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| *Title:* | **Cross Check for Intel's intra chroma prediction (JCTVC-H0295)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
| *Author(s) or Contact(s):* | Kei Kawamura Sei Naito  2-1-15, Ohara, Fujimino-shi, Saitama, JAPAN | Tel: Email: | +81 49 278 7411  ki-kawamura@kddi.com |
| *Source:* | KDDI Corp. (KDDI R&D Laboratories) | | |

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# Abstract

This contribution provides the cross-check results of the cross-channel prediction refinement technique to intra chroma prediction proposed by Intel.

# Introduction

This contribution provides the cross-check results of the cross-channel prediction refinement technique to intra chroma prediction proposed by Intel described in JCTVC-H0295 [1]. Two techniques are described; global fixed weighting prediction and mode-dependent weighting prediction. Later performance was tested in this contribution.

# Cross-check results

The software package obtained from the proponent was successfully compiled and tested under the common test conditions [2]. The mode-dependent weighting prediction case was tested with all intra condition. The BD-bitrate results match exactly to the data provided by the proponent, and the differences of ecn/dec time are within normal variations. Detailed results are shown in the attached excel sheets. Table 1 shows the summarized performance data.

It is noted YUV BD-bitrate assessment is added to the summary table because the gain is come from Cr improvement. A detail of YUV BD-bitrate is described in JCTVC-F386 [3].

Table 1 the performance of mode-dependent weighting prediction on HM 5.0 reference software for mandatory test

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | | **All Intra LC** | | | |
|  | Y | U | V | YUV | Y | U | V | YUV |
| Class A (8bit) | -0.3% | 0.1% | -4.1% | -0.6% | -0.1% | -0.4% | -3.5% | -0.4% |
| Class B | 0.0% | 0.2% | -2.9% | -0.2% | 0.3% | 0.1% | -1.6% | 0.1% |
| Class C | -0.5% | -1.3% | -3.6% | -0.9% | -0.7% | -1.5% | -4.5% | -1.1% |
| Class D | -0.5% | -1.3% | -3.8% | -0.9% | -0.7% | -1.4% | -4.8% | -1.1% |
| Class E | -0.2% | -0.3% | -2.7% | -0.4% | -0.2% | -0.7% | -2.6% | -0.5% |
| **Overall** | -0.3% | -0.6% | -3.4% | -0.6% | -0.3% | -0.8% | -3.3% | -0.6% |
|  | -0.3% | -0.6% | -3.3% | -0.6% | -0.3% | -0.8% | -3.3% | -0.6% |
| Class F | -0.5% | -1.4% | -2.4% | -0.8% | -0.7% | -1.0% | -4.0% | -1.1% |
| Enc Time[%] | 102% | | | | 102% | | | |
| Dec Time[%] | 102% | | | | 101% | | | |

# Conclusions

We have verified results reported in JCTVC-H0295. The BD-bitrate results match exactly to the data provided by the proponent, and the differences of ecn/dec time are within normal variations.

# References

1. Y.J. Chiu, Y. Han, L. Xu, W. Zhang, H. Jiang, "CE6.a: Cross-channel prediction refinement to improve intra chroma prediction," Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, Document: JCTVC-H0295, 8th Meeting: San José, CA, USA, 1–10 February, 2012.
2. F. Bossen, "Common test conditions and software reference configurations," Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, Document: JCTVC-G1200, 7th Meeting: Geneva, CH, 21-30 Nov, 2011.
3. T. K. Tan, F. Bossen, " Chroma RD cost computation in HM3.0," Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, 6th Meeting: Torino, 14-22 July, 2011.

# Patent rights declaration(s)

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