Approves specification for publication and sending to ETSI
- **Supplier Evaluation WG**: Obtains quotations for test Suite, evaluates and recommends to SG
- **Improving Interoperability Task Force**: Collects feedback on interoperability in the market
- **Steering Group**: Approves test suite release
- **Testing Group**: Organises review and acceptance of tests
- **Steering Group**: Decides on recommendation From SEWG
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Requirements Group

- Annual process to identify new requirements with support across the value chain
  - Broadcasters, operators / platforms and manufacturers
- 2020 requirements are being included in HbbTV 2.0.4/1.7.1
  - Details are in the Specification Group section up next
- 2021 requirements (still work in progress, some included in HbbTV 2.0.4/1.7.1)
  - Optional support for next generation video codecs – e.g. VVC, AVS3, AV1
  - Optional launching TV OS apps from HbbTV
  - Web standards update
  - Support for higher graphics resolutions
  - IPv6
- Deprecations
  - Features that will be removed in a following version, e.g. not used, replaced, …
    - Don't panic – not removed yet, just a warning added, time to adapt your app or complain to HbbTV
  - Tiresias resident font
  - On-screen keyboard provided by TV for text input (apps do this themselves when they need it)
  - OTT streaming of MPEG-2 transport streams
  - The A/V control object from HbbTV 1.0/1.5 will eventually be deprecated and subsequently removed
- Removal without deprecation
  - Reserved for features that have never been used, e.g. obscure / duplicative parts of HbbTV 2
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From SEWG
Specifications – 2.0.4 / 1.7.1

• Next version of the core HbbTV specification
  – Aimed at products going on sale in 2024/5
  – Addresses 2020 & some 2021 requirements

• Access to TV OS accessibility features, settings & preferences
  – Screen Magnifier, High Contrast UI, Response / feedback to user on actions, audio description, audio dialogue enhancement control
  – Particularly relevant given the European Accessibility Act which comes into effect in 2025
  – HbbTV spec will not require any specific accessibility features
    • About enabling HbbTV apps to work with features already supported by the TV OS
• Voice assistant integration (e.g. Alexa, Google Assistant, ...)

• Optional, HbbTV spec will not require any voice assistant
• Integration with DVB-I for linear OTT services
  – Particularly support for 'red button' broadcast-related apps
    • Existing broadcast APIs and features mapped to broadband / DASH
  – *Most* HbbTV red-button apps should be able to work on a DVB-I OTT streamed service without *significant* modification
    • 100% perfect mapping not possible

• Smaller improvements
  – Update web platform from 2018 to relevant APIs in 2021 desktop browsers (tbc)
  – Improved support for device graphics resolutions > 1280x720
  – Audio mixing enhancements
  – Notifying applications when they are hidden or suspended and resumed
  – IPv6

• Deprecations & removals according to Requirements Group list
Other Specification Updates

• Combined "application discovery over broadband" & "targeted advertising"
  – Enables HbbTV TA where "broadcast" is received by a STB
  – Also covered yesterday in Verance talk "Targeted advertising using watermarking"

• Operator applications – work in progress
  – Learning lessons from the HD+ OpApp experience
    • Many small but important details needed for the concept to work
    • Like to thank HD+ and their supplier Yotta Media for their input
  – Enable linking OpApp with CI+ CA module
    • User inserts module into TV, OpApp is installed
    • See SmarDTV and Irdeto sessions later today
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From SEWG
• RfP for targeted advertising test cases
  – Work divided across 4 suppliers
    • DTG Testing
    • Eurofins
    • Fraunhofer FOKUS
    • Ocean Blue Software (OBS)
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Testing - 2021

- 3 test suite releases during 2021 – 2021-1, 2021-2, 2021-3
  - 2021-3 includes total 2997 test cases, 2202 of them approved.

### Core HbbTV
- Approved: 91%
- Reviewed: 2%
- Rejected: 5%
- Need review: 2%

### OpApps
- Approved: 58%
- Need review: 35%
- Reviewed: 3%
- Rejected: 4%

### TA
- Approved: 45%
- Reviewed: 22%
- Need review: 32%
- Rejected: 1%
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Testing – Looking Forwards

• Continual churn of challenges to existing test cases
  – Need to be analysed, fixed & fixes reviewed
• Improving our cloud based infrastructure
  – HbbTV provisioned test servers for TLS-related tests
  – Daily executed scripts for statistics gathering and report generation
• Integration of web platform tests from W3C and MSE media playback tests from CTA WAVE
  – How do to this technically, structurally & maintain compatibility with the existing statistics gathering & report generation scripts
  – For W3C web platform tests, need to define a subset (few hundred?) as there are far, far too many of these to include all in the HbbTV test suite
• Push OpApp and TA tests through to "Approved"
  – Never approved OpApp tests need reviewing & resulting issues fixing
  – Challenged TA tests need fixing & re-reviewing
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Improving Interoperability

• Survey: "What are the top 3 interoperability issues you face?"
  – Results
    • Not always clear whether devices passed all the available material in Test Suite & if the Ref App runs OK
    • Some possible test gaps which may be addressed by new initiatives like inclusion of WPT / MSE tests
    • Some issues beyond HbbTV Association's remit: regional / national platforms play an important role
    • More education, hopefully new developer portal will help

• HbbTV – DASH – DRM reference app
  – HbbTV pays for this app be run on a receiver zoo & is provided with anonymised results (see next slide)
  – Recently updated to include content protected by PlayReady SL3000 – initiated by Salto
    • Becoming important to content providers but previously no test content available – not surprising it didn't work
    • Tested on a number of HbbTV TVs and works on some of them
      • In some cases the manufacturer deployed a fix via a software update
  – Being updated to simulate results of service-side ad insertion in DASH
    • Multiple periods with transitions encrypted/clear, subtitles/not, ……
  – Reminder
    • Open source license – re-use as-is, copy bits, do things the same way, …. 
    • Available on github at https://github.com/HbbTV-Assocation/ReferenceApplication

• DASH content validator
  – Extensions to DASH-IF validator to support HbbTV 1.5 DASH and DVB-DASH as used in HbbTV 2.0 now integrated in DASH-IF validator - https://conformance.dashif.org
    • HbbTV "mode" selected based on contents of DASH MPD
  – Project about to be launched to re-architect & clean up all the legacy code
Anonymised Summary of DASH-DRM Ref App Results

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HbbTV members can obtain access to the full table via the IITF area on Higher Logic
Call to Action

• If your company is an HbbTV member, please come & participate in the working groups and task forces
• If your company is not an HbbTV member & you see something interesting or important, please join and participate