

**Joint Video Experts Team (JVET)
of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC
29/WG 11**

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Title: EE2-related: Complexity reduction for Decoder Side Control Point Motion Vector Refinement (test 2.3b)

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Abstract

This contribution attempts to optimize the affine DMVR algorithm of test EE2-2.3 that was initially proposed in JVET-AB0178, in terms of trade-off between coding efficiency increase and complexity. It brings several aspects on top of test 2.3b, which are:

Distortion based early termination

6-parameters affine model early termination

Affine DMVR usage according to CU size and shape

Adaptation of affine DMVR merge candidate list construction

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Complexity reduction for Decoder Side Control Point Motion Vector Refinement (test)

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ABSTRACT

MEETING NOTES

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MEETING NOTES

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Joint Video Experts Team (JVET)
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1 Summary

Meeting Report of the 41st Meeting of the Joint Video Experts Team

Report document from the chair of JVET

Report

MEETING NOTES

[JVET-AC0276](#) EE2-related: Complexity reduction for Decoder Side Control Point Motion Vector Refinement (test 2.3b) [M. Bestel, F. Le Léannec, P. Andrivon, M. Radosavljević (Xiaomi), H. Huang, Y. Zhang, Z. Zhang, C.-C. Chen, V. Seregin, M. Karczewicz (Qualcomm)] [late]

This contribution attempts to optimize the affine DMVR algorithm of test EE2-2.3 that was initially proposed in JVET-AB0178, in terms of trade-off between coding efficiency increase and complexity. It brings several aspects on top of test 2.3b, which are:

- Distortion based early termination
- 6-parameters affine model early termination
- Affine DMVR usage according to CU size and shape
- Adaptation of affine DMVR merge candidate list construction

The proposed modification of top of test EE2-2.3 reportedly leads to the following BD-rates and runtimes relative to ECM-7.0 anchor.

The proposed method reportedly leads to the following BD-rate performances over ECM-7.0 anchors.

RA : XXX% / -XXX% / -XXX% (Y/Cb/Cr). Runtime : XXX% (Enc), XXX% (Dec)

From the partial results shown, about 2/3 of the gain from 2.3b is retained, while the increase in encoder/decoder run time is reduced to about 1/3. From the current results, this would not be a reasonable tradeoff yet.

Further improvements are foreseen by proponents.

It was agreed to investigate this in an EE.

It was noted that another proposal that could be further investigated in a next EE might be 2.4c for which the results were not complete by the time of current EE review.

CITATION

M. Bestel, F. Le Léannec, P. Andrivon, M. Radosavljević, H. Huang, Y. Zhang, Z. Zhang, C.-C. Chen, V. Seregin, M. Karczewicz, "EE2-related: Complexity reduction for Decoder Side Control Point Motion Vector Refinement (test 2.3b)", JVET-AC0276, 29th Meeting: by teleconference, DE, January 2023.