

draft-ietf-netvc-testing-03

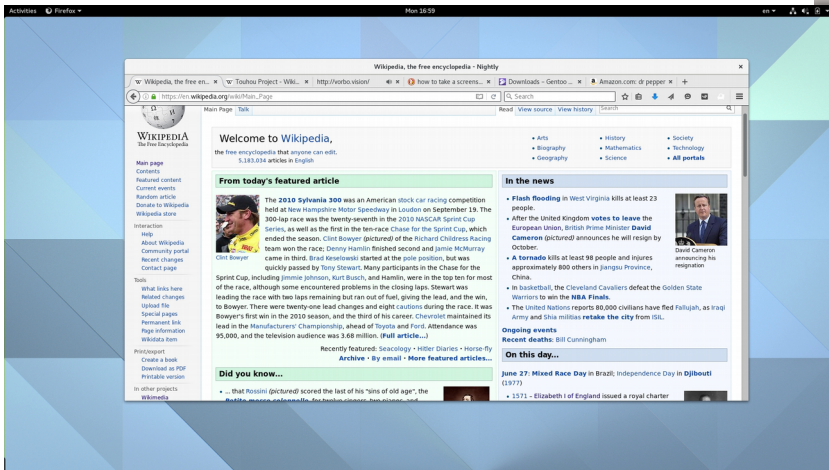
IETF 96

Sub-Agenda

- Set results
- BD-Rate calculations
- Software updates
- TODO



PedestrianCrossing and ToddlerFountain from Netflix
CC-BY-NC-ND 4.0 <https://media.xiph.org/video/derf/>



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Set Selections

- Objective-1 and Objective-1-fast now deployed
- Objective-1-fast is not actually that fast... (4 hours)
 - Mostly solvable by software improvements

