|  |  |
| --- | --- |
| Joint Collaborative Team on Video Coding (JCT-VC) **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  24th Meeting: Geneva, CH, 26 May – 1 June 2016 | Document: JCTVC-X0057 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **AHG13: Crosscheck report of JCTVC-X0050: ICTCP Compression Using HEVC Main 10** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Report | | |
| *Author(s) or Contact(s):* | Yuwen He, Yan Ye 9710 Scranton Rd, #250 San Diego, CA 92121, USA | Tel: Email: | +1-858-210-4819 [yuwen.he@interdigital.com](mailto:yuwen.he@interdigital.com)  [yan.ye@interdigital.com](mailto:yan.ye@interdigital.com) |
| *Source:* | InterDigital Communications, Inc. | | |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Abstract

This document reports crosscheck results for proposal JCTVC-X0050 on ICTCP Compression Using HEVC Main 10. The configuration and source code provided by the proponents were verified to be consistent with the description in JCTVC-X0050. Compared with HDR/WCG anchor v3.2, the BD rate-distortion performance was evaluated, and they match the results provided in JCTVC-X0050.

# Introduction

We cross-checked the simulation results using ICTCP PQ color space for compression based on configurations provided by proponents.

# Simulation results

Table 1 shows the BD rate performance coding with ICTCP color space compared to HDR/WCG anchor v3.2 with Y'CbCr color space. The results match those provided in JCTVC-X0050 (Table 5) [1]. The average BD rate saving for tPSNR-Y and DE2000 is about 0.8% and 12.3% respectively, compared to the anchor.

The detailed results can be found in the attached excel datasheets.

Table 1. Comparison of coding with ICTCP color space against Anchor 3.2 (Y'CbCr color space) under HDR/WCG CTC [2]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | X | Y | Z | XYZ | tOSNR-XYZ | DE100 | MD100 | PSNRL100 |
| class A | FireEaterClip4000r1 | -17.3% | -6.2% | 77.4% | 6.4% | -0.7% | -21.6% | -15.2% | -7.2% |
|  | Market3Clip4000r2 | -2.2% | -0.2% | -0.7% | -1.0% | -1.3% | -13.4% | -89.0% | 0.0% |
|  | SunRise | -4.4% | 0.1% | -0.6% | -1.7% | -4.4% | -41.7% | -18.8% | -0.9% |
| class B | BikeSparklers cut 1 | -5.5% | -1.6% | 6.6% | -0.1% | -1.6% | -6.9% | -14.6% | -1.2% |
|  | BikeSparklers cut 2 | -5.2% | -1.3% | 8.2% | 0.2% | -0.8% | -4.6% | -4.8% | -0.7% |
|  | GarageExit | -6.2% | -1.9% | 2.1% | -1.8% | -1.6% | -2.4% | 5.6% | -2.0% |
| class C | ShowGirl2Teaser | -6.5% | -0.6% | 4.1% | -1.0% | -1.8% | -9.7% | -10.6% | -1.1% |
| class D | StEM\_MagicHour cut 1 | -8.9% | -0.6% | 5.8% | 0.4% | 0.0% | -12.9% | -10.5% | -0.8% |
|  | StEM\_MagicHour cut 2 | -5.3% | 0.2% | 2.3% | -0.2% | -0.4% | -7.1% | -12.2% | 0.0% |
|  | StEM\_MagicHour cut 3 | -5.4% | -0.5% | 7.9% | 2.6% | 2.9% | -3.2% | -2.9% | -0.6% |
|  | StEM\_WarmNight cut 1 | -6.9% | -0.2% | 7.7% | 1.3% | 0.7% | -17.1% | -5.4% | -0.3% |
|  | StEM\_WarmNight cut 2 | -11.2% | -1.6% | 29.3% | 8.8% | 9.4% | -15.5% | -36.4% | -1.1% |
| class G | BalloonFestival | -0.7% | 0.4% | 2.9% | 1.1% | 1.6% | 4.5% | -34.0% | -0.2% |
| class H | EBU\_04\_Hurdles | -6.0% | 0.5% | -0.4% | -1.6% | -2.7% | -18.3% | -1.6% | 0.9% |
|  | EBU\_06\_Start | -4.2% | 1.6% | -7.5% | -3.6% | -4.8% | -14.9% | -29.2% | 1.6% |
|  | **Overall** | -6.4% | -0.8% | 9.7% | 0.7% | -0.4% | -12.3% | -18.7% | -0.9% |

# Subjective quality comparisons

Subjective viewing was conducted by the cross-checkers on SIM2 display. All rates for all sequences were viewed in continuous playback mode. In terms of texture and color appearance, the cross-checkers observed comparable quality.

# References

1. F. Pu, T. Lu, P. Yin, T. Chen, W. Husak, “AHG13: ICTCP Compression Using HEVC Main 10”, JCTVC-X0050, May. 2016, Geneva, CH.
2. “Common Test Conditions for HDR/WCG video coding experiments”, JCTVC-W1020, March 2016.