

AOM – AV1 verification

Ioannis Katsavounidis

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AOM – Alliance for Open Media

- <http://aomedia.org/>
- “AOMedia unites top tech leaders behind a collaborative effort to offer open, royalty-free and interoperable solutions for the next generation of media delivery. The Alliance's shared vision is to make media technology more efficient, cost-effective and of superior quality for all users, on all devices, and on all platforms using AOM standards & tools.”

AV1

- <http://aomedia.org/av1/specification/>
- Finalized July 2018, current version (1.0.0 with errata) Jan. 2019
- Coding efficiency is about 30% higher than VP9
- Has already been adopted by multiple companies
 - Google (YouTube), Netflix, Facebook
- Open-source encoders:
 - [Libaom](#) (reference code used during development)
 - [SVT-AV1](#)
 - [Rav1e](#)

AV1

- Open-source SW decoders
 - Libaom (reference decoder)
 - SVT-AV1
 - [Libgav1](#) (Android-optimized decoder)
 - [Dav1d](#) (multi-platform optimized decoder)
- Multiple HW decoders and encoders developed

AV1 verification

- Multiple research groups have compared AV1 against other coding formats
 - Mostly using objective metrics (PSNR, SSIM, VMAF)
- Some groups did subjective testing
 - Gaming content (Kingston Univ.)
 - General content (Univ. of Bristol)
- No “formal” verification tests have been performed to validate compression efficiency of AV1
- Other coding standards (HEVC, VVC) have performed subjective verification of coding gains as part of the development process

AV1 verification plan (tentative)

- High level summary:
 - Use SDR and HDR sequences (HD and UHD) – total about 30 sequences
 - 10-sec stimuli
 - DSIS 11-scale (?) methodology
 - Large-screen TV display
 - 30 observers

VQEG ask

- Feedback on test plan
- Availability of labs to perform such testing
- Possibility to make additional subjective testing available to AOM and AOM members in the future