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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  7th Meeting: Geneva, 21-30 November, 2011 | Document: JCTVC-G790 |

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| *Title:* | **CE6.d: Cross-check report for JCTVC-G280 and JCTVC-G565 for Intra Prediction with Secondary Boundary** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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| *Source:* | HiSilicon | | |

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# Abstract

This contribution document reports the cross verification results of CE6.d Intra Prediction with Secondary Boundary. The source code was implemented based on HM-4.0. We compiled, inspected, and ran the code of these cases with Intra HE and Intra LC configurations. The cross-check has been completed successfully and the results match those provided by proponents of JCTVC-G280 and JCTVC-G565.

# Test description and simulation results

Totally 6 tests were crosschecked in this document, the first test is the F456 described in JCTVC-G565, which is also named as test7 in Table 2 of JCTVC-G565. The other tests were combinations of methods in JCTVC-G565, which named from test9 to test13, the results of test13 is also reported in JCTVC-G280.

In these tests, the encoder and decoder reconstructed YUV files match. All of the results match those provided by proponents of JCTVC-G280 and JCTVC-G565. The decoding time and encoding time change are very similar with those of proponent’s and the difference is neglectable by considering of the different running machines. The Table 1 to Table 7 are the results of test7, test9 to test 13 respectively.

Table 1 Results of test 7 in JCTVC-G565

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.4% |
| Class B | -0.2% | -0.2% | -0.1% | -0.2% | -0.2% | -0.2% |
| Class C | -0.2% | -0.2% | -0.2% | -0.2% | -0.3% | -0.2% |
| Class D | -0.3% | -0.2% | -0.3% | -0.3% | -0.3% | -0.3% |
| Class E | -0.3% | -0.3% | -0.3% | -0.2% | -0.3% | -0.3% |
| **Overall** | -0.26% | -0.23% | -0.23% | -0.24% | -0.28% | -0.27% |
|  | -0.26% | -0.23% | -0.24% | -0.24% | -0.28% | -0.28% |
| Enc Time[%] | 99% | | | 100% | | |
| Dec Time[%] | 98% | | | 98% | | |

Table 2 Results of test 9 in JCTVC-G565

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.7% | -0.7% | -0.6% | -0.6% | -0.8% | -0.9% |
| Class B | -0.4% | -0.4% | -0.4% | -0.3% | -0.6% | -0.6% |
| Class C | -0.4% | -0.4% | -0.4% | -0.4% | -0.5% | -0.5% |
| Class D | -0.5% | -0.4% | -0.5% | -0.5% | -0.5% | -0.5% |
| Class E | -0.6% | -0.5% | -0.5% | -0.5% | -0.7% | -0.7% |
| **Overall** | -0.50% | -0.48% | -0.50% | -0.45% | -0.62% | -0.63% |
|  | -0.51% | -0.49% | -0.50% | -0.46% | -0.62% | -0.63% |
| Enc Time[%] | 101% | | | 101% | | |
| Dec Time[%] | 101% | | | 102% | | |

Table 3 Results of test 10 in JCTVC-G565

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.7% | -0.6% | -0.6% | -0.5% | -0.7% | -0.8% |
| Class B | -0.5% | -0.4% | -0.4% | -0.4% | -0.6% | -0.6% |
| Class C | -0.6% | -0.5% | -0.5% | -0.6% | -0.7% | -0.6% |
| Class D | -0.6% | -0.5% | -0.6% | -0.6% | -0.6% | -0.6% |
| Class E | -0.6% | -0.4% | -0.5% | -0.6% | -0.7% | -0.6% |
| **Overall** | -0.57% | -0.49% | -0.52% | -0.54% | -0.63% | -0.63% |
|  | -0.57% | -0.50% | -0.53% | -0.54% | -0.63% | -0.64% |
| Enc Time[%] | 100% | | | 102% | | |
| Dec Time[%] | 101% | | | 102% | | |

Table 4 Results of test 11 in JCTVC-G565

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.7% | -0.6% | -0.6% | -0.6% | -0.7% | -0.8% |
| Class B | -0.5% | -0.5% | -0.5% | -0.4% | -0.6% | -0.6% |
| Class C | -0.5% | -0.5% | -0.5% | -0.5% | -0.6% | -0.6% |
| Class D | -0.5% | -0.5% | -0.6% | -0.6% | -0.6% | -0.6% |
| Class E | -0.6% | -0.6% | -0.7% | -0.6% | -0.7% | -0.8% |
| **Overall** | -0.58% | -0.55% | -0.56% | -0.52% | -0.64% | -0.66% |
|  | -0.58% | -0.55% | -0.57% | -0.52% | -0.65% | -0.67% |
| Enc Time[%] | 102% | | | 103% | | |
| Dec Time[%] | 102% | | | 102% | | |

Table 5 Results of test 12 in JCTVC-G565

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.9% | -0.8% | -0.9% | -0.8% | -1.0% | -1.1% |
| Class B | -0.7% | -0.7% | -0.6% | -0.6% | -0.8% | -0.8% |
| Class C | -0.6% | -0.7% | -0.7% | -0.7% | -0.8% | -0.7% |
| Class D | -0.6% | -0.7% | -0.7% | -0.7% | -0.7% | -0.7% |
| Class E | -0.8% | -0.8% | -1.0% | -0.8% | -0.9% | -0.9% |
| **Overall** | -0.75% | -0.71% | -0.74% | -0.71% | -0.82% | -0.86% |
|  | -0.75% | -0.72% | -0.75% | -0.71% | -0.82% | -0.86% |
| Enc Time[%] | 101% | | | 102% | | |
| Dec Time[%] | 100% | | | 98% | | |

Table 6 Results of test 13 in JCTVC-G565 and JCTVC-G280

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.9% | -0.8% | -0.9% | -0.8% | -1.0% | -1.1% |
| Class B | -0.6% | -0.6% | -0.6% | -0.6% | -0.8% | -0.8% |
| Class C | -0.6% | -0.6% | -0.7% | -0.7% | -0.8% | -0.7% |
| Class D | -0.7% | -0.6% | -0.7% | -0.7% | -0.7% | -0.7% |
| Class E | -0.8% | -0.7% | -0.9% | -0.7% | -0.9% | -0.9% |
| **Overall** | -0.72% | -0.68% | -0.71% | -0.70% | -0.82% | -0.85% |
|  | -0.73% | -0.69% | -0.71% | -0.70% | -0.82% | -0.85% |
| Enc Time[%] | 102% | | | 103% | | |
| Dec Time[%] | 102% | | | 103% | | |