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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-G1013 |

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| *Title:* | **Cross Check of Panasonic's Proposal JCTVC-G640 On Varying QP Deblocking** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This cross check reports the BD-rate results for proposal JCTVC-G640 on varying QP deblocking. Two alternative test scenarios are followed, because the common conditions do not allow to test varying QP deblocking properly. The first test scenario is based on a “random QP” assignment anchor, while the second is based on the CE4 anchor, which employs a psycho-visual model to assign QP values to CUs. This cross check verified the proponent’s BD-rate results and found that they closely match.

# Results

The “random QP” assignment anchor based test results:

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

For the RA-HE and RA-LC class F sequences Chinaspeed and SlideEditing, discrepancies in the results are observed that are likely due to differences in recommended I frame period settings.

Results for the CE4 anchor:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **All Intra HE** | | | **All Intra LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class B | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class C | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class D | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class E | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class F | -0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| **Overall** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
|  | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 100% | | | 100% | | |
| Dec Time[%] | #NUM! | | | #NUM! | | |
|  |  |  |  |  |  |  |
|  | **Random Access HE** | | | **Random Access LC** | | |
|  | Y | U | V | Y | U | V |
| Class A | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% | -0.1% |
| Class B | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class C | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -0.1% |
| Class D | 0.0% | -0.1% | 0.0% | 0.0% | -0.1% | 0.0% |
| Class E |  |  |  |  |  |  |
| Class F | -0.1% | -0.1% | 0.0% | 0.0% | 0.0% | 0.0% |
| **Overall** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
|  | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 101% | | | 101% | | |
| Dec Time[%] | #NUM! | | | #NUM! | | |
|  |  |  |  |  |  |  |
|  | **Low delay B HE** | | | **Low delay B LC** | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | -0.1% | -0.1% | -0.1% | 0.0% | -0.1% | -0.3% |
| Class C | 0.0% | 0.0% | 0.2% | 0.0% | -0.1% | 0.0% |
| Class D | -0.1% | -0.1% | 0.3% | 0.0% | -0.1% | -0.3% |
| Class E | -0.1% | 0.1% | 0.2% | 0.0% | 0.0% | 0.4% |
| Class F | 0.0% | 0.2% | 0.2% | -0.1% | 0.2% | -0.1% |
| **Overall** | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | -0.1% |
|  | 0.0% | -0.1% | 0.1% | 0.0% | 0.0% | -0.1% |
| Enc Time[%] | 98% | | | 101% | | |
| Dec Time[%] | #NUM! | | | #NUM! | | |
|  |  |  |  |  |  |  |
|  | **Low delay P HE** | | | **Low delay P LC** | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | 0.0% | 0.1% | 0.2% | 0.0% | 0.3% | -0.2% |
| Class C | -0.1% | 0.1% | 0.1% | 0.0% | -0.1% | 0.2% |
| Class D | 0.0% | 0.0% | 0.1% | -0.1% | 0.0% | -0.3% |
| Class E | 0.0% | -0.1% | 0.1% | 0.0% | 0.3% | -1.1% |
| Class F | 0.0% | 0.0% | 0.1% | -0.1% | 0.0% | -0.3% |
| **Overall** | 0.0% | 0.0% | 0.1% | 0.0% | 0.1% | -0.3% |
|  | 0.0% | 0.0% | 0.1% | 0.0% | 0.1% | -0.3% |
| Enc Time[%] | 101% | | | 101% | | |
| Dec Time[%] | #NUM! | | | #NUM! | | |