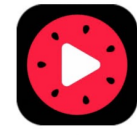
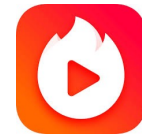


JVET-AH0091

Non-EE2: Geometry partitioning mode
with inter prediction and intra block copy

Yang Wang, Kai Zhang, Li Zhang
Bytedance Inc.



Introduction

- Geometry partitioning mode (GPM) in ECM
 - *GPM: Inter prediction + Inter prediction*
 - *GPM with inter and intra prediction (GPM-Intra): Inter prediction + Intra prediction*
 - *Spatial GPM (SGPM): Intra prediction + Intra prediction*
 - *IBC with geometry partitioning (IBC-GPM): IBC + Intra prediction*
 - *Bi-predictive IBC-GPM: IBC + IBC*
- Inter prediction + IBC for GPM?

Proposed method

- Geometry partitioning mode with inter prediction and intra block copy (GPM-inter/IBC)
 - *The two sub-partitions divided geometrically are generated using inter prediction and IBC*
 - *An IBC candidate list is constructed, and the index of the selected block vector is signaled*
 - *Regular GPM, GPM-MMVD, and GPM-Affine*
 - *A CU flag is signaled to indicate whether GPM-inter/IBC is used for a sub-partition*

Simulation results

■ On top of ECM-12.0

	Random Access Main 10					Low delay B Main 10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class F	0.00%	0.00%	-0.06%	100.6%	100.8%	-0.19%	-0.73%	-0.44%	100.0%	100.7%
Class TGM	-0.43%	-0.39%	-0.44%	100.1%	99.9%	-0.91%	-0.87%	-0.86%	100.1%	98.2%

Conclusions

■ Proposed:

- *Extend GPM to include the combination of inter prediction and IBC, which is missed in current ECM*
- *0.00%/-0.43% for Class F and Class TGM under RA, -0.19%/-0.91% for Class F and Class TGM under LDB with negligible complexity*

■ It is recommended to adopt the proposed method in EE2