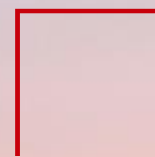


Non-CE4: Simplification on AMVP list construction

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Overview

- Proposes to simplify AMVP list construction
 - Remove the second pass search of spatial motion vectors
 - With this modification, spatial motion vector scaling is totally removed from VTM-5.0
- Simulation results
 - 0.01% and -0.03% in RA and LB

AMVP list construction

Original

- 1) Insert a non-scaled spatial predictor from left positions (A0, A1) if found;
- 2) If non-scaled left spatial predictor is not found, insert a scaled left spatial predictor if found;
- 3) Insert a non-scaled spatial predictor from above positions (B0, B1, B2) if found;
- 4) If left spatial predictor is not found, insert a second above spatial predictor (non-scaled or scaled) if found;
- 5) Pruning between the first two predictors;
- 6) If not enough predictors in the list, insert temporal predictor;
- 7) If not enough predictors in the list, insert non-scaled HMVP predictors;
- 8) Fill list with zero motion vector(s).

Proposed:

- 1) Insert a non-scaled spatial predictor from left positions (A0, A1) if found;
- 2) Insert a non-scaled spatial predictor from above positions (B0, B1, B2) if found;
- 3) Pruning between the first two predictors;
- 4) If not enough predictors in the list, insert temporal predictor;
- 5) If not enough predictors in the list, insert non-scaled HMVP predictors;
- 6) Fill list with zero motion vector(s).

Coding performance

	Random Access				
	Over VTM-5.0				
	Y	U	V	EncT	DecT
Class A1	0.03%	-0.03%	0.09%	100%	100%
Class A2	0.00%	0.00%	0.04%	100%	100%
Class B	0.01%	0.07%	-0.02%	101%	100%
Class C	0.02%	-0.01%	0.02%	101%	101%
Class E					
Overall	0.01%	0.01%	0.02%	100%	100%
Class D	0.02%	0.18%	0.15%	101%	100%
Class F	0.04%	0.05%	0.08%	100%	101%

	Low delay B				
	Over VTM5.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	-0.01%	0.15%	0.12%	100%	101%
Class C	-0.04%	0.02%	-0.17%	100%	100%
Class E	-0.03%	-0.08%	-0.40%	100%	101%
Overall	-0.03%	0.05%	-0.11%	100%	101%
Class D	0.02%	0.65%	0.77%	100%	101%
Class F	0.09%	0.35%	-0.52%	100%	100%

Conclusion

Suggest adopt for next version of VTM.

Thank Bytedance for cross-checking.

Thank you.

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