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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  5th Meeting: Geneva, 16-23 March, 2011 | Document: JCTVC-E464 |

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| *Title:* | **CE2: Cross-verification of Asymmetric Motion Partition with OBMC and Non-Square TU (JCTVC-E373)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
| *Author(s) or Contact(s):* | Liwei Guo,  Peisong Chen  Marta Karczewicz 5775 Morehouse Drive San Diego, CA 92121 USA | Tel: Email: | 1-858-651-8125 [liweig@qualcomm.com](mailto:liweig@qualcomm.com) |
| *Source:* | Qualcomm Incorporated | | |

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# Abstract

This contribution reoprts our cross-verification results of Asymmetric Motion Partitioning with OBMC and Non-Square TU (JCTVC-E376), a joint contribution from Tsinghua, Huawei &HiSilicon, Microsoft and USTC. Our results confirmed the RD data of (AMP+OBMC+Non-Square TU) reporeted in JCTVC-E376. Relative encoding and decoding time have slight deviation. Considering the difference of operating the environments, results are basically confirmed. Per proponents’ requests, this report also provides the results comparison between (AMP+OBMC) and (AMP+OBMC+Non-Square TU).

# Introduction

This contribution reoprts our cross-verification results of Asymmetric Motion Partitioning with OBMC and Non-Square TU (JCTVC-E376), a joint contribution from Tsinghua, Huawei &HiSilicon, Microsoft and USTC. The test condition are specified in JCTVC-D605.

# Experimental Results

Our encoding environment is using 64bit linux cluster with the same CPU type and decoding was done on sinlge 64 bit windows PC.

## Results of AMP+OBMC+Non-Square TU

Anchor: HM2.0

Tested: AMP+OBMC+Non-Square TU

The following is a summary and the detail results are in uploaded excel file: JCTVC-E464\_Cross\_verification\_E376\_1.xls

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BD-rate | **Random access** | | | **Random access LoCo** | | |
| Y | U | V | Y | U | V |
| Class A | -0.8 | -1.3 | -1.6 | -0.8 | -1.6 | -1.5 |
| Class B | -0.9 | -1.8 | -1.6 | -1.2 | -2.3 | -2.1 |
| Class C | -1.2 | -2.0 | -2.0 | -1.2 | -2.1 | -2.0 |
| Class D | -1.0 | -1.6 | -1.6 | -0.8 | -1.5 | -1.5 |
| Class E |  |  |  |  |  |  |
| All | -1.0 | -1.7 | -1.7 | -1.0 | -1.9 | -1.8 |
| Enc Time[%] | 112% | | | 108% | | |
| Dec Time[%] | 105% | | | 104% | | |
|  |  |  |  |  |  |  |
| BD-rate | **Low delay** | | | **Low delay LoCo** | | |
| Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -1.4 | -3.5 | -3.7 | -2.1 | -3.9 | -3.4 |
| Class C | -1.6 | -3.1 | -3.2 | -1.8 | -2.8 | -2.9 |
| Class D | -1.9 | -3.2 | -3.2 | -1.5 | -2.2 | -2.0 |
| Class E | -3.4 | -5.0 | -4.0 | -3.8 | -3.8 | -3.8 |
| All | -2.0 | -3.6 | -3.5 | -2.2 | -3.2 | -3.0 |
| Enc Time[%] | 110% | | | 107% | | |
| Dec Time[%] | 103% | | | 107% | | |

Table Cross-verification of AMP+OBMC+Non-Square TU vs HM 2.0

Our RD results perfectly match results reported in JCTVC-E376.

The encoding time and decoding time has minor difference, and this is probably due to different computing enviorments in the simulations.

## Results of AMP+OBMC+Non-Square TU vs AMP+OBMC

Requsted by the proponents, we also run simulation for the case of only (AMP+OBMC) and compare with (AMP+OBMC+Non-Square-TU)

Anchor: AMP+OBMC

Tested: AMP+OBMC+Non-Square TU

The following is a summary and the detail results are in uploaded excel file: JCTVC-E464\_Cross\_verification\_E376\_2.xls

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BD-rate | **Random access** | | | **Random access LoCo** | | |
| Y | U | V | Y | U | V |
| Class A | -0.1 | -0.4 | -0.3 | -0.2 | -0.6 | -0.6 |
| Class B | -0.2 | -0.8 | -0.5 | -0.5 | -1.3 | -1.2 |
| Class C | -0.2 | -0.7 | -0.5 | -0.4 | -0.7 | -0.7 |
| Class D | -0.2 | -0.4 | -0.5 | -0.3 | -0.5 | -0.5 |
| Class E |  |  |  |  |  |  |
| All | -0.1 | -0.5 | -0.4 | -0.3 | -0.8 | -0.8 |
| Enc Time[%] | 103% | | | 100% | | |
| Dec Time[%] | 97% | | | 99% | | |
|  |  |  |  |  |  |  |
| BD-rate | **Low delay** | | | **Low delay LoCo** | | |
| Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -0.4 | -2.2 | -2.1 | -1.4 | -2.9 | -2.8 |
| Class C | -0.5 | -1.6 | -1.7 | -1.1 | -1.9 | -1.7 |
| Class D | -0.5 | -2.1 | -1.6 | -0.8 | -1.3 | -1.0 |
| Class E | -1.0 | -2.5 | -2.4 | -1.9 | -2.0 | -2.3 |
| All | -0.6 | -2.1 | -1.9 | -1.3 | -2.1 | -2.0 |
| Enc Time[%] | 99% | | | 100% | | |
| Dec Time[%] | 101% | | | 102% | | |
|  |  | | |  | | |

Table Results of AMP+OBMC+Non-Square TU vs AMP+OBMC

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