

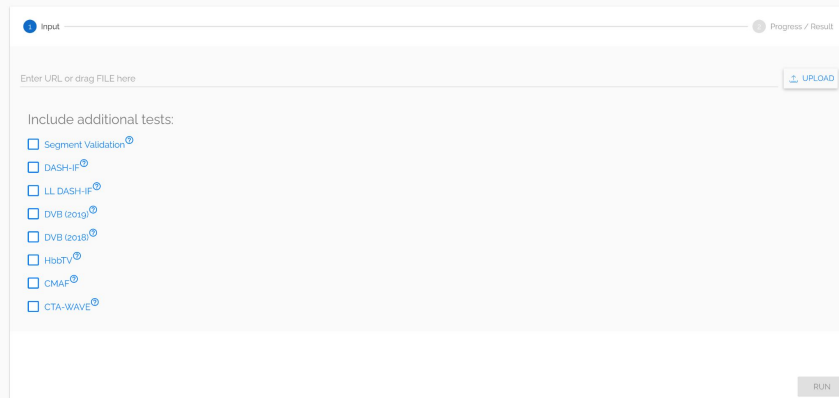
Joint Content Conformance Project (JCCP) - a validator for DASH and HLS content

OSMART 2024/12/05 - romain.bouqueau@motionspell.com
Sponsored by CTA WAVE

The Conformance Validator

- Presented at OSMART#2
- **What:** Validate DASH content against different guidelines and profiles : DASH-IF, DVB, HbbTV, CMAF, CTA-WAVE
- **How:** MPD and segment validation of VoD and live streams
- **Why:** Conformance is the key for interoperability
- **Where:**
 - <https://github.com/Dash-Industry-Forum/DASH-IF-Conformance>
 - <https://conformance.dashif.org/>
- JCCP was the name of the refactoring effort, but now serves as the project name!

 **DASH** Industry Forum Conformance Tool



The screenshot shows the web interface of the DASH Conformance Tool. At the top, there is a header with the DASH Industry Forum logo and the text 'Conformance Tool'. Below the header, the interface is divided into two main sections: 'Input' and 'Progress / Result'. The 'Input' section contains a text box for 'Enter URL or drag FILE here' and an 'UPLOAD' button. Below this, there is a section titled 'Include additional tests:' with a list of checkboxes for various standards: Segment Validation, DASH-IF, LL DASH-IF, DVB (2019), DVB (2018), HbbTV, CMAF, and CTA-WAVE. The 'Progress / Result' section is currently empty. At the bottom right of the interface, there is a 'RUN' button.

Development Progress

- DASH-HLS specification ([CTA-5005-A](#))
- Main Developer: Erik Zandvliet
- Last release: 2.3.0 on Sept 16, 2024
 - Previous release (2.2.3) was on 2023-08-23
 - New features:
 - Validator system
 - PHP 8 Upgrade
 - More robust segment downloading
 - New specs:
 - CTAWave 5005A
 - TS 103 285 v1.4.1 (DVB Live requirements)

How does work happen

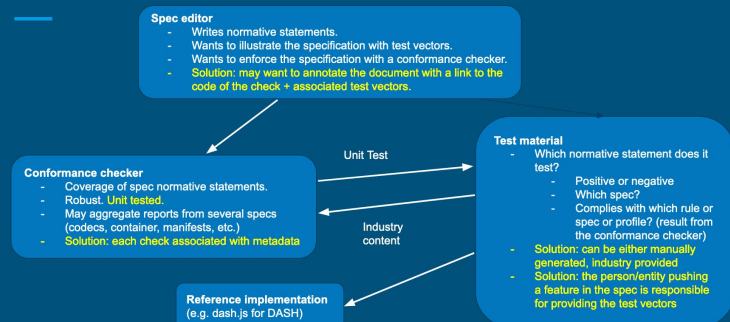
- CTA came with a list of requirements:
 - typically a few dozens
 - we comment them back on feasibility, complexity, and long-term value

- Ideally specification editors should communicate with conformance

I can generate a formal RFP if that's helpful. However, the spec requirements are below.

Section Number	Section Name	Requirement Type	Details
4.1	Basic On-Demand and Live Streaming	General	Text components SHALL be packaged in one of the following CMAF profiles: - '1m1f' - TTML IMSC1 Text - '1m2f' - TTML IMSC1.1 Text - 'cmvf' - WebVTT
4.1	Basic On-Demand and Live Streaming	General	Track files conforming to a CMAF Addressable Media Object SHALL have a SegmentIndexBox ('sidx')
4.1	Basic On-Demand and Live Streaming	Maximum	For on-demand tracks, Average Bitrate* of a CMAF Fragment within a CMAF within 10% of the Average Bitrate calculated over the full duration of the Track *Average Bitrate - The sum of bits observed in a defined time window divided by defined time window.

Conformance: who?

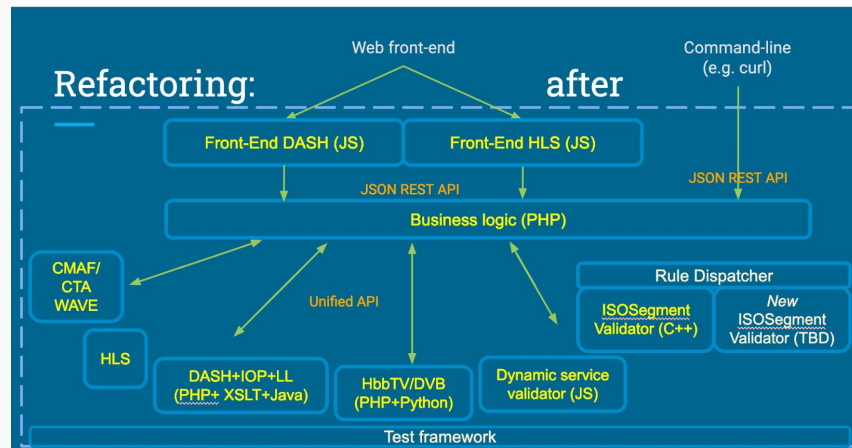


Synergies

- Used for DPCTF: test content generation from CTA WAVE
 - More robust, more reactive, see Erik's presentation on 2024/06/05
- Virtually used by any generator or player:
 - dash.js, livesim2, 5G-MAG, DVB-I, HbbTV, ...
- This specific development was sponsored by CTA-WAVE
 - Important contribution from DVB too (added some live support).
 - Expecting other SDOs to step in as they need the tool: ATSC, HbbTV, SVTA/DASH-IF, ...

Challenges and Future

- JCCP is a popular tool (analytics), but receives few contributions from users and companies.
 - Needed to fix, validate specifications, add test vectors.
- Reasons:
 - Hard to use: see the JCCP effort.
 - Mostly written in PHP: decision to keep the core in PHP while allowing modules in any language.
 - Could go further and plug with other tools. Already uses GPAC for parsing as a replacement of the ISOSegmentValidator.



Thanks to CTA and OSMART!

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