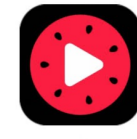


JVET-AH0222

Non-EE2: GPM-Affine with MMVD and TM

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Introduction

- Geometry partitioning mode with affine prediction (GPM-Affine) in ECM
 - *A GPM sub-partition can be predicted using affine motion compensation*
 - *GPM-Affine can be combined with regular GPM, GPM-Affine, and GPM-Intra*
- However, GPM-Affine is disallowed in combination with GPM-MMVD or GPM-TM

Proposed method

■ GPM-Affine with MMVD

- *An MV offset is added to all CPMVs of an affine candidate and the modified CPMVs are used for predicting a GPM sub-partition*
- *The signaling of the affine candidate and the MV offset is the same as GPM-Affine and GPM-MMVD*

■ GPM-Affine with TM

- *An affine candidate could be refined by template matching using the same method in affine mode*
- *A GPM sub-partition can be predicted by GPM-Affine-TM or GPM-TM*

Simulation results

■ On top of ECM-12.0

	RA					LDB				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-0.04%	-0.17%	-0.15%	102.4%	100.5%					
Class A2	-0.10%	-0.10%	-0.10%	102.2%	101.0%					
Class B	-0.07%	0.02%	-0.14%	103.0%	100.3%	-0.04%	-0.09%	-0.08%	101.1%	100.0%
Class C	-0.06%	-0.15%	-0.19%	103.8%	100.2%	-0.08%	-0.15%	0.16%	102.2%	101.3%
Class E						-0.15%	-0.50%	-1.00%	101.0%	99.6%
Overall	-0.06%	-0.09%	-0.15%	102.9%	100.5%	-0.08%	-0.21%	-0.23%	101.4%	100.3%
Class D	-0.11%	-0.18%	-0.14%	103.7%	99.9%	-0.22%	0.13%	-0.38%	102.2%	101.1%
Class F	-0.03%	-0.07%	-0.12%	102.8%	99.9%	0.13%	-0.52%	-0.49%	102.3%	98.8%

Conclusions

■ Proposed:

- *Extend GPM-Affine to be combined with MMVD and TM*
- *-0.06%/-0.08% for RA/LDB with minor encoding complexity*

■ It is recommended to adopt the proposed method in EE2