- Release Notes v5.3

VQ Analyzer 2020

Release Notes ver 5.3

Overview

The **VQ Analyzer** is a graphical coded video bitstream analysis tool, supporting the following coding standards:

- VVC, SHA-1 (VTM 9.0 tag): 5d7f8127910f424c592fa26f09e3170082ad885a
- AV1, SHA-1 (av1-normative branch of AOM source): acc3f97753f67e0ce7290b98b7bb71152fe5e264
- HEVC: (ISO/IEC 23008-2 MPEG-H Part 2 or ITU-T H.265) , 8/10-bit
- HEVC: RExt extension, 8/10/12-bit, 4:0:0/4:2:0/4:2:2/4:4:4
- HEVC: SCC extension, conform to HM + SCM 8.6 in reference code
- HEVC Scalable/Multiview Extension
- Google's VP9, profiles 0,1,2,3, 4:2:0/4:2:2/4:4:0/4:4:4, 8/10/12-bit
- AVC: (H.264/AVC, ISO/IEC 14496-10, MPEG-4 Part 10), except SVC/MVC
- MPEG2 (ISO/IEC 13818-2 Part 2), 4:2:0/4:2:2, 8-bit
- MKV, MP4, MMT(ARIB STD-B60 1.0), MPEG2 TS/PS, AVI, ASF, FLV, IVF containers

Once a bitstream is loaded, the tool allows the user to inspect each major step of the decode process visually and numerically, and the structure of the coded image can be explored. This data can be used as a visual reference when learning about HEVC/VP9/AVC/MPEG2/AV1/VVC or when debugging a particular encoder or decoder.

New Features

- VVC Versatile Video Coding (MPEG-I Part 3) is a video compression standard
    - subPicture boundaries drawing
    - add number of subPicture in selection info
    - detaled info for CIIP blocks
    - IBC main and details
    - BDPCM blocks marking
    - visualisation for affine motion model
    - add motion vectors differences for AMVP details
    - add motion vectors candidates for IBC, AMVP and affine details
    - separated chroma blocks in Info Overlays CU Types

Bug Fixes

- VVC

    - intra chroma details for separated chroma blocks in inter frames
- AVC
    - fix displaying of luma QP for high bit depth (>8) in Selection Info
- All:
    - R button in Info Overlays Statistic

System Requirements

Hardware

- 1GB RAM minimum, 4GB recommended when loading 4K pictures.

Software - Microsoft* Windows* 7, Microsoft* Windows* 8, Microsoft* Windows* 8.1, Microsoft* Windows* 10, 32-bit/64-bit. - Ubuntu* Linux* 16.04 and higher, SLES* 12 and higher, CentOS* 7.4 and higher - MacOS* 10.12 and higher

Package Contents

content: VQ Analyzer Release Notes (this file), VQ Analyzer User Guide, licenses, binary executables, tool's internal and third-party binaries.

Installation

To begin installation: - Double-click on the executable file to begin installation.

Activation during installation You must activate the product to finish installation. Use one of these methods: - Activation using serial number. Internet connection is required; - Remote activation using serial number. Used when your computer is not connected to the internet. You can use another computer with internet access; - Activation using license file; - Activation using license server. - You can also evaluate the product for trial period.
If you have problems with installation under MacOS*, please, check System Preferences -> Security & Privacy options under "Allow apps downloaded from:". The option "Mac App Store and identified developers" should be checked.

Known Limitations

The VQ Analyzer has the following known limitations: - AVC/HEVC HRD buffer fullness uses only Type II bitstream for visualization. - Archive yuv files (*.zip,* gz) fully unpacked in memory currently, huge files could require a lot of memory. - For zip files only first file in archive is considered to be used as compressed yuv file. Only deflate and store compression methods are supported. - Archived y4m files are not supported yet. - AVC decoding does not support gaps in frame_num and slice groups currently.

AV1 limitations: - Memory consumption can be high on 4K resolutions.

HEVC Conformance checks: - Bitstream conformance to active profile, tier and level representation and HRD parameters is tested on general representation only. (PTL syntax elements with prefix 'general_') - Bitstream conformance to

HRD parameters is tested using VUI parameters specified in active SPS only. - For Intra only profiles picture reordering is not tested. - Common Multilayer HEVC: external base layer configurations are not supported. - HEVC Slice data errors: bitstream restrictions specified SPS VUI or VPS VUI parameters are not supported.

HEVC Decoder behavior: - For Range extensions, High throughput and Screen-Extended (SCC) profiles in order to detect sub-profile (e.g. Monochrome, Main 444 12bit, …) bitstream constraint flags, coded in PTL, must be set according to the tables specified in clause A.3 of the spec. - For Still Picture profiles test for number of pictures present in bitstream is applied to whole bitstream file. - For Screen-Extended (SCC) profiles in order to detect these profiles, general_profile_idc must be set to 31 or general_compatibility_flag[31] must be set to 1. (same as of HM16.16+SCC8.5) (Will be changed to 9 (according to spec) in future releases) - Multilayer bitstreams are decoded with highest available index of Layer Set (TargetOlsIdx is set to NumOutputLayerSets – 1). All available layers will be output. - Different layers in Multiview HEVC stream must have the same resolution and chroma format for inter-layer prediction. (Configurations with different chroma format or resolution are still decodable, but resampling process for inter-layer prediction will be invoked in that cases) - SCC extensions presence in bitstream is tested on both position 3 and 6 of sps_extension_bit and pps_extension_bit.

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Zlib

zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.8, April 28th, 2013

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Qwt

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