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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  6th Meeting: Torino, 14-22 July, 2011 | Document: JCTVC-F580 |

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| *Title:* | **CE12: Cross Check of Panasonic’s Deblocking Decisions (JCTVC-F191)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This document contains cross check results for Panasonic’s proposal on deblocking decisions (JCTVC-F191). The BD-rate results match, encoding and decoding results are similar.

# Objective Cross Check Results

The following experiments have been cross checked:

* Configuration 1:

#define PANASONIC\_INDIVIDUAL\_DECISIONS 1

#define PANASONIC\_SECOND\_DERIVATION\_AT\_BORDER 0

* Configuration 2:

#define PANASONIC\_INDIVIDUAL\_DECISIONS 1

#define PANASONIC\_SECOND\_DERIVATION\_AT\_BORDER 1

Table 1 and Table 2 enumerate the BD-rate results and execution times for the two configurations compared to the HM3.0 anchor. The BD-rate results match those reported by the proponent in JCTVC-F191.

The encoding times are comparable to those reported in JCTVC-F191, when the variability of the computing cluster is taken into consideration. The decoding times are measured on a single CPU and they are similar to JCTVC-F191 decoding times.

Table BD-rate results and execution timings for configuration 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | -0.2 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class B | -0.1 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class C | -0.1 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class D | -0.1 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class E | -0.2 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| **Overall** | **-0.1** | **0.0** | **0.0** | **-0.1** | **0.0** | **0.0** |
| Enc Time[%] | 98% | | | 96% | | |
| Dec Time[%] | 101% | | | 101% | | |
|  |  |  |  |  |  |  |
|  | Random Access HE | | | Random Access LC | | |
| Y | U | V | Y | U | V |
| Class A | -0.3 | -0.2 | -0.2 | -0.2 | 0.0 | 0.2 |
| Class B | -0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Class C | -0.2 | 0.0 | 0.0 | -0.2 | 0.0 | 0.0 |
| Class D | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 | 0.0 |
| Class E |  |  |  |  |  |  |
| **Overall** | **-0.2** | **-0.1** | **-0.1** | **-0.2** | **0.0** | **0.0** |
| Enc Time[%] | 98% | | | 97% | | |
| Dec Time[%] | 100% | | | 100% | | |
|  |  |  |  |  |  |  |
|  | Low delay B HE | | | Low delay B LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -0.3 | 0.1 | 0.1 | -0.3 | -0.1 | -0.4 |
| Class C | -0.3 | -0.2 | -0.2 | -0.3 | 0.0 | -0.4 |
| Class D | -0.2 | 0.1 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class E | -0.5 | -0.2 | -0.1 | -0.5 | -0.3 | 0.0 |
| **Overall** | **-0.3** | **0.0** | **0.0** | **-0.3** | **-0.1** | **-0.2** |
| Enc Time[%] | 98% | | | 96% | | |
| Dec Time[%] | 101% | | | 99% | | |
|  |  |  |  |  |  |  |
|  | Low delay P HE | | | Low delay P LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -0.3 | 0.1 | -0.2 | -0.2 | 0.0 | 0.2 |
| Class C | -0.2 | 0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Class D | -0.2 | -0.1 | -0.5 | -0.1 | -0.3 | 0.0 |
| Class E | -0.6 | 0.0 | -0.2 | -0.2 | -0.4 | -0.6 |
| **Overall** | **-0.3** | **0.0** | **-0.2** | **-0.2** | **-0.2** | **0.0** |
| Enc Time[%] | 103% | | | 102% | | |
| Dec Time[%] | 100% | | | 99% | | |

Table BD-rate results and execution timings for configuration 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | -0.5 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| Class B | -0.4 | 0.0 | 0.0 | -0.2 | 0.0 | 0.0 |
| Class C | -0.4 | 0.0 | 0.0 | -0.3 | 0.0 | 0.0 |
| Class D | -0.3 | 0.0 | 0.0 | -0.2 | 0.0 | 0.0 |
| Class E | -0.5 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 |
| **Overall** | **-0.4** | **0.0** | **0.0** | **-0.2** | **0.0** | **0.0** |
| Enc Time[%] | 96% | | | 97% | | |
| Dec Time[%] | 101% | | | 101% | | |
|  |  |  |  |  |  |  |
|  | Random Access HE | | | Random Access LC | | |
| Y | U | V | Y | U | V |
| Class A | -0.8 | -0.3 | -0.5 | -0.2 | 0.0 | 0.1 |
| Class B | -0.6 | -0.1 | -0.1 | -0.4 | 0.0 | 0.0 |
| Class C | -0.4 | 0.1 | 0.0 | -0.3 | -0.1 | 0.0 |
| Class D | -0.3 | 0.0 | -0.1 | -0.2 | 0.0 | 0.0 |
| Class E |  |  |  |  |  |  |
| **Overall** | **-0.5** | **-0.1** | **-0.2** | **-0.3** | **0.0** | **0.0** |
| Enc Time[%] | 97% | | | 95% | | |
| Dec Time[%] | 100% | | | 100% | | |
|  |  |  |  |  |  |  |
|  | Low delay B HE | | | Low delay B LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -1.1 | 0.0 | -0.2 | -0.6 | -0.2 | -0.4 |
| Class C | -0.7 | 0.1 | 0.0 | -0.4 | 0.1 | -0.1 |
| Class D | -0.5 | -0.3 | -0.1 | -0.4 | 0.2 | -0.1 |
| Class E | -2.1 | -0.2 | -0.8 | -1.0 | 0.0 | -0.9 |
| **Overall** | **-1.0** | **-0.1** | **-0.2** | **-0.6** | **0.0** | **-0.4** |
| Enc Time[%] | 96% | | | 96% | | |
| Dec Time[%] | 101% | | | 100% | | |
|  |  |  |  |  |  |  |
|  | Low delay P HE | | | Low delay P LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -0.9 | 0.0 | -0.6 | -0.2 | 0.0 | 0.0 |
| Class C | -0.6 | 0.1 | 0.0 | -0.2 | 0.1 | 0.0 |
| Class D | -0.3 | -0.2 | 0.0 | -0.2 | 0.3 | -0.1 |
| Class E | -2.0 | -0.4 | -0.4 | -0.3 | 0.1 | -0.2 |
| **Overall** | **-0.9** | **-0.1** | **-0.2** | **-0.2** | **0.1** | **-0.1** |
| Enc Time[%] | 102% | | | 100% | | |
| Dec Time[%] | 100% | | | 100% | | |

# Conclusion

The BD-rate results and execution times match those reported in JCTVC-F191.