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| *Title:* | **CE6.b SDIP Harmonization: Cross Check Results for Test 5 on MDIS and Test 7 on Deblocking (JCTVC-F532)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This document contains cross check results for CE6.b on the harmonization of SDIP with the MDIS tool (Test 5: cases 1, 2) and the HM3 deblocking filter (Test 7: cases 1, 2). The BD-rate results match the results reported in JCTVC-F532. Encoding and decoding times are similar.

# Cross Check Results for CE6.b Test 5 on MDIS

The following two cases from Test 5 of CE6.b [1] are cross checked:

1. HM3 anchor (rev823) versus HM3 with MDIS tool turned off (QC\_MDIS=0)
2. HM3-SDIP (rev866) versus HM3-SDIP with MDIS turned off (QC\_MDIS=0)

The BD-rate results are enumerated in Table 1 for case 1 and in Table 2 for case 2. These results match the BD-rate results in JCTVC-F532. The encoding time differences are within the execution time variability of the computing cluster. The decoding times are measured on a single CPU and are similar.

Table CE6.b Test 5 results for case 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | 0.4 | 0.4 | 0.7 | 0.6 | 0.5 | 0.7 |
| Class B | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 |
| Class C | -0.1 | 0.0 | 0.0 | -0.3 | -0.1 | -0.2 |
| Class D | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 |
| Class E | 0.3 | 0.5 | 0.5 | 0.6 | 0.5 | 0.4 |
| **Overall** | **0.2** | **0.2** | **0.3** | **0.2** | **0.2** | **0.2** |
| Enc Time[%] | 95% | | | 96% | | |
| Dec Time[%] | 99% | | | 98% | | |

Table CE6.b Test 5 results for case 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | 0.4 | 0.2 | 0.5 | 0.5 | 0.2 | 0.5 |
| Class B | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| Class C | 0.0 | 0.1 | 0.1 | -0.1 | 0.1 | 0.0 |
| Class D | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Class E | 0.4 | 0.4 | 0.3 | 0.6 | 0.4 | 0.4 |
| **Overall** | **0.2** | **0.2** | **0.3** | **0.3** | **0.2** | **0.2** |
| Enc Time[%] | 100% | | | 100% | | |
| Dec Time[%] | 99% | | | 97% | | |

# Cross Check Results for CE6.b Test 7 on Deblocking

The following two cases from Test 7 [1] are cross checked:

1. HM3 anchor (rev823) versus HM3 with deblocking filter disabled (LoopFilterDisable : 1)
2. HM3-SDIP (rev866) versus HM3-SDIP with HM3 deblocking disabled (LoopFilterDisable : 1)

Table 3 enumerates the BD-rate results for case 1 and Table 4 for case 2. Both cases match the results in JCTVC-F532. The encoding and decoding times are similar.

Table CE6.b Test 7 results for case 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | -2.1 | 0.2 | 0.3 | 0.9 | 2.2 | 2.4 |
| Class B | -1.3 | 0.3 | 0.9 | 0.9 | 3.5 | 4.5 |
| Class C | -0.8 | 0.1 | 0.3 | 0.0 | 2.9 | 3.6 |
| Class D | -0.6 | 0.3 | 0.4 | -0.2 | 3.1 | 3.8 |
| Class E | -0.7 | 1.3 | 1.5 | 1.4 | 7.1 | 7.5 |
| **Overall** | **-1.1** | **0.4** | **0.6** | **0.6** | **3.6** | **4.2** |
| Enc Time[%] | 104% | | | 98% | | |
| Dec Time[%] | 95% | | | 86% | | |

Table CE6.b Test 7 results for case 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | -2.0 | 0.3 | 0.4 | 0.9 | 2.3 | 2.5 |
| Class B | -1.2 | 0.4 | 1.0 | 1.0 | 3.5 | 4.5 |
| Class C | -0.7 | 0.2 | 0.4 | 0.1 | 3.0 | 3.7 |
| Class D | -0.6 | 0.4 | 0.5 | 0.0 | 3.2 | 3.9 |
| Class E | -0.6 | 1.4 | 1.6 | 1.5 | 7.1 | 7.5 |
| **Overall** | **-1.1** | **0.5** | **0.8** | **0.7** | **3.6** | **4.3** |
| Enc Time[%] | 104% | | | 100% | | |
| Dec Time[%] | 95% | | | 88% | | |

# Conclusion

The BD-rate results from this cross check of CE6.b Test 5 (cases 1, 2) and 7 (cases 1, 2) match the results in JCTVC-F532. The encoding and decoding times are similar.

# References

1. A. Tabatabai, M. Budagavi, K. Chono, J. Rajan, A. Segall, H. Yu, “Core Experiment 6: Intra Prediction Improvement,” 5th JCT-VC Meeting, Geneva, CH, March 2011, Doc. JCTVC-E706r2