



JVET-N0216

Non-CE3: Determination of wide-angle mode using the size of a coding block

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○ Introduction

- The wide-angle modes are determined at TU block level based on the block's ratio of width and height.
- There are two cases where a coding block is further partitioned into multiple transform blocks.
 - In ISP mode, the size of coding block is used at each transform block for wide-angle mode decision.
 - In large coding blocks exceeding maxTbsize, the size of transform block is used for wide-angle mode decision.

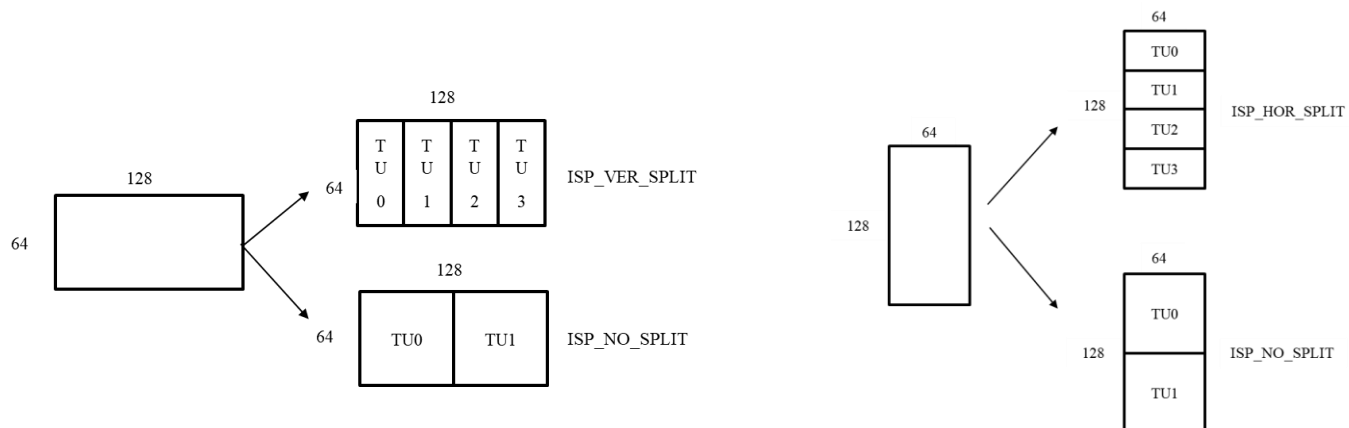


Figure 1. Coding blocks with multiple TUs



○ Proposed method

- It is proposed to determine the wide-angle mode of TUs based on the CU's width and height
 - For the consistency of applying the wide-angle modes for TUs between cases where a CU with height or width greater than maxTbsize and a CU using ISP mode



○ Experimental results

- Experimental conditions
 - Anchor : VTM-4.0 with the RDO check of greater than 4096 samples for intra prediction
 - Test : The proposed method based on Anchor
- Comparison of the proposed method over Anchor

Random access Main10					
Over VTM-4.0 with the RDO check of greater than 4096 samples					
	Y	U	V	EncT	DecT
Class A1	-0.02%	0.01%	0.05%	99%	100%
Class A2	0.00%	0.01%	-0.03%	100%	100%
Class B	0.00%	0.01%	0.03%	100%	100%
Class C	0.00%	0.00%	0.00%	100%	100%
Class E					
Overall	0.00%	0.01%	0.01%	100%	100%
Class D	0.00%	0.00%	0.00%	100%	100%
Class F	0.00%	0.00%	0.00%	100%	100%

Low delay B Main10					
Over VTM-4.0 with the RDO check of greater than 4096 samples					
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.00%	0.05%	-0.05%	100%	99%
Class C	0.00%	0.00%	0.00%	100%	100%
Class E	0.00%	0.00%	0.00%	100%	100%
Overall	0.00%	0.02%	-0.02%	100%	100%
Class D	0.00%	0.00%	0.00%	100%	100%
Class F	-0.09%	0.04%	-0.09%	100%	98%



○ Conclusion

- In this contribution,
 - It is proposed to determine wide-angle mode using the size of a coding block at a transform block level instead of the size of the transform block itself.
- It is reportedly shown that the method provides overall BD-rate:
 - RA: 0.00% (Y), 0.01% (U), 0.01% (V), 100% (EncT), 100% (DecT)
 - LD : 0.00% (Y), 0.02% (U), -0.02% (V), 100% (EncT), 100% (DecT)
- It is recommended to adopt the proposed method to the next version of VVC specification.
- Thank Chosun university for crosscheck.

