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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  9th Meeting: Geneva, Switzerland, 27 April – 07 May, 2012 | Document: JCTVC-I0119  M24358 |

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| *Title:* | **Cross-verification of Panasonic proposal JCTVC-I0134 “On MVP candidate list for AMVP/Merge”** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This contribution reports cross-check results for Panasonic’s proposal JCTVC-I0134 “**On MVP candidate list for AMVP/Merge**”. In the proposal, it is advocated to fill the empty entries in the merging candidate list and in the AMVP candidate list with zero MVP candidates after the list is derived to avoid the potential encoder/decoder mismatch problem. The mismatch could happen when encoder signals valid merge\_idx and mvp\_idx values but the corresponding MVP candidates do not exist in the list, as the actual merging/AMVP list size for a PU can be smaller than maximum list size specified. The experimental results show that the coding results are identical to HM6.0 after making the proposed change. As a matter of fact, those filled zero MVP candidates are never used on the encoder. The source code was checked and confirmed to be consistent with the proposal description.

# Test Settings and Conditions

The simulations of this document have used HM6.0 software, the simulation platform is LSF equipped with Intel(R) Xeon(R) CPU X5570 64 bits Linux machines of different frequencies, the common test conditions and reference configurations specified in [1] are followed.

# Experimental results

The experimental results are summarized in Table 1. The results are identical to HM6.0. The results match the ones reported by proponents. Please be advised runtime here may not be accurate.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Random Access Main** | | | **Random Access HE10** | | |
|  | 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 |  |  |  |  |  |  |
| **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% |
| Class F | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 100% | | | 97% | | |
| Dec Time[%] | 98% | | | 95% | | |
|  |  |  |  |  |  |  |
|  | **Low delay B Main** | | | **Low delay B HE10** | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| Class B | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Class C | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.1% |
| 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% |
| **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% |
| Class F | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 102% | | | 96% | | |
| Dec Time[%] | 105% | | | 93% | | |
|  |  |  |  |  |  |  |
|  | **Low delay P Main** | | | **Low delay P HE10** | | |
|  | Y | U | V | Y | U | V |
| Class A |  |  |  |  |  |  |
| 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% |
| **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% |
| Class F | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 99% | | | 101% | | |
| Dec Time[%] | 96% | | | 100% | | |

Table 1. Experimental results

# Comments

The problem that proponents try to address is real and should be resolved. The proposed solution is a valid solution. An alternative solution would be restricting the valid merge\_idx and mvp\_idx range based on the actual merging/AMVP candidate list size of each PU.

# References

[1] F. Bossen, “Common test conditions and software reference configurations,” JCT-VC Document, JCTVC-G1100, San Jose, CA, USA, February 2012.

[2] [B. Bross](mailto:benjamin.bross@hhi.fraunhofer.de), [W.-J. Han](mailto:wjhan.han@samsung.com), [J.-R. Ohm](mailto:ohm@ient.rwth-aachen.de), [G. J. Sullivan](mailto:garysull@microsoft.com), [T. Wiegand](mailto:thomas.wiegand@hhi.fraunhofer.de) “High Efficiency Video Coding (HEVC) Test Model 6 (HM 6) Encoder Description” JCT-VC Document, JCTVC-G1003, San Jose, CA, USA, February 2012.

[3] T. Sugio, T. Nishi, “**On MVP candidate list for AMVP/Merge**” JCT-VC Document, JCTVC-I0134, 9th Meeting: Geneva, Switzerland, 27 April – 07 May, 2012