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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  9th Meeting: Geneva, CH, 27 April – 7 May 2012 | Document: JCTVC-H0164 |

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| *Title:* | **Cross-check report of virtual large transform unit over maximum transform size with zero CBF by LGE (JCTVC-I0150)** | | |
| *Status:* | Input Document to the JCT-VC | | |
| *Purpose:* | Cross-verification | | |
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# Abstract

This is a cross verification of contribution for virtual large transform unit over maximum transform size with zero CBF by LGE and was based on HM-6.0. We compiled, inspected, and ran the code with Low delay, and Random access for high efficiency configurations. RD results were identical to those provided by Qualcomm and LGE.

# Test conditions

Our computing platform used for cross-verification tests is a clustering system with 16 computing nodes, each of which contains:

* CPU: dual-socket quad-core Intel Xeon 2.5 GHz
* memory: 32 GB RAM
* storage (local): one 146 GB 2.5" 10k RPM SAS disk

The encoder and decoder executables were generated with g++ 4.1.2.

# Simulation results

The virtual large transform unit over maximum transform size was evaluated in JCTVC-H1100. The coding gains for the contribution are summarized as following:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra Main** | | | **All Intra HE10** | | |
|  | Y | U | V | Y | U | V |
| Class A | 0.1% | -0.8% | -1.0% | 0.1% | -0.7% | -1.5% |
| Class B | 0.1% | -0.2% | -0.4% | 0.1% | -0.3% | -0.5% |
| Class C | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class D | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class E | 0.1% | -1.4% | -1.8% | 0.2% | -1.8% | -2.2% |
| **Overall** | **0.1%** | **-0.4%** | **-0.6%** | **0.1%** | **-0.5%** | **-0.8%** |
|  | 0.1% | -0.4% | -0.6% | 0.1% | -0.5% | -0.8% |
| Class F | 0.0% | -0.4% | -0.5% | 0.1% | -0.6% | -0.9% |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Random Access Main** | | | **Random Access HE10** | | |
|  | Y | U | V | Y | U | V |
| Class A | 0.1% | -1.1% | -1.1% | 0.1% | -1.0% | -0.8% |
| Class B | 0.1% | -0.8% | -0.6% | 0.1% | -0.7% | -0.8% |
| Class C | 0.0% | -0.3% | -0.2% | 0.0% | -0.3% | -0.2% |
| Class D | 0.0% | -0.1% | 0.0% | 0.0% | 0.1% | 0.1% |
| Class E |  |  |  |  |  |  |
| **Overall** | **0.1%** | **-0.6%** | **-0.5%** | **0.1%** | **-0.5%** | **-0.5%** |
|  | 0.0% | -0.6% | -0.5% | 0.1% | -0.5% | -0.4% |
| Class F | 0.1% | -0.4% | -0.2% | 0.1% | -0.5% | -0.7% |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Low delay B Main** | | | **Low delay B HE10** | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | 0.1% | -0.9% | -1.0% | 0.1% | -1.3% | -1.7% |
| Class C | 0.0% | -0.6% | -0.6% | 0.0% | -0.4% | -0.6% |
| Class D | 0.0% | -0.3% | -0.3% | 0.0% | 0.1% | 0.1% |
| Class E | 0.1% | -1.0% | -2.6% | 0.1% | -2.2% | -1.5% |
| **Overall** | **0.1%** | **-0.7%** | **-0.9%** | **0.1%** | **-0.9%** | **-1.0%** |
|  | 0.1% | -0.6% | -0.9% | 0.1% | -0.9% | -1.0% |
| Class F | 0.1% | -0.4% | -1.2% | 0.1% | -1.7% | -0.4% |

The measurement of the time is not accurate because the simulation is done in a cluster environment.

# Conclusion

The code and results are verified and are conformant to the results stated LGE