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| *Title:* | **Cross-check report of AHG13: On reference picture list modification (JCTVC-J0119)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Report | | |
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| *Source:* | Panasonic Corporation | | |

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# Abstract

This contribution presents results of cross-verification of JCTVC-J0119, “AHG13: On reference picture list modification”. JCTVC-J0119 proposes a modified reference picture list modification (RPLM) design based on the one in HEVC WD5. The bitrate and PSNR measurements that are provided by the proponents have been verified.

# Cross-check activities

The software and configurations were provided by the proponent and its performance relative to HM6.1 software was measured. The computing platform is Window 64bits and the executable files were compiled and simulated on both Window and Linux platforms.

For window test environment, simulations were run on the computing platform of Intel Core i7 980 @ 3.33GHz, 12GB RAM using window xp operating system. The executable files were compiled using visual studio 2010. For Linux, simulations were run on Intel Core i7 @ 1.70GHz. The executable files were compiled on 32-bit Linux with gcc 4.6.3.

The source code was inspected and it was verified that the software implementation matches the intended operation according to the algorithm description.

# Simulation Results

Experimental results, a bit-count comparison for parameters, are shown in table below. It was observed that the results obtained by Panasonic match with the RPL related bit-count results reported in JCTVC-J0119.

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|  | HEVC WD5 | HEVC WD7 | Simple solution | Advanced solution |
| Test 1: Low-delay |  |  |  |  |
| ref\_pic\_list\_modification related bit-count | 8736 | 7530 | 6350 | 5752 |
| % reduction w.r.t WD7 |  |  | 16% | 24% |
| Test 2: Random access |  |  |  |  |
| ref\_pic\_list\_modification related bit-count | 2430 | 1172 | 1949 | 1172 |
| % reduction w.r.t WD7 |  |  | -66% | 0% |

# Conclusions

This contribution presents a cross-check report on Qualcomm’s proposal on a modified reference picture list modification design (JCTVC-J0119). Through inspection of the source code, the cross-checker corroborated that the software changes match the algorithm description.

Simulation results from the cross-checker verified that the results reported in JCTVC-J0119 match with the cross-checker’s results simulated on Linux platform.

# References

1. A. K. Ramasubramonian, Y. Chen, Y.-K. Wang (Qualcomm), “AHG13: On reference picture list modification”, JCT-VC document JCTVC-J0119, Stockholm, July 2012.
2. Y-K. Wang, M. M. Hannuksela, T. K. Tan, R. Sjöberg, and Yan Ye, “Common conditions for reference picture marking and list construction proposals”, JCT-VC document JCTVC-H0725, San Jose, February 2012.

# Patent rights declaration(s)

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