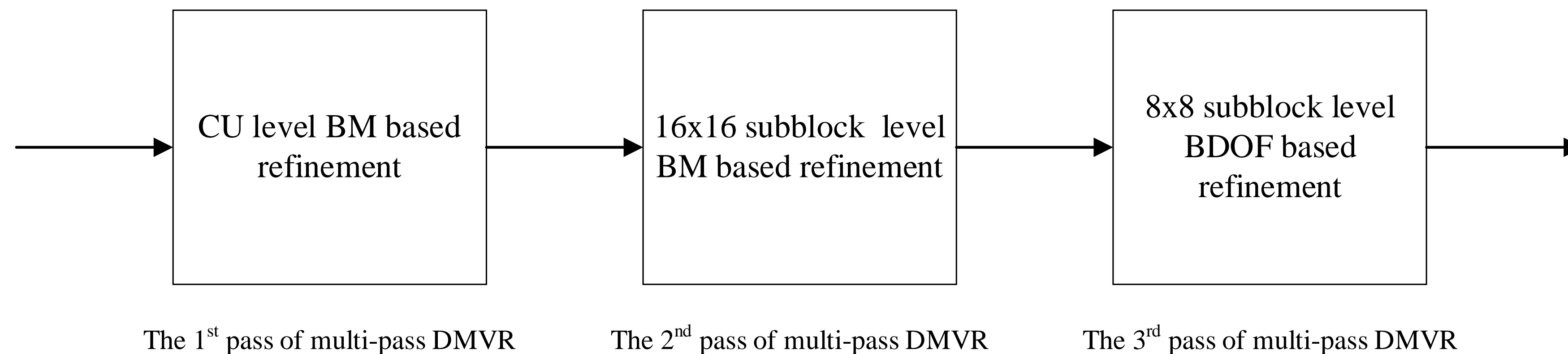


JVET-AD0176 Non-EE2: Improvements on multi-pass DMVR

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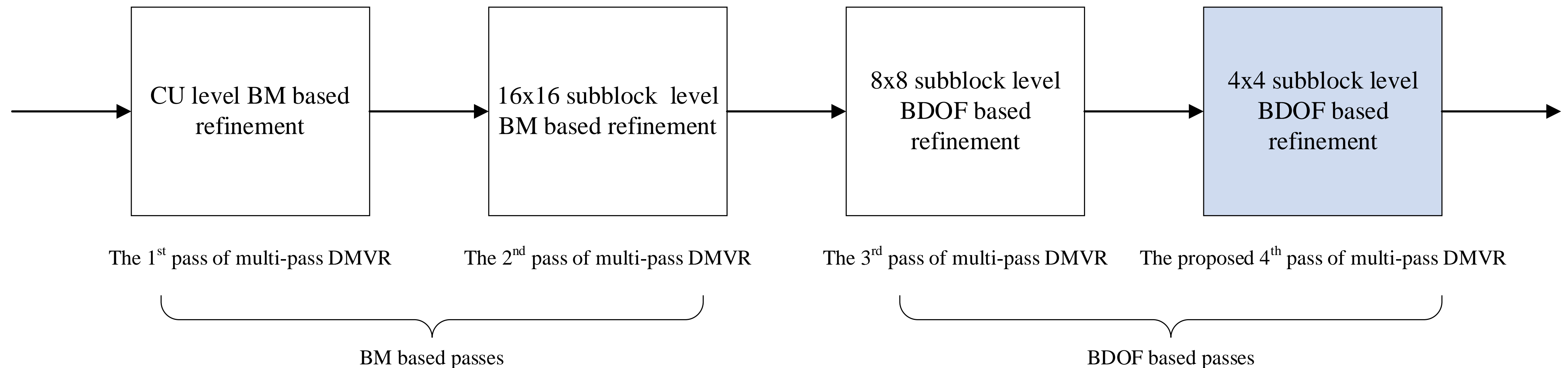
Background

- Multi-pass DMVR was adopted in ECM software
 - The first pass: CU level bilateral matching based refinement
 - The second pass: 16x16 subblock level bilateral matching based refinement
 - The third pass: 8x8 subblock level BDOF based refinement



Proposal

- It is proposed to extend multi-pass DMVR by adding another pass
 - It is a BDOF based pass which is same as the 3rd pass of multi-DMVR
 - It is applied on 4x4 subblock level
 - it is applied as the 4th pass



Results

- The experiments are conducted under ECM CTC

	Random Access Main 10				
	Over ECM-8.0				
	Y	U	V	EncT	DecT
Class A1	-0.02%	-0.12%	-0.19%	107%	116%
Class A2	-0.25%	-0.38%	-0.32%	107%	117%
Class B	-0.11%	-0.18%	-0.19%	106%	120%
Class C	-0.20%	-0.23%	-0.30%	105%	118%
Class E					
Overall	-0.14%	-0.22%	-0.25%	106%	118%
Class D	-0.30%	-0.26%	-0.44%	105%	118%
Class F	-0.12%	-0.19%	-0.03%	104%	111%

Conclusion

- It is proposed to extend multi-pass DMVR by adding a 4x4 subblock level BD OF based pass
- It achieves $\{-0.14\%(Y), -0.22\%(U), -0.25\%(V)\}$ overall BD-rate performance with 105% encoding time and 118% decoding time
- It is suggested to further study the proposed method in the next round of EE

Thanks