Set Selections

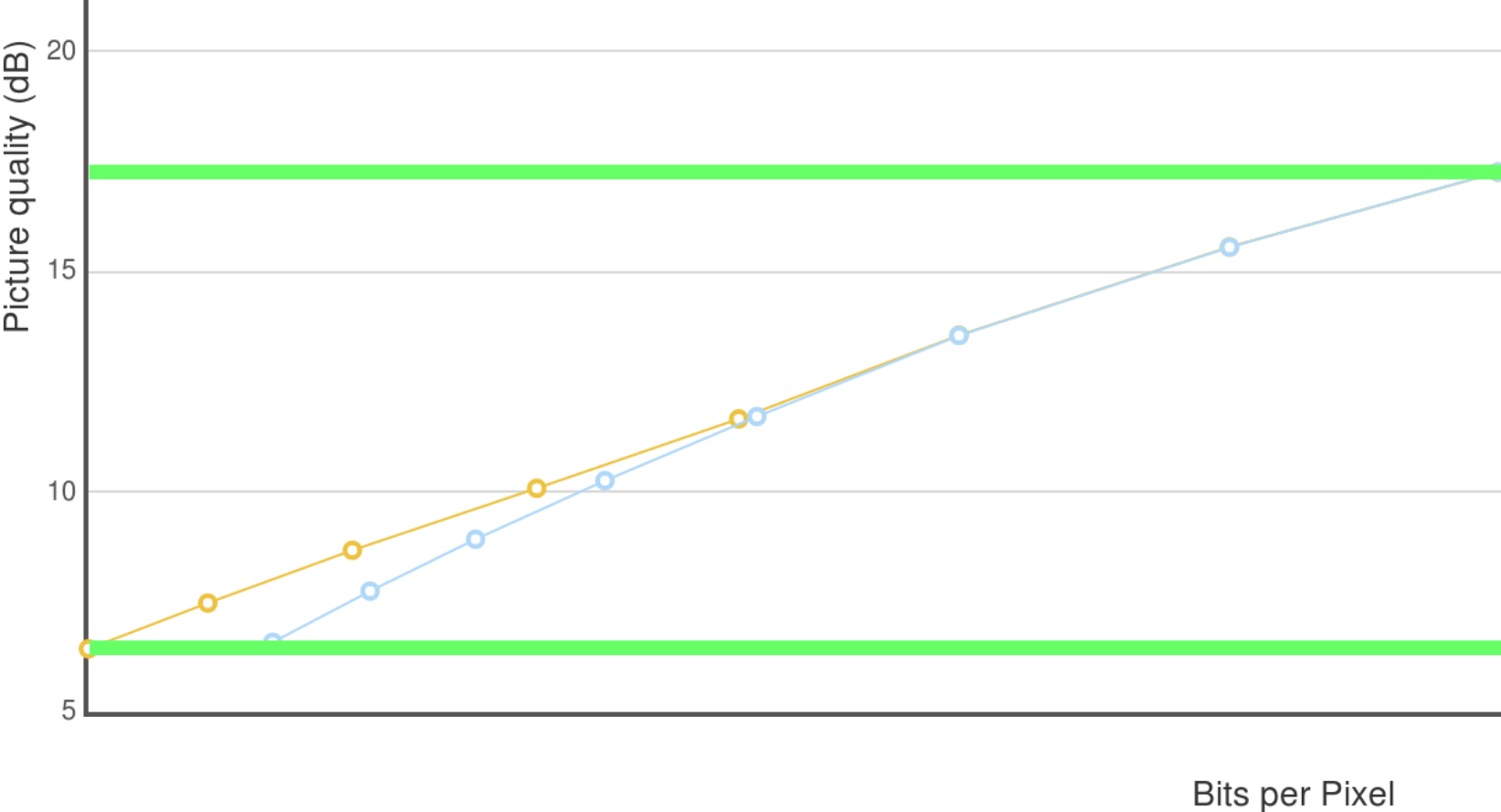
- Has already found bugs

file	PSNR	PSNR Cb	PSNR Cr
DOTA2_60f_420.y4m	-0.98	0.30	0.43
KristenAndSara_1280x720_60f.y4m	-1.67	-0.87	-1.20
MINECRAFT_60f_420.y4m	-6.24	15.43	11.51
x_Aerial_1920x1080_60fps_8bit_420_	-0.15	-0.03	-0.89
x_Boat_1920x1080_60fps_8bit_420_60	0.04	0.29	0.40

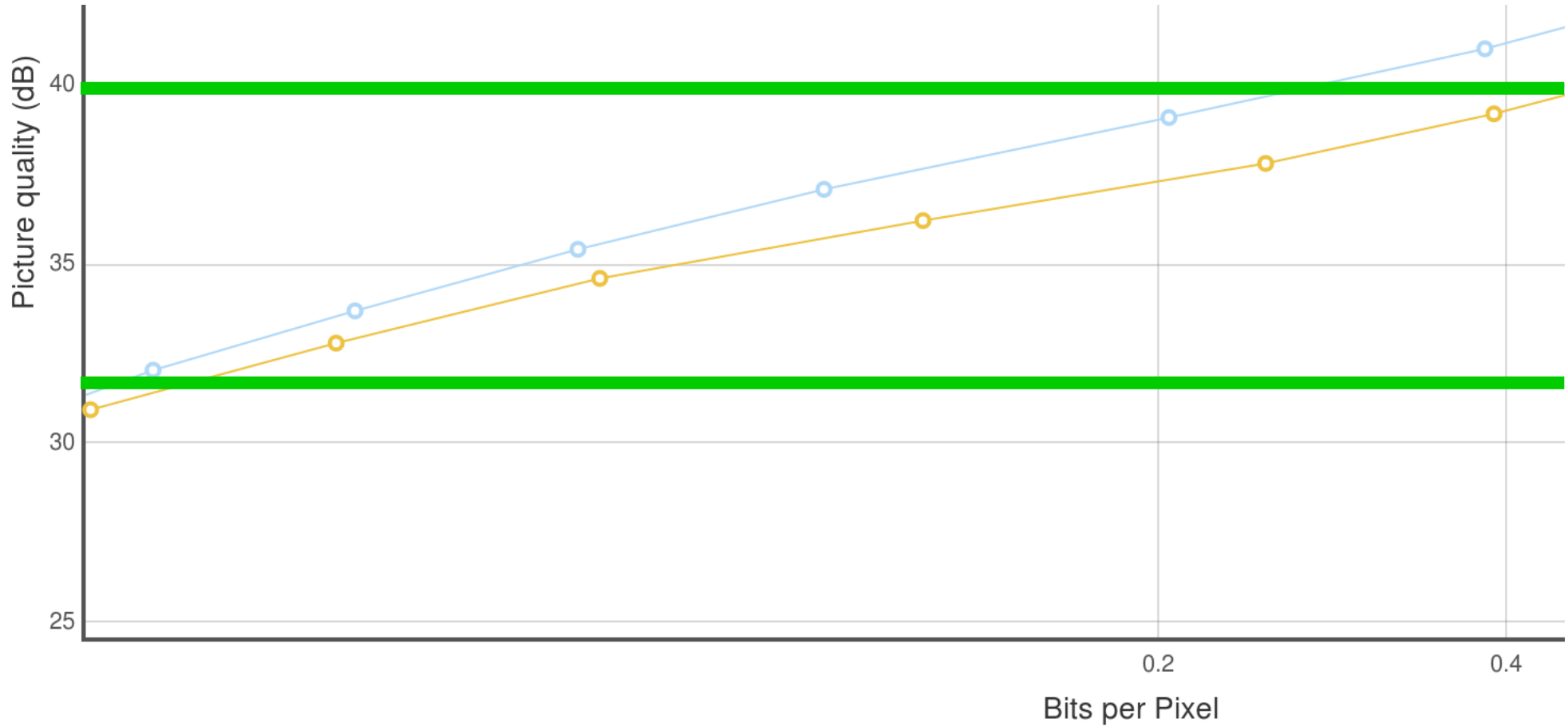
BD-Rate Range

- Removed deprecated bitrate range method
- Tests showed that Q bound method gave nearly identical results to anchor method for most changes, so allowed this when doing AV1 vs AV1 tests

