

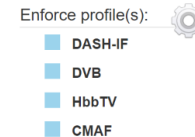


# DVB-HbbTV Extension to DASH Conformance Software Tool



# What is the DVB-HbbTV Conformance Software Tool?

- DVB-HbbTV Conformance Software Tool is an extension to DASH-IF Conformance Software
- The tool checks if
  - the provided MPEG-DASH MPD manifest
  - media content (segments) pointed to by the provided manifest conform to DASH-related media specifications.
- Thus, it provides crucial information for content generators and service providers.



Validation (Conformance check) of ISO/IEC 23009-1 MPEG-DASH MPD and Segments

Enter MPD URL

Choose a file or drag it here.

GO

MPD conformance only

- Specifications against which conformance is performed include:
  - MPEG-DASH ISO/IEC 23009-1
  - ISO BMFF ISO/IEC 14496-12
  - DASH-IF IOP 4.1
  - CMAF ISO/IEC 23000-19
- Additionally, DVB-HbbTV Conformance extensions
  - DVB MPEG DASH Profile v1.1.1
  - HbbTV 1.5 Specification
- Checks include:
  - MPEG-DASH MPD validation (XML, DASH schema, and MPEG-DASH MPD rules)
  - Segment Validation (ISO BMFF and MPEG-DASH segment rules)
  - Cross-representation validation (MPEG-DASH cross-representation rules)
  - Live MPD segment access validation
  - Above items for above mentioned specifications

Note: The checks are done till the ISO BMFF level (no checks on track media level)



# How to access the DVB-HbbTV Conformance Software Tool?

- Accessible online via DASH-IF

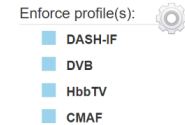
<https://conformance.dashif.org>



Source code and issue reporting

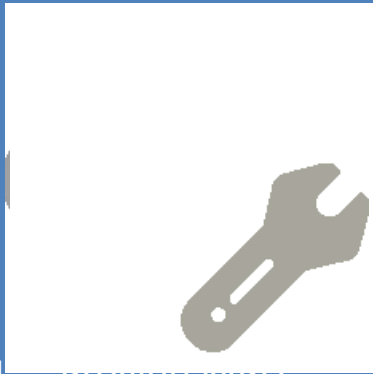
<https://github.com/Dash-Industry-Forum/Conformance-Software>

<https://github.com/Dash-Industry-Forum/Conformance-and-reference-source>



# How does the DVB-HbbTV Conformance Software Tool work?

## 1. INPUT



1. Provide MPD
2. Optionally enforce profiles
3. Click

## 2. PROCESS



1. Perform checks for conformance
2. Generate reports

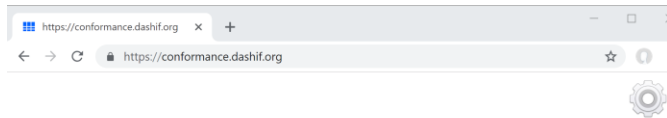
## 3. RESULTS




Check result report

# How does the DVB-HbbTV Conformance Software Tool work? (cont'd)

- MPD can be provided through the following ways:
  - URL can be provided if the MPD is located on an accessible server in the text box.
  - If MPD is stored locally, file upload or drag & drop features can be used.

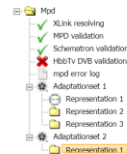


- Optionally enforce profiles for enabling conformance checks for enforced specifications (gear icon on top-right).
- Click  and wait for the results.

# How does the DVB-HbbTV Conformance Software Tool work? (cont'd)



- Conformance checks are performed for the provided MPD and the media content pointed to by this MPD.
- Reports are generated for users to check and analyze.



## DASH Validator

Validation (Conformance check) of ISO/IEC 23009-1 MPEG-DASH MPD and Segments

<http://dash.akamaized.net/dash264/TestCases/1a/qualcomm/1/MultiRate.mpd>

Choose a file or drag it here.

GO

MPD conformance only

Processing Representation 1 in Adaptationset 1, 72% done ( 315 KB downloaded, 50 MB processed )

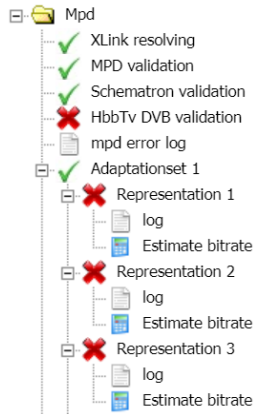
Profiles: urn:mpeg:dash:profile:isoff-on-demand:2011, <http://dashif.org/guidelines/dash264>

[Feature list](#)

Enforce profile(s): 

- DASH-IF
- DVB
- HbbTV
- CMAF

# How does the DVB-HbbTV Conformance Software Tool work? (cont'd)




- Generated reports are provided to users in a tree format on the web interface. Green tick indicates conformance, warning icon indicates conformance with warnings and cancel button indicates nonconformance.
- User can double click on any report indicated by a file icon to see the results. Reports are color-coded for **information**, **warning**, and **error** messages for easier reading.
- User can report any issue regarding the results and/or software tool by clicking [Report issue](#) on the bottom of the web interface.



# How does the DVB-HbbTV Conformance Software Tool work? (cont'd)

## Live Conformance

- When MPD@type = dynamic
  - A link redirecting to live conformance is provided on the web interface.
  - When clicked, Live Conformance opens up on a new tab.
  - Click 
  - Segment availability start times and segment availability end times will be checked
  - The results will be printed on “Process in detail” panel

