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| **Joint Collaborative Team on 3D Video Coding Extension Development**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  3rd Meeting: Geneva, CH, 17–23 Jan. 2013 | Document: JCT3V-C0088 |

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| *Title:* | **CE6.h Crosscheck of GIST's proposal on simplification of DMM3 (JCT3V-C0108)** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Proposal | | |
| *Author(s) or Contact(s):* | Hongbin Liu ([hongbin.liu@lge.com](mailto:hongbin.liu@lge.com))  Jiwook Jung ([jiwook.jung@lge.com](mailto:jiwook.jung@lge.com)) |  |  |
| *Source:* | LG Electronics | | |

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# Abstract

This contribution reports the crosscheck results on JCT2-C0108 proposed by GIST. Simulation is conducted under the common test condition (CTC) and all intra case. Both coding and synthesis results match with that provided by GIST (after GIST fix some typo errors). The source code is also reviewed, it is correctly implemented. It is also reported that GIST’s proposal reduces the decoding time by 0.4% and 1.8% in CTC case and all intra case respectively.

# Introduction

GIST’s proposal [1] is included in CE6.h. It proposes a simplification of depth modeling mode (DMM) 3. Instead of searching “best” Wedgelet pattern at decoder (and encoder); it proposes to derive the “best” Wedgelet pattern directly. Firstly, block’s Wedgelet orientation is derived by comparing absolute difference of the two corners in each side. The two sides with largest absolute differences decide the orientation. Secondly, points with largest changing value in the two sides are selected as starting point and ending point.

# Results

Simulation is conducted under the common test condition [2], and results are shown in Table 1 and Table 2.

Table 1: performance comparison with HTM-5.0.1 (CTC)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | video 0 | video 1 | video 2 | video only | synthesized only | coded & synthesized | enc time | dec time |
| Balloons | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 98.6% | 99.5% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 97.1% | 99.8% |
| Newspapercc | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100.1% | 99.7% |
| GhostTownFly | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 97.8% | 99.9% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 104.8% | 99.7% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 104.1% | 99.8% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 99.2% | 99.1% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 98.6% | 99.7% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 101.5% | 99.6% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **100.2%** | **99.6%** |

Table 2: performance comparison with HTM-5.0.1 (all intra)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | video 0 | video 1 | video 2 | video only | synthesized only | coded & synthesized | enc time | dec time |
| Balloons | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 95.0% | 99.1% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 95.2% | 99.0% |
| Newspapercc | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 96.7% | 99.5% |
| GhostTownFly | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.1% | 96.2% | 97.2% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 95.8% | 98.1% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 96.7% | 97.0% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 96.5% | 97.7% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 95.6% | 99.2% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 96.3% | 97.5% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.1%** | **0.0%** | **96.0%** | **98.2%** |

# Conclusion

Results from the cross verification match results that provided by the proponents. Meanwhile, the source code provided by the proponents also matches the description document.

# Reference

[1] Y. Song, Y. -S Ho, “3D-CE6.h: Results on simplified DMM mode 3”, Doc. JCT3V-C0108, Geneva, Switzerland, Jan. 2013.

[2] D. Rusanovskyy, K. Müller, A. Vetro, “Common Test Conditions of 3DV Core Experiments”, Doc. JCT3V-B1100, Shanghai, China, Oct. 2012.