|  |  |
| --- | --- |
| **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**  1st Meeting: Stockholm, SE, 16–20 July 2012 | Document: JCT2-A0094 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **Crosscheck report for JCT2-0098 3D-CE6.h related: Depth Modeling Mode (DMM) 3 simplification of Qualcomm** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Report | | |
| *Author(s) or Contact(s):* | Hongbin Liu Jie Jia |  | hongbin.liu@lge.com  jie.jia@lge.com |
| *Source:* | LG Electronics | | |

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

# Abstract

This contribution reports the crosscheck results on JCT2-A0098 proposed by Qualcomm. Simulation is conducted under the common test condition. Both coding and synthesis results match with that provided by Qualcomm. It is also reported that Qualcomm’s proposal reduce the decoding time by 2.6% when compared with HTM-3.1.

# Introduction

Qualcomm’s proposal [1] is related to CE6.h. It proposes a simplification of depth modeling mode (DMM) 3. It is reported that decoder may search up to around 1500 patterns for DMM mode 3 to derive the Wedgelet pattern, which is computationally complex. To reduce the complexity, it proposes to: 1. Disable DMM mode 3 when top-left 4x4 block in collocated texture luma block is not intra coded, 2. Only a small set rather than full set of Wedgelet patterns are searched.

The source code matches with the proposal. Coding and synthesis results match with that provided by Qualcomm, and detailed results are shown below.

# Results

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

Table 1: Results for 3-view test case

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | video 0 | video 1 | video 2 | video only | synthesized only | coded & synthesized | enc time | dec time |
| Balloons | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 103.5% | 98.7% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 104.1% | 97.8% |
| Newspapercc | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 94.3% | 95.0% |
| GhostTownFly | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 99.8% | 96.2% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100.0% | 99.6% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100.4% | 97.6% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | 100.3% | 97.3% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | 0.0% | 100.5% | 97.1% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100.1% | 97.7% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **100.3%** | **97.4%** |

Table 2: Results for 2-view test case

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | video 0 | video 1 |  | video only | synthesized only | coded & synthesized |
| Balloons | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| Kendo | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| Newspapercc | 0.0% | 0.0% |  | 0.0% | -0.2% | -0.1% |
| GhostTownFly | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| PoznanHall2 | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.1% |
| PoznanStreet | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| UndoDancer | 0.0% | 0.0% |  | 0.0% | 0.1% | 0.1% |
| 1024x768 | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| 1920x1088 | 0.0% | 0.0% |  | 0.0% | 0.0% | 0.0% |
| **average** | **0.0%** | **0.0%** |  | **0.0%** | **0.0%** | **0.0%** |

# Conclusion

In this contribution, the cross check results of Qualcomm’s proposal on simplification of DMM mode 3 are reported. It is confirmed that the results of both coding and synthesis results match with that provided by Qualcomm. It is also reported that Qualcomm’s proposal reduces the decoding time by 2.6%.

# Reference

1. JCT-A0098, “3D-CE6.h related: Depth Modeling Mode (DMM) 3 simplification for HTM”, X. Zhao, Y.Chen, L.Zhang, M. Karczewicz (Qualcomm), JCT2, Stockholm, SE, July 2012.
2. “Common test conditions for 3DV experimentation,” ISO/IEC JTC1/SC29/WG11 MPEG2011/N12745, Geneva, Switzerland, April 2012.