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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-C0159 |

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| *Title:* | **3D-CE6.h: Cross check of Simplification of Simplified Depth Coding (JCT3V-C0143)** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Information | | |
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# Abstract

This contribution provides a cross verification of a simplification of the simplified depth coding (SDC) tool proposed in JCT3V-C0143 [1], as part of CE6.h on depth intra coding. The simplification of SDC has been evaluated both against the CTC [2] and the all-intra configuration of CE6. HTM5.0.1 has been used as the anchor and starting point for the software modifications.

The RD results show a perfect match with the tests conducted by the proponents. The encoding and decoding times are in line with the proponents results.

# Encoding and decoding

Cluster computer with 54 computing nodes (IBM iDataPlex dx360M2), each of which contains:

* CPU: dual-socket quad-core Intel Xeon L5520 (Intel Nehalem microarchitecture, 2.27 GHz, 8 MB L3 cache per quad-core chip), thus 8 cores / node
* memory: 12 GB RAM (DDR3 PC3-8500S 1067 MHz)
* storage (local): one 156 GB 3.5" 15k RPM SAS disk

The encoder executables were generated with g++ 4.1.2.

# Simulation Results

The simulations were performed according the common test conditions [2]. For the All-Intra coding scenario, configuration files from Core Experiment 6 on Depth Map Intra Coding Tools were used.

## Random Access Coding Configuration (CTC)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | 101,1% | 100,8% |
| Kendo | 0,0% | 0,0% | 0,0% | 0,0% | -0,4% | -0,4% | 93,1% | 97,6% |
| Newspapercc | 0,0% | 0,0% | 0,0% | 0,0% | -0,1% | -0,1% | 96,3% | 97,3% |
| GhostTownFly | 0,0% | 0,0% | 0,0% | 0,0% | -0,1% | -0,1% | 94,8% | 100,0% |
| PoznanHall2 | 0,0% | 0,0% | 0,0% | 0,0% | -0,1% | -0,1% | 97,5% | 101,5% |
| PoznanStreet | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 101,4% | 97,7% |
| UndoDancer | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 96,2% | 94,5% |
| 1024x768 | 0,0% | 0,0% | 0,0% | 0,0% | -0,2% | -0,2% | 96,8% | 98,6% |
| 1920x1088 | 0,0% | 0,0% | 0,0% | 0,0% | -0,1% | 0,0% | 97,5% | 98,4% |
| **average** | **0,0%** | **0,0%** | **0,0%** | **0,0%** | **-0,1%** | **-0,1%** | **97,2%** | **98,5%** |

## All-Intra Coding Configuration (AI)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 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% | 86,0% | 101,3% |
| Kendo | 0,0% | 0,0% | 0,0% | 0,0% | 0,2% | 0,2% | 84,0% | 101,5% |
| Newspapercc | 0,0% | 0,0% | 0,0% | 0,0% | 0,1% | 0,1% | 81,0% | 101,1% |
| GhostTownFly | 0,0% | 0,0% | 0,0% | 0,0% | 0,2% | 0,2% | 86,2% | 101,8% |
| PoznanHall2 | 0,0% | 0,0% | 0,0% | 0,0% | 0,2% | 0,2% | 82,7% | 97,8% |
| PoznanStreet | 0,0% | 0,0% | 0,0% | 0,0% | 0,1% | 0,1% | 84,0% | 100,1% |
| UndoDancer | 0,0% | 0,0% | 0,0% | 0,0% | 0,1% | 0,1% | 82,3% | 99,3% |
| 1024x768 | 0,0% | 0,0% | 0,0% | 0,0% | 0,2% | 0,1% | 83,6% | 101,3% |
| 1920x1088 | 0,0% | 0,0% | 0,0% | 0,0% | 0,2% | 0,2% | 83,8% | 99,7% |
| **average** | **0,0%** | **0,0%** | **0,0%** | **0,0%** | **0,2%** | **0,2%** | **83,7%** | **100,4%** |

# References

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| [1] | Fabian Jäger, "3D-CE6: Simplification of Simplified Depth Coding," Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T VCEG and ISO/IEC MPEG, Geneva, Switzerland, Doc. JCT3V-C0143, 2013. |
| [2] | Heiko Schwarz and Dmytro Rusanovskyy, "Common Test Conditions of 3DV Core Experiments," Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T VCEG and ISO/IEC MPEG, Shanghai, China, Doc. JCT3V-B0132, 2012. |
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