BD-Rate Range – Quantizer-derived



BD-Rate Range – Anchor-derived



Software updates

- Objective-1 includes 10bit content, which the metric tools didn't previously handle
- All previous metric tools updated to support 10 bit content (PSNR, PSNR-HVS-M, SSIM, FASTSSIM, MS-SSIM)

New metric - VMAF

- Video Multi-Method Assessment Fusion – new metric by Netflix
- Source code to VMAF metric released:
 - <https://github.com/netflix/vmaf>
- Supports 10-bit out of the box

TODO for -04

SDR

HDR



REC.709 COLOR
ACTUAL PEAK LUMINANCE 98 NITS

REC.2020 COLOR
ACTUAL PEAK LUMINANCE 972 NITS

TODO for -04

- New HDR sources available
 - amazon_hdr_education_reel
 - More coming soon
- Plan is to test using existing metrics [1]

[1] http://dml.ece.ubc.ca/publications/conference/2014_ICMSP_Azimi_Evaluating%20the%20Performance.pdf

TODO for -04

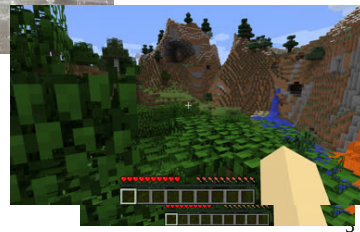
- Rate controlled testing
 - VBV style buffer model enforced by external tool

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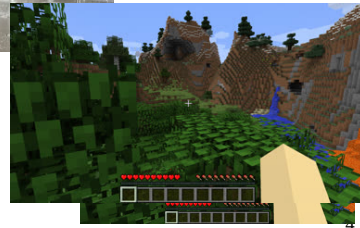
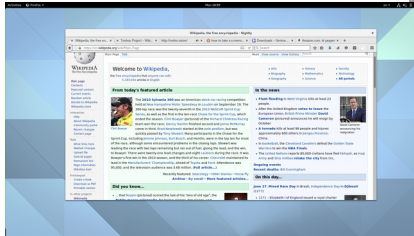
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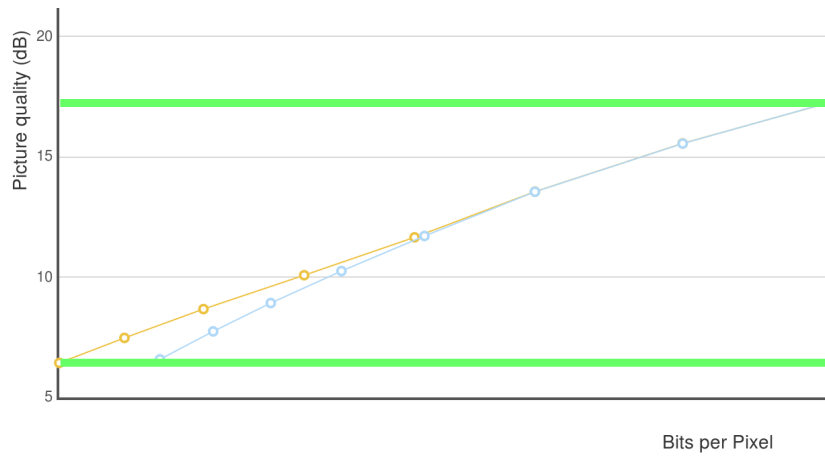
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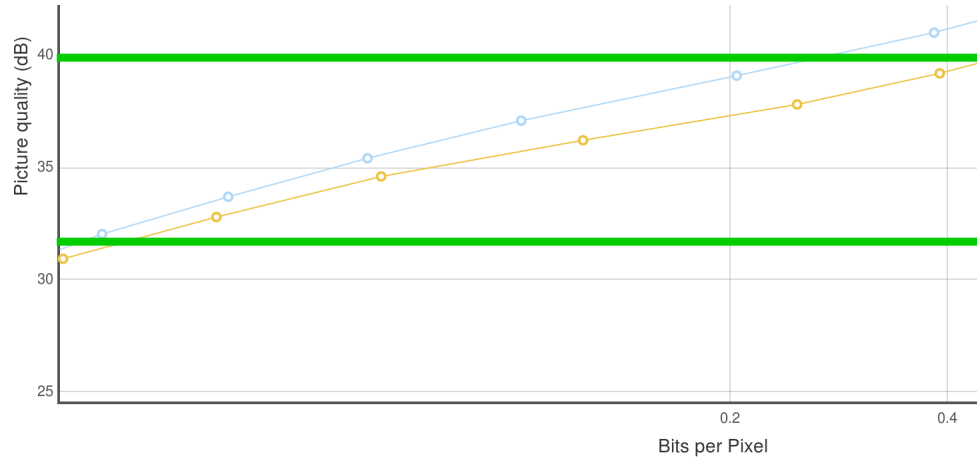
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