

JVET-N0076

CE2-5.3: Simplifications for inherited affine merging candidates

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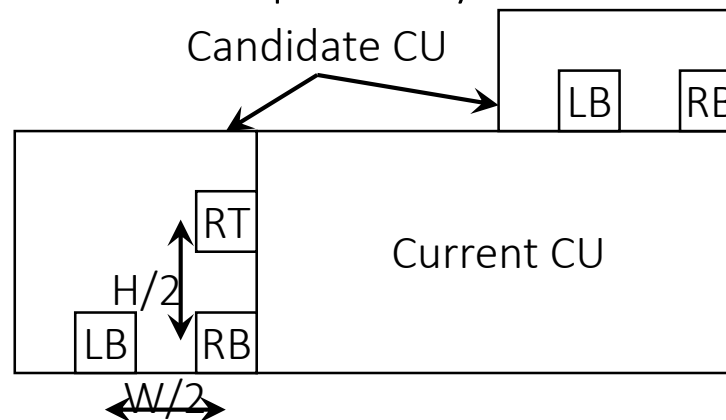
Overall Summary

- Simplifications for inherited affine candidates
 - Control point motion vector (CPMV) buffer of 7.7K bits can be replaced by a smaller motion vector (MV) buffer of 2.9K bits
 - Use two or three subblock MVs with half coding unit (CU) height or half CU width for affine candidate inheritance

Over VTM-4.0 (%)			Y	U	V	EncT	DecT
1	Simplifications for inherited affine candidates	RA	0.01	-0.07	-0.02	100%	100%
		LB	0.02	0.13	-0.32	99%	99%

Proposed Method

- Subblock MVs with **half CU height or half CU width** for affine inheritance inside the current CTU row
 - “LB, RB, and RT” to the left of the current CU are used for deriving 6-parameter inherited affine candidates
 - Distance between LB and RB is half candidate CU width and the distance between RT and RB is half candidate CU height
 - “LB and RB” to the top of the current CU are used 4-parameter inherited affine candidates
 - Distance between LB and RB is half candidate CU width
 - CPMV buffer of 7.7K bits replaced by MV buffer of 2.9K bits



Simulation Results

	Random access Main10				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	-0.01%	-0.08%	0.01%	100%	100%
Class A2	0.01%	-0.10%	-0.04%	99%	100%
Class B	0.01%	-0.08%	0.04%	100%	100%
Class C	0.03%	-0.02%	-0.09%	99%	100%
Class E					
Overall	0.01%	-0.07%	-0.02%	100%	100%
Class D	0.08%	0.00%	0.01%	100%	99%
Class F	-0.01%	0.06%	0.03%	100%	100%

	Low delay B Main10				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.02%	-0.13%	-0.37%	100%	101%
Class C	0.00%	0.29%	-0.13%	100%	98%
Class E	0.06%	0.32%	-0.51%	99%	95%
Overall	0.02%	0.13%	-0.32%	99%	99%
Class D	0.10%	0.48%	-0.08%	101%	101%
Class F	-0.14%	-0.10%	-0.21%	99%	101%

Conclusions

- Proposed to simplify inherited affine candidates
- Coding efficiency impact is minor
- CPMV buffer can be removed
- Thanks Huawei for cross-checking