

The background is a solid green color with a repeating pattern of white line-art icons. These icons include various nautical items like anchors, lifebuoys, and seashells, as well as outdoor and travel-related items like a compass, a map, a camera, and a bird in flight.

MEDIATEK

JVET-L0088

CE4.2.3: Affine merge mode

Authors: Zhi-Yi Lin, Tzu-Der Chuang, Ching-Yeh Chen, Yu-Wen Huang, Shaw-Min Lei

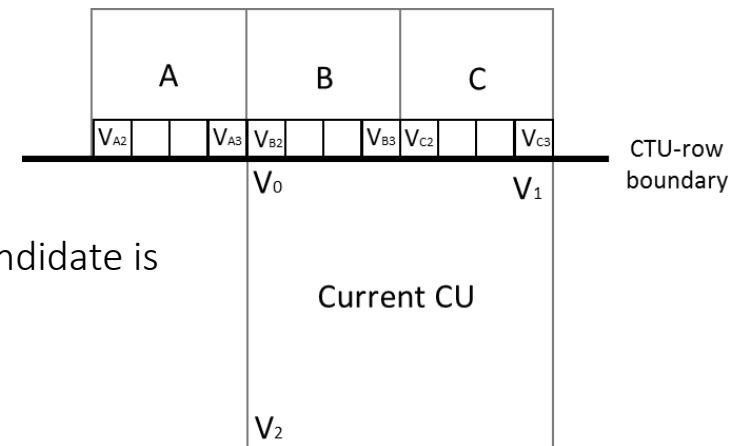
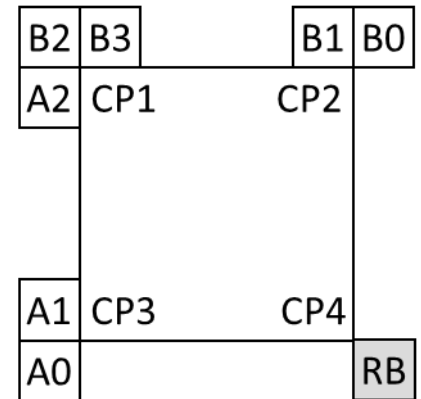
Presenter: Zhi-Yi Lin

Overall Summary

- Proposed to reduce the complexity and CTU-row buffer of affine merge mode in unified merge list
- BD-rates and runtimes
 - Anchor: VTM2.0.1
VTM-2.0.1-RA: **-0.17%** (Y) -0.14% (U) -0.28% (V), EncT: 101%, DecT: 107%
VTM-2.0.1-LB: **-0.26%** (Y) -0.26% (U) -0.39% (V), EncT: 101%, DecT: 105%
 - Anchor: common base
VTM-2.0.1-RA: **0.58%** (Y) 0.49% (U) 0.50% (V)
VTM-2.0.1-LB: **0.17%** (Y) 0.14% (U) 0.01% (V)

Proposed Methods

- Treat 4-parameter affine as 6-parameter affine
- Spatial inherited affine (at most 5)
 - Use reference blocks' position for pruning (max: 4)
 $B0 \rightarrow B1, A0 \rightarrow A1, B2 \rightarrow A1$ and $B1$
- Constructed affine (at most 1)
 - No pruning
 - Spatial constructed affine (CP1, CP2, CP3) = (B2, B1, A1)
 \rightarrow temporal constructed affine (CP1, CP2, CP4) = (B2, B1, RB)
 - Only available when all control points' refIdx are the same
- Buffer reduction
 - Use MV_LB and MV_RB to derive inherited affine candidate is neighboring position is above CTU boundary



Simulation Results

Test-A	Simplification of spatial inherited affine candidate
Test-B	Simplification of constructed affine candidate
Test-C	Test-A + Test-B
Test-D	Test-C + CTU-row buffer redcuton

VTM2.0.1	RA					LB				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Common base	-0.75	-0.62	-0.78	107	107	-0.44	-0.40	-0.40	108	105
Test-A	-0.06	-0.06	-0.15	100	101	-0.13	-0.21	-0.31	100	101
Test-B	0.25	0.22	0.09	101	102	-0.04	-0.03	-0.08	100	101
Test-C	-0.28	-0.22	-0.33	102	107	-0.29	-0.23	-0.39	101	104
Test-D	-0.17	-0.14	-0.28	101	107	-0.26	-0.26	-0.39	101	105

Conclusions

- Proposed to reduce the complexity and CTU-row buffer of affine merge mode
- BD-rates and runtimes
 - Anchor: VTM2.0.1
VTM-2.0.1-RA: **-0.17%** (Y) -0.14% (U) -0.28% (V), EncT: 101% DecT: 107%
VTM-2.0.1-LB: **-0.26%** (Y) -0.26% (U) -0.39% (V), EncT: 101% DecT: 105%
 - Anchor: common base
VTM-2.0.1-RA: **0.58%** (Y) 0.49% (U) 0.50% (V)
VTM-2.0.1-LB: **0.17%** (Y) 0.14% (U) 0.01% (V)