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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-G804 |

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| *Title:* | **Non-CE6.c: Cross-check report for JCTVC-G354 on Improvements for SDIP** | | |
| *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 Non-CE6.c JCTVC-G354 on Improvements for SDIP. The source code was implemented based on HM-4.0-SDIP released in CE6.c. We compiled, inspected, and ran the code of these cases with Intra HE or Intra LC configurations. The cross-check has been completed successfully and the results match those provided by proponents of JCTVC-G354.

# Test description and simulation results

Three test cases were crosschecked by setting the different Macros as provided by proponents. The first test is the MPMs in intra mode coding for non-square CU. The second test reported in JCTVC-G354 is the redefinition of contexts for significance map of non-square TU. The combination of these two methods is also crosschecked in this document in the third test.

The encoder and decoder reconstructed YUV files match. These three experimental results are illustrated in Table 1, Table 2 and Table 3 respectively, the anchor is HM4.0-SDIP case1 configuration. These results match the BD-rate results provided by proponents of JCTVC-G354. There is no obvious encoding or decoding time increase by considering the difference of running machines.

Table 1 Results of MPMS in intra mode coding of SDIP

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | 0.0% | 0.1% | 0.0% | -0.1% | 0.0% | 0.0% |
| Class B | 0.0% | 0.1% | 0.1% | -0.1% | 0.1% | 0.1% |
| Class C | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% |
| Class D | -0.1% | 0.1% | 0.1% | -0.1% | 0.1% | 0.1% |
| Class E | 0.0% | 0.1% | 0.2% | -0.1% | 0.1% | 0.3% |
| **Overall** | -0.03% | 0.08% | 0.07% | -0.09% | 0.09% | 0.09% |
|  | -0.03% | 0.07% | 0.07% | -0.09% | 0.08% | 0.08% |
| Enc Time[%] | 102% | | | 102% | | |
| Dec Time[%] | 100% | | | 100% | | |

Table 2 Results of Significance map contexts for SDIP

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.2% | -0.3% | -0.4% | #VALUE! | #VALUE! | #VALUE! |
| Class B | -0.1% | -0.2% | -0.3% | #VALUE! | #VALUE! | #VALUE! |
| Class C | -0.1% | -0.2% | -0.2% | #VALUE! | #VALUE! | #VALUE! |
| Class D | 0.0% | -0.1% | -0.1% | #VALUE! | #VALUE! | #VALUE! |
| Class E | -0.1% | -0.4% | -0.4% | #VALUE! | #VALUE! | #VALUE! |
| **Overall** | -0.10% | -0.23% | -0.27% | #VALUE! | #VALUE! | #VALUE! |
|  | -0.09% | -0.22% | -0.26% | #VALUE! | #VALUE! | #VALUE! |
| Enc Time[%] | 102% | | | #NUM! | | |
| Dec Time[%] | 101% | | | #NUM! | | |

Table 2 Results of combination of Significance map contexts and MPM for SDIP

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | -0.2% | -0.2% | -0.3% | #VALUE! | #VALUE! | #VALUE! |
| Class B | -0.1% | -0.1% | -0.2% | #VALUE! | #VALUE! | #VALUE! |
| Class C | -0.1% | -0.1% | -0.1% | #VALUE! | #VALUE! | #VALUE! |
| Class D | -0.1% | 0.0% | -0.1% | #VALUE! | #VALUE! | #VALUE! |
| Class E | -0.1% | -0.3% | -0.2% | #VALUE! | #VALUE! | #VALUE! |
| **Overall** | -0.14% | -0.14% | -0.20% | #VALUE! | #VALUE! | #VALUE! |
|  | -0.14% | -0.15% | -0.21% | #VALUE! | #VALUE! | #VALUE! |
| Enc Time[%] | 103% | | | #NUM! | | |
| Dec Time[%] | 101% | | | #NUM! | | |