

JVET-X0119

Non-EE2: On pairwise merge candidate

Guillaume Laroche
Patrice Onno
Romain Bellessort

Pairwise candidate in ECM

- **Pairwise at the end of the list**
- **Based on the 2 most probable candidates**

Regular Merge candidates list

Cand0
Cand1
Cand2
Cand3
Cand4
Cand5
Cand6
Cand7
Cand8
Pair (Cand0, Cand1)

Proposed modification 1

■ Add pairwise candidate during the ARMC (JVET-W0090) reordering process

■ The updated candidates are more probable than the initial candidate.

Regular Merge candidates list

Cand0
Cand1
Cand2
Cand3
Cand4
Cand5
Cand6
Cand7
Cand8
Cand9

ARMC

Updated list

NewCand0 = Cand3
NewCand1 = Cand0
NewCand2 = Cand2
NewCand3 = Cand1
Cand4
Cand5
Cand6
Cand7
Cand8
Cand9

Add pairwise If not duplicate

NewC0 = Cand3
NewC1 = Cand0
NewC2 = Cand2
NewC3 = Cand1
Pairwise = Pair(NewC0, NewC1)
Cand4
Cand5
Cand6
Cand7
Cand8
~~Cand9~~

ARMC

Updated list

NewC0 = Pairwise
NewC1 = Cand3
NewC2 = Cand0
NewC3 = Cand2
NewC4 = Cand1
Cand4
Cand5
Cand6
Cand7
Cand8

Proposed modification 2

- Add pairwise based on the first candidate after the reordering

Updated list

NewC0

NewC1

NewC2

NewC3

NewC4

NewC5 = Pair (NewC0,Cand4)

NewC6 = Pair (NewC0,Cand5)

NewC7 = Pair (NewC0,Cand6)

NewC8 = Pair (NewC0,Cand7)

NewC9 = Pair (NewC0,Cand8)

Experimental results (ECM-2.0)

■ BDR YUV gains:

■ RA: -0.13%

■ LD: -0.10%

■ No additional encoding/decoding time complexity

	Random Access Main 10				
	Over ECM-2.0			EncT	DecT
	Y	U	V		
Class A1	-0.12%	-0.13%	-0.09%	101%	101%
Class A2	-0.11%	-0.04%	-0.04%	101%	101%
Class B	-0.13%	-0.14%	-0.12%	100%	101%
Class C	-0.15%	-0.10%	0.03%	100%	101%
Class E					
Overall	-0.13%	-0.11%	-0.06%	101%	101%
Class D	-0.11%	-0.19%	-0.03%	99%	100%
Class F	-0.02%	0.03%	-0.06%	100%	101%

	Low delay B Main10				
	Over ECM-2.0			EncT	DecT
	Y	U	V		
Class A1					
Class A2					
Class B	-0.06%	0.19%	0.05%	100%	99%
Class C	-0.22%	-0.13%	-0.07%	98%	99%
Class E	-0.01%	-0.46%	-0.57%	99%	101%
Overall	-0.10%	-0.08%	-0.14%	99%	100%
Class D	-0.02%	-0.15%	-0.41%	98%	103%
Class F	-0.21%	0.04%	-0.21%	103%	102%



Thank you for your attention.