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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-C0102 |

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| *Title:* | **3D-CE6.h cross check on Related Improved Simplified Depth Coding of LGE (JCT3V-C0067)** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Report | | |
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| *Source:* | Samsung Electronics Co., Ltd. | | |

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# Introduction

The experimental result for LG’s Improved Simplified Depth Coding is reported. The BD-rate (and PSNR) results obtained from the cross-verification match those provided to us by LG.

# Test results

## Testing environment

Testing environment is described in below.

• Operating System

Linux Cluster

• Compiler

GCC 4.1.2 [64 bit]

## Testing result in sub-test 1(LGE\_SDC\_MODE\_EDGE)

**Table 1. Test results in common test conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.1% | -0.1% | 99.6% | 98.9% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | 0.0% | 102.8% | 101.2% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 99.7% | 105.1% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 98.0% | 98.7% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 101.2% | 99.0% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | 0.0% | 100.5% | 90.1% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 101.3% | 100.7% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 100.7% | 101.7% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 100.2% | 97.0% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.144%** | **-0.081%** | **100.4%** | **99.0%** |

**Table 2. Test results in all intra conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.1% | -0.1% | 99.2% | 100.3% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 97.8% | 93.7% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 100.5% | 106.8% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 98.9% | 98.6% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 98.8% | 102.3% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | 0.0% | 99.9% | 105.1% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 100.0% | 99.4% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 99.2% | 100.1% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 99.4% | 101.3% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.15%** | **-0.09%** | **99.3%** | **100.8%** |

## Testing result in sub-test 2(LGE\_CONCATENATE)

**Table 3. Test results in common test conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.2% | -0.2% | 98.7% | 97.5% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.3% | 100.8% | 97.6% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 98.3% | 96.9% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 97.8% | 98.3% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.2% | 100.3% | 100.4% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 99.6% | 91.0% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 100.8% | 98.4% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 99.2% | 97.3% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 99.6% | 97.0% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.175%** | **-0.156%** | **99.5%** | **97.1%** |

**Table 4. Test results in all intra conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.2% | -0.1% | 96.0% | 96.5% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.2% | 94.8% | 96.4% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 98.2% | 104.7% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 93.5% | 93.9% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 96.3% | 104.5% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 95.0% | 96.9% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 97.5% | 98.6% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 96.3% | 99.1% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 95.6% | 98.4% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.09%** | **-0.08%** | **95.9%** | **98.7%** |

## Testing result in sub-test 3(LGE\_SDC\_MODE\_EDGE +LGE\_CONCATENATE)

**Table 5. Test results in common test conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.3% | -0.2% | 99.8% | 107.3% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 100.5% | 101.0% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 100.2% | 101.6% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 96.7% | 99.1% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 101.2% | 98.3% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% | 99.3% | 89.8% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 97.6% | 99.1% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 100.2% | 103.3% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.2% | 98.7% | 96.5% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.283%** | **-0.211%** | **99.3%** | **99.4%** |

**Table 4. Test results in all intra conditions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | -0.2% | -0.2% | 97.7% | 102.0% |
| Kendo | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 95.0% | 95.4% |
| Newspaper | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.2% | 95.6% | 101.3% |
| GT\_Fly | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.1% | 95.1% | 100.6% |
| PoznanHall2 | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 92.6% | 94.5% |
| PoznanStreet | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | 0.0% | 96.7% | 102.7% |
| UndoDancer | 0.0% | 0.0% | 0.0% | 0.0% | -0.4% | -0.3% | 96.1% | 96.7% |
| 1024x768 | 0.0% | 0.0% | 0.0% | 0.0% | -0.3% | -0.2% | 96.1% | 99.5% |
| 1920x1088 | 0.0% | 0.0% | 0.0% | 0.0% | -0.2% | -0.2% | 95.1% | 98.6% |
| **average** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **-0.24%** | **-0.17%** | **95.5%** | **99.0%** |

# Conclusion

The BD-rate (and PSNR) results obtained from the cross-verification match those provided by LG. Encoding and decoding time differences are similar enough to be considered a match.