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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-F774 |

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| *Title:* | **Cross Check of Panasonic’s Proposal JCTVC-F405** | | |
| *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 filter using adaptive weighting factors (JCTVC-F405). The BD-rate results match, encoding times are similar. Required memory is increased.

# Results

In JCTVC-405, adaptive weighting factors are introduced into the deblocking filter. Each weighting factor weights the value, by which the HM3.0 deblocking filter would modify a sample value. The weighting factors are estimated at the encoder side by minimization of the mean squared error between the deblocked signal and the original input signal.

The table enumerates the BD-rate results, which match those from JCTVC-F405. The encoding times are quite similar, because of execution times variations in the computing environment.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | All Intra HE | | | All Intra LC | | |
| Y | U | V | Y | U | V |
| Class A | -2.4 | -1.7 | -1.2 | -1.6 | -1.7 | -1.4 |
| Class B | -1.9 | -1.3 | -1.1 | -1.4 | -1.5 | -1.1 |
| Class C | -1.3 | -1.4 | -1.4 | -1.1 | -1.5 | -1.5 |
| Class D | -1.0 | -0.9 | -0.9 | -0.9 | -1.0 | -0.9 |
| Class E | -1.6 | -0.9 | -0.9 | -1.1 | -0.6 | -0.8 |
| **Overall** | **-1.6** | **-1.3** | **-1.1** | **-1.2** | **-1.3** | **-1.2** |
| Enc Time[%] | 96% | | | 99% | | |
| Dec Time[%] |  | | |  | | |
|  |  |  |  |  |  |  |
|  | Random Access HE | | | Random Access LC | | |
| Y | U | V | Y | U | V |
| Class A | -1.7 | -1.5 | -1.4 | -1.2 | -1.6 | -1.4 |
| Class B | -1.4 | -1.3 | -1.1 | -1.1 | -1.2 | -0.9 |
| Class C | -0.9 | -1.0 | -1.1 | -0.7 | -1.2 | -1.2 |
| Class D | -0.5 | -0.8 | -0.8 | -0.5 | -0.8 | -0.6 |
| Class E |  |  |  |  |  |  |
| **Overall** | **-1.2** | **-1.2** | **-1.1** | **-0.9** | **-1.2** | **-1.0** |
| Enc Time[%] | 96% | | | 97% | | |
| Dec Time[%] |  | | |  | | |
|  |  |  |  |  |  |  |
|  | Low delay B HE | | | Low delay B LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -1.4 | -0.2 | 0.1 | -0.9 | -0.3 | -0.3 |
| Class C | -0.7 | -0.3 | -0.1 | -0.4 | 0.1 | 0.0 |
| Class D | -0.5 | 0.4 | 0.3 | -0.3 | 0.2 | -0.2 |
| Class E | -1.5 | -0.2 | -0.6 | -0.7 | 0.7 | 0.7 |
| **Overall** | **-1.0** | **-0.1** | **0.0** | **-0.6** | **0.1** | **0.0** |
| Enc Time[%] | 96% | | | 97% | | |
| Dec Time[%] |  | | |  | | |
|  |  |  |  |  |  |  |
|  | Low delay P HE | | | Low delay P LC | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -1.2 | -0.4 | -0.5 | -0.7 | -0.1 | 0.3 |
| Class C | -0.6 | -0.1 | 0.0 | -0.3 | -0.1 | 0.0 |
| Class D | -0.4 | 0.2 | 0.0 | -0.2 | 0.1 | 0.1 |
| Class E | -1.4 | 0.1 | -0.2 | -0.5 | 1.1 | 0.6 |
| **Overall** | **-0.9** | **0.0** | **-0.2** | **-0.4** | **0.2** | **0.3** |
| Enc Time[%] | 105% | | | 102% | | |
| Dec Time[%] |  | | |  | | |

# The Conclusion

BD-rate results and encoding times match those reported in JCTVC-F405. The memory usage is increased due to estimating the weighting factors. There may be interaction with the ALF method.

# Patent rights declaration(s)

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