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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  11th Meeting: Shanghai, CN, 10–19 Oct. 2012 | Document: JCTVC-K0333 |

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| --- | --- | --- | --- |
| *Title:* | **Cross-check of extended chroma mode for non 4:2:0 format (JCTVC-K0253)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This contribution reports the cross-check results of extended chroma mode for non 4:2:0 format in JCTVC-K0253. The proposal 2.1 is an identical proposal by JCTVC-K0190. The proposal 2.2 reduce parameter computation load.

# Introduction

An extended chroma mode for non 4:2:0 chroma format is presented in document JCTVC-K0253. The proposed method 2.1 is an extension of LM mode for non 4:2:0 chroma format. The proposed method 2.2 reduces the parameter computation load by using an one parameter for all TUs in each CU. It is noted that the proposal 2.1 is an identical proposal by the JCTVC-K0190. This contribution reports the cross-check results of these proposals.

The software version was HM8.0\_ahg7. The reference was generated by using the common test condition [1]. We complied provided software on 64-bit Windows XP environment and the experiments were performed on the cluster PCs.

Table Results of extended chroma mode by the proposal 2.1 for 4:2:2 all intra conditions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra Main** | | | **All Intra HE10** | | |
|  | Y | U | V | Y | U | V |
| Kimono | -2.5% | -3.4% | -2.8% | -2.8% | -4.1% | -3.5% |
| Parkscene | -3.3% | -6.3% | -3.4% | -3.6% | -6.9% | -3.5% |
| BirdsInCage | -2.6% | -3.2% | -7.7% | -3.0% | -3.8% | -9.4% |
| DucksAndLegs | -1.0% | -1.0% | -1.2% | -1.0% | -1.1% | -1.4% |
| Traffic | -1.2% | -2.1% | -3.0% | -1.3% | -2.2% | -3.7% |
| CrowdRun | -1.8% | -6.2% | -4.0% | -2.0% | -6.5% | -4.3% |
| OldTownCross | -1.7% | -4.4% | -2.9% | -1.9% | -4.9% | -3.1% |
| Seeking | -6.2% | -15.7% | -10.2% | -6.5% | -16.6% | -10.8% |
| **Overall** | -2.5% | -5.3% | -4.4% | -2.8% | -5.8% | -5.0% |
| Enc Time[%] | 105% | | | 105% | | |
| Dec Time[%] | 102% | | | 101% | | |

Table Results of extended chroma mode by the proposal 2.1 for 4:4:4 all intra conditions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra Main** | | | **All Intra HE10** | | |
|  | Y | U | V | Y | U | V |
| Kimono | -2.3% | -2.2% | -2.9% | -2.6% | -2.7% | -3.5% |
| Parkscene | -3.6% | -4.1% | -3.7% | -3.9% | -4.6% | -3.9% |
| BirdsInCage | -2.2% | -2.5% | -8.0% | -2.4% | -2.7% | -9.6% |
| DucksAndLegs | -1.1% | -1.0% | -1.5% | -1.2% | -1.1% | -1.6% |
| Traffic | -1.0% | -1.7% | -3.1% | -1.1% | -1.8% | -3.7% |
| CrowdRun | -2.5% | -5.6% | -4.7% | -2.6% | -5.9% | -5.2% |
| OldTownCross | -1.9% | -2.9% | -2.5% | -2.1% | -3.1% | -2.7% |
| Seeking | -8.1% | -12.5% | -9.5% | -8.5% | -13.4% | -10.3% |
| **Overall** | -2.8% | -4.1% | -4.5% | -3.1% | -4.4% | -5.1% |
| Enc Time[%] | 108% | | | 108% | | |
| Dec Time[%] | 99% | | | 101% | | |

Table Results of extended chroma mode by the proposal 2.2 for 4:2:2 all intra conditions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra Main** | | | **All Intra HE10** | | |
|  | Y | U | V | Y | U | V |
| Kimono | -0.1% | -0.3% | -0.3% | -0.1% | -0.3% | -0.3% |
| Parkscene | -0.1% | -0.4% | -0.3% | -0.1% | -0.4% | -0.3% |
| BirdsInCage | 0.0% | -0.1% | -0.3% | 0.0% | -0.1% | -0.4% |
| DucksAndLegs | -0.1% | -0.2% | -0.2% | -0.1% | -0.2% | -0.2% |
| Traffic | -0.1% | -0.1% | -0.2% | -0.1% | -0.2% | -0.3% |
| CrowdRun | 0.0% | -0.2% | -0.2% | 0.0% | -0.3% | -0.2% |
| OldTownCross | 0.0% | -0.2% | -0.1% | 0.0% | -0.3% | -0.3% |
| Seeking | -0.1% | -0.7% | -0.5% | -0.1% | -0.7% | -0.5% |
| **Overall** | -0.1% | -0.3% | -0.3% | -0.1% | -0.3% | -0.3% |
| Enc Time[%] | 99% | | | 99% | | |
| Dec Time[%] | 101% | | | 103% | | |

Table Results of extended chroma mode by the proposal 2.2 for 4:4:4 all intra conditions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra Main** | | | **All Intra HE10** | | |
|  | Y | U | V | Y | U | V |
| Kimono | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% |
| Parkscene | -0.1% | -0.1% | -0.1% | -0.1% | -0.2% | -0.2% |
| BirdsInCage | 0.0% | 0.0% | -0.1% | 0.0% | 0.0% | -0.2% |
| DucksAndLegs | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.2% |
| Traffic | 0.0% | 0.0% | -0.1% | 0.0% | 0.0% | -0.1% |
| CrowdRun | 0.3% | 0.4% | 0.3% | 0.2% | 0.4% | 0.3% |
| OldTownCross | -0.1% | 0.0% | 0.0% | -0.1% | 0.0% | -0.1% |
| Seeking | 0.0% | -0.1% | 0.0% | 0.0% | 0.0% | 0.0% |
| **Overall** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% |
| Enc Time[%] | 99% | | | 100% | | |
| Dec Time[%] | 103% | | | 103% | | |

Additional results of other conditions can be found in the attached excel sheets.

# Conclusions

We have verified results reported in JCTVC-K0253. The results of the cross-check matched with LGE’s report. The encoding/decoding time also matched closely to those reported by the proponent.

# References

1. D. Flynn, “BoG report: Extended chroma formats,” JCTVC-J0581, Stockholm, July 2012.