



JVET-P0322

Non-CE4: CIIP size restriction

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○ Introduction

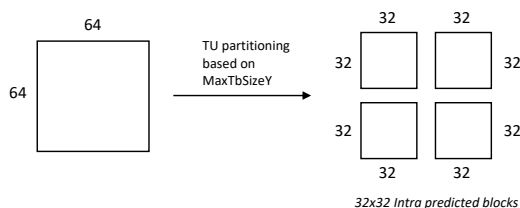
- This contribution proposes to restrict CLIP to blocks with width and height equal to or less than the maximum transform size.



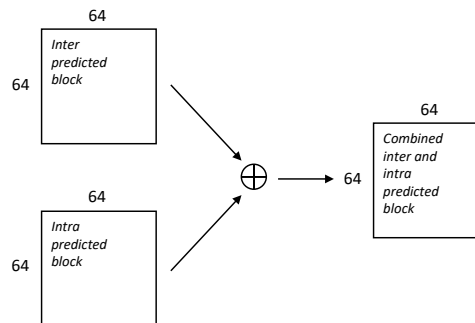
○ Introduction

- The maximum transform size signaling has been adopted.
 - The maximum transform size is selected between 32 and 64.
 - When the maximum transform size is 32, all intra predictions are performed on blocks with width and height ≤ 32 .
- The maximum block size for CIIP is fixed as 64x64.
 - When the maximum transform size is 32, the intra prediction in CIIP can be performed to 64x64 blocks.

- Regular intra prediction of 64x64 block



- CIIP of 64x64 block



- → Maximum intra prediction sizes for the regular intra prediction and CIIP are not aligned when the maximum transform size is 32.
 - Because of CIIP, the hardware/software should have a capability to process 64x64 intra prediction, even though the maximum size of the regular intra prediction is 32x32.



○ Proposed method

- It is proposed to allow CIIP to blocks with width and height \leq MaxTbSizeY.
 - No change when MaxTbSizeY = 64
 - When MaxTbSizeY = 32, the maximum CU size for CIIP and the maximum intra prediction size are aligned as 32x32.
- Experimental results
 - Under CTCs except that MaxTbSizeY is set to 32
 - No impact under CTCs

	Random access Main10				
	Over VTM-6.0 + MaxTbSizeY=32				
	Y	U	V	EncT	DecT
Class A1	0.11%	0.05%	0.12%	99%	100%
Class A2	0.05%	0.03%	0.01%	99%	100%
Class B	0.04%	0.04%	0.08%	99%	100%
Class C	-0.02%	0.11%	0.03%	100%	100%
Class E					
Overall	0.04%	0.06%	0.06%	99%	100%
Class D	0.00%	0.04%	0.00%	100%	99%
Class F	0.01%	0.04%	0.03%	100%	99%

	Low delay B Main10				
	Over VTM-6.0 + MaxTbSizeY=32				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.05%	0.17%	0.31%	98%	99%
Class C	0.02%	-0.04%	-0.08%	99%	100%
Class E	-0.01%	0.06%	0.25%	99%	99%
Overall	0.02%	0.07%	0.16%	99%	99%
Class D	-0.01%	-0.07%	-0.02%	100%	100%
Class F	0.13%	-0.07%	0.62%	99%	99%



○ Conclusion

- It is proposed to restrict the maximum CU size for CIIP to be $(\text{MaxTbSizeY} \times \text{MaxTbSizeY})$.
- The proposed method decreases the hardware/software requirement for the intra prediction, which is needed to support CIIP for blocks greater than $(\text{MaxTbSizeY} \times \text{MaxTbSizeY})$.
 - BD-rate loss: 0.04% for RA and 0.02% for LDB
- Thank LGE for crosscheck.

