

**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: Non-EE2: AMVP mode with subblock-based temporal motion vector prediction

Status: Input document to JVET

Purpose: Proposal

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Abstract

This contribution proposes to apply SbTMVP to AMVP mode. Given a CU coded in AMVP with SbTMVP mode, the CU is predicted using a similar way to that of SbTMVP in merge mode except that the motion shift is signaled in the bitstream instead of deriving from left neighboring block. The motion shift comprises a derived MVP and a signaled MVD, and the MVD only has 32 candidates which are composed of 8 motion directions and 4 motion magnitudes. It is reported that on top of ECM-7.0, the overall coding performance impact for {Y, U, V, EncT, DecT} is {-0.10%, -0.08%, -0.12%, 104%, 100%} for RA and {-0.28%, -0.49%, -0.53%, 104%, 101%} for LB.

Introduction

In ECM-7.0, when a CU coded using subblock-based temporal motion vector prediction (SbTMVP), it is firstly split into 4x4 subblocks. Then, each subblock derives its own motion vector from a corresponding subblock in collocated picture. The corresponding subblock is obtained using a motion shift derived from left spatial neighboring block. The SbTMVP is only allowed in the merge mode in current ECM. To utilize the benefits of SbTMVP, this contribution proposes to extend SbTMVP to AMVP mode.

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<http://vexpertise.stbit.ru/documents/JVET-AC0103>

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Non-EEZ: AMVP mode with subblock-based temporal motion vector prediction

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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-AC0103](#) Non-EE2: AMVP mode with subblock-based temporal motion vector prediction [R.-L. Liao, J. Chen, Y. Ye, X. Li (Alibaba)]

This contribution proposes to apply SbTMVP to AMVP mode. Given a CU coded in AMVP with SbTMVP mode, the CU is predicted using a similar way to that of SbTMVP in merge mode except that the motion shift is signaled in the bitstream instead of deriving from left neighbouring block. The motion shift comprises a derived MVP and a signaled MVD, and the MVD only has 32 candidates which are composed of 8 motion directions and 4 motion magnitudes. It is reported that on top of ECM-7.0, the overall coding performance impact for {Y, U, V, EncT, DecT} is {-0.10%, -0.08%, -0.12%, 104%, 100%} for RA and {-0.28%, -0.49%, -0.53%, 104%, 101%} for LB.

Increase in encoding time due to additional motion search

Only one AMVP candidate is used.

It was agreed to investigate this in an EE. Reduction of encoding time should be targeted.

JVET-AC0213 is also targeting SbTMVP.

CITATION

R.-L. Liao, J. Chen, Y. Ye, X. Li, "Non-EE2: AMVP mode with subblock-based temporal motion vector prediction", JVET-AC0103, 29th Meeting: by teleconference, DE, January 2023.