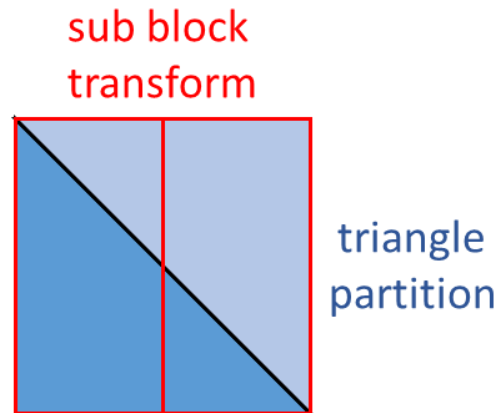


JVET-N0483

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Problem statement

- In VVC, sub-block transform is applied to triangle partition mode
- Two artificially intersecting boundaries are created in a CU



Proposed method

- To disable sub-block transform for triangle partition mode

coding_unit(x0, y0, cbWidth, cbHeight, treeType) {	Descriptor
... {	
if(!pcm_flag[x0][y0]) {	
if(CuPredMode[x0][y0] != MODE_INTRA && merge_flag[x0][y0] == 0) {	
cu_cbf	ae(v)
if(cu_cbf) {	
if(CuPredMode[x0][y0] == MODE_INTER && sps_sbt_enabled_flag && !ciip_flag[x0][y0] && !merge_triangle_flag[x0][y0]) {	
if(cbWidth <= MaxSbtSize && cbHeight <= MaxSbtSize) {	
allowSbtVerH = cