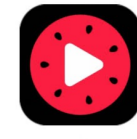


JVET-AB0188

Non-EE2: Extensions of intra block copy

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Introduction

- Some coding tools are applied to inter-block, but ignoring IBC
 - *Intra prediction is used for inter coding tools*
 - Combined inter and intra prediction (CIIP)
 - GPM with inter and intra prediction
 - *LIC is used to compensate illumination variation for inter prediction*
 - Illumination variation within a picture is not studied

Proposed method

■ #1: Combined IBC and intra prediction (IBC-CIIP)

- $P = w_1 * P_{ibc} + w_2 * P_{intra}$
- *IBC AMVP mode and IBC merge mode*
- *A CU flag is signaled*

Proposed method

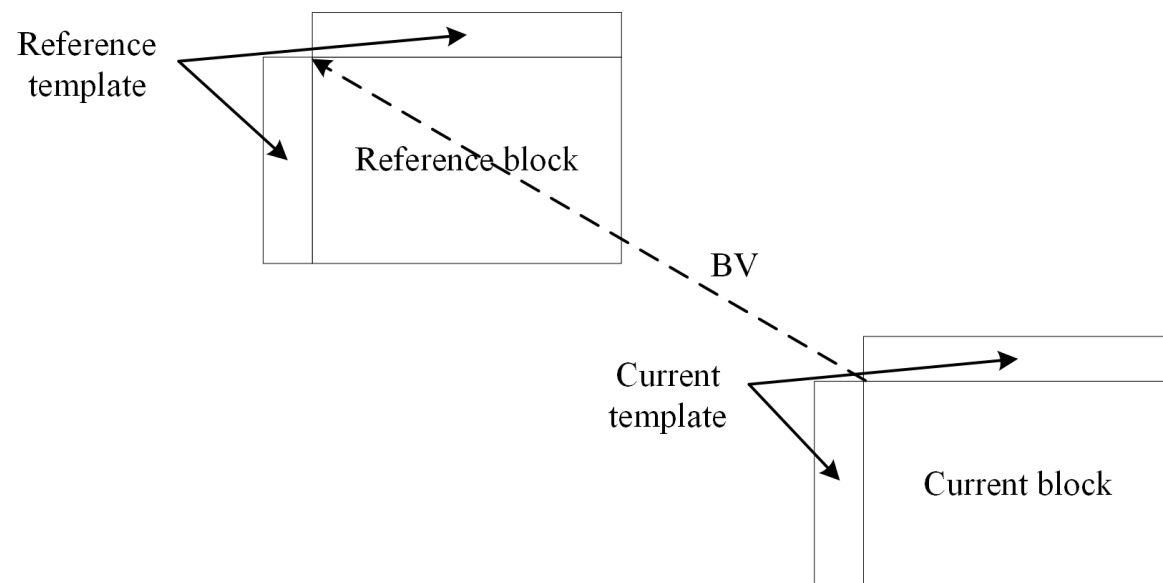
■ #2: IBC with geometry partitioning (IBC-GPM)

- *A CU is divided into two sub-partitions geometrically*
- *IBC and intra prediction are used to generate the prediction signals*
- *IBC merge mode*
- *A CU flag is signaled*

Proposed method

■ #3: IBC with local illumination compensation (IBC-LIC)

- $P'[x] = \alpha * P[x] + \beta$
- α and β are derived same as LIC, except that the reference template is obtained by BV
- IBC AMVP mode: a CU flag is signaled
- IBC merge mode: inherit from IBC merge candidate



Simulation results

■ On top of ECM-6.0

Aspect	Class	All Intra Main 10					Random Access Main 10				
		Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
#1	Class F	-0.52%	-0.52%	-0.27%	143%	103%	-0.29%	-0.25%	-0.23%	106%	101%
	Class TGM	-0.24%	-0.13%	-0.18%	147%	104%	-0.10%	-0.10%	-0.02%	103%	100%
#1+#2	Class F	-0.66%	-0.57%	-0.53%	159%	102%	-0.31%	-0.40%	-0.41%	109%	100%
	Class TGM	-0.94%	-0.75%	-0.78%	162%	101%	-0.26%	-0.23%	-0.18%	105%	100%
#1+#2+#3	Class F	-2.50%	-2.56%	-2.55%	160%	101%	-1.60%	-1.58%	-1.63%	109%	100%
	Class TGM	-1.27%	-1.14%	-1.13%	157%	101%	-0.36%	-0.33%	-0.28%	104%	99%
Simplified #1+#2+#3	Class F	-2.31%	-2.26%	-2.14%	121%	99%	-1.44%	-1.38%	-1.56%	104%	100%
	Class TGM	-1.08%	-0.98%	-1.03%	122%	101%	-0.31%	-0.38%	-0.30%	102%	101%

Conclusions

- Proposed:
 - *Extensions of IBC*
 - Aspect #1: IBC-CIIP
 - Aspect #2: IBC-GPM
 - Aspect #3: IBC-LIC
- It is recommended to adopt the proposed method in EE2