

CE4: Using regular merge candidate list for triangular PU mode (CE4-4.9)

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Descriptions of CE4-4.a~d

- Step1: Full or partial regular merge list is used.
- Step2: Add each regular merge candidate into the TPM merge candidate list. Each bi-directional MV is split into 2 uni-directional MVs(L0 part comes the first and L1 part the second). Full pruning or no pruning is performed.

	Full regular merge list	Spatial and Temporal members of regular merge list
Full pruning in the 2 nd step	CE4-4.9.a	CE4-4.9.c
No pruning in the 2 nd step	CE4-4.9.b	CE4-4.9.d

Results summary

- RD Performance

Test	Randomaccess					Lowdelay				
4-4.9.a	-0.04%	-0.14%	-0.14%	100%	100%	-0.03%	0.10%	-0.01%	100%	101%
4-4.9.b	-0.01%	-0.08%	-0.06%	100%	100%	0.31%	0.48%	0.06%	100%	102%
4-4.9.c	-0.02%	-0.04%	-0.04%	100%	100%	0.13%	0.19%	0.08%	100%	101%
4-4.9.d	0.00%	-0.05%	-0.07%	101%	101%	0.34%	0.45%	0.30%	100%	101%

- Complexity analysis

Test#	Merge list size	Max number of potential candidates (stage1+stage2)	Max number of candidate comparison (stage1+stage2)	Max number of MV scaling (stage1+stage2)	Max number of temporal candidates (stage1+stage2)	Max number of MV average (stage1+stage2)	Max number of encoder MCs (stage1+stage2)
4-4.9.a	5	25(13+12)	47(9+38)	2(2+0)	2(2+0)	2(2+0)	5
4-4.9.b	5	25(13+12)	9(9+0)	2(2+0)	2(2+0)	2(2+0)	5
4-4.9.c	5	17(7+10)	35(5+30)	2(2+0)	2(2+0)	0	5
4-4.9.d	5	17(7+10)	5(5+0)	2(2+0)	2(2+0)	0	5

Detailed results

• CE4-4.9.a

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	-0.02%	-0.09%	-0.03%	102%	101%
Class A2	-0.08%	-0.16%	-0.16%	100%	100%
Class B	-0.04%	-0.11%	-0.09%	99%	100%
Class C	-0.04%	-0.19%	-0.25%	100%	100%
Class E					
Overall	-0.04%	-0.14%	-0.14%	100%	100%
Class D	-0.05%	-0.18%	-0.04%	100%	100%
Class F	-0.02%	-0.06%	-0.13%	99%	100%

	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	-0.01%	-0.17%	0.17%	100%	100%
Class C	-0.01%	0.20%	-0.16%	100%	102%
Class E	-0.08%	0.41%	-0.11%	100%	100%
Overall	-0.03%	0.10%	-0.01%	100%	101%
Class D	0.05%	-0.27%	-0.23%	99%	99%
Class F	-0.02%	-0.33%	-0.35%	100%	99%

• CE4-4.9.b

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	0.01%	-0.02%	0.00%	102%	101%
Class A2	-0.08%	-0.15%	-0.10%	100%	100%
Class B	-0.01%	-0.10%	-0.04%	99%	100%
Class C	0.02%	-0.04%	-0.10%	100%	100%
Class E					
Overall	-0.01%	-0.08%	-0.06%	100%	100%
Class D	0.00%	-0.16%	-0.01%	100%	101%
Class F	0.03%	0.03%	0.00%	100%	99%

	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.18%	0.06%	0.01%	100%	103%
Class C	0.33%	0.67%	0.55%	100%	100%
Class E	0.52%	0.92%	-0.51%	100%	102%
Overall	0.31%	0.48%	0.06%	100%	102%
Class D	0.30%	0.42%	-0.36%	99%	102%
Class F	0.10%	0.46%	0.78%	99%	100%

Detailed results

- CE4-4.9.c

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	0.00%	0.02%	0.04%	102%	102%
Class A2	-0.06%	-0.06%	-0.07%	100%	99%
Class B	-0.01%	-0.09%	-0.01%	99%	100%
Class C	0.00%	-0.01%	-0.11%	100%	101%
Class E					
Overall	-0.02%	-0.04%	-0.04%	100%	100%
Class D	-0.01%	-0.26%	-0.13%	100%	100%
Class F	-0.01%	-0.03%	-0.05%	99%	100%

	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.07%	-0.22%	-0.13%	100%	99%
Class C	0.15%	0.49%	0.37%	101%	101%
Class E	0.17%	0.47%	0.04%	100%	102%
Overall	0.13%	0.19%	0.08%	100%	101%
Class D	0.10%	0.13%	-0.35%	98%	100%
Class F	-0.08%	0.00%	-0.28%	100%	101%

- CE4-4.9.d

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	0.00%	0.11%	0.02%	102%	102%
Class A2	-0.04%	-0.14%	-0.04%	100%	100%
Class B	0.01%	-0.08%	-0.11%	100%	101%
Class C	0.03%	-0.05%	-0.11%	100%	100%
Class E					
Overall	0.00%	-0.05%	-0.07%	101%	101%
Class D	0.01%	-0.22%	0.00%	100%	100%
Class F	0.01%	0.01%	-0.08%	99%	100%

	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.20%	0.22%	0.16%	100%	101%
Class C	0.33%	0.65%	0.52%	101%	102%
Class E	0.60%	0.57%	0.25%	101%	101%
Overall	0.34%	0.45%	0.30%	100%	101%
Class D	0.31%	0.00%	-0.19%	99%	99%
Class F	0.08%	0.32%	0.62%	101%	100%