

Title: JCT-VC AHG report: Chroma format support (AHG 20)

Status: Input Document to JCT-VC

Purpose: Ad-hoc group report

Author(s): David Flynn
Pankaj Topiwala
Dzung Hoang
Ken McCann

davidf@rd.bbc.co.uk
pankajtva@gmail.com
Dzung.Hoang@zenverge.com
ken@zetacast.com

Source: AHG 20

Abstract

This report summarizes the activities of Ad Hoc Group 20 on Chroma Formats between the 7th and 8th JCT-VC meetings.

Mandates

The ad hoc group was mandated to:

- Study aspects of the technical design and software that need modification to support non-4:2:0 chroma formats.
- Assist and advise in the work of removing implicit assumptions of 4:2:0 formatting from the WD and software (where feasible, without introducing technical design changes).

AHG activities

There was an interesting discussion reminding experts of the various merits of colour spaces and the pro's and cons of so called dumb spatial sub-sampling.

Contributions

A number of documents have been contributed, covering a number of areas:

- Hybrid coding [1, 2]
- Sub-sampling filters [3]
- Current issues affecting 4:2:0 [4]
- Syntax for monochrome [5]
- Modifications for 4:2:2 [6]

Recommendations

It is recommended to:

- Hold a BoG to cover the current progress on chroma format support, with reference to the above documents.
- Continue the AHG to investigate incompatibilities with the current working draft and the use of chroma formats other than 4:2:0.

References

- [1] T. Lin and S. Wang, "Mixed Chroma Sampling-rate coding: combining the merits of 4:4:4 and 4:2:0 and increasing the value of past 4:2:0 investment." JCTVC-H0065, Jan. 2012.
- [2] S. Wang and T. Lin, "4:4:4 screen content coding using Macroblock-Adaptive Mixed Chroma-Sampling-Rate." JCTVC-H0073, Jan. 2012.

- [3] W. Dai, M. Krishnan, and P. T. (FastVDO), "Coding in 444: Preferred Conversions in Color and Sampling." JCTVC-H0394, Jan. 2012.
- [4] E. François, S. Pautet, and C. (Canon), "Non-CE6a: Use of chroma phase in LM mode." JCTVC-H0177, Jan. 2012.
- [5] T. Hellman and W. W. (Broadcom), "Removal of Monochrome Chroma Format Support." JCTVC-H0457, Jan. 2012.
- [6] K. Sugimoto, A. Minezawa, and S. S. (Mitsubishi), "AHG20: 4:2:2 support in HEVC." JCTVC-H0650, Jan. 2012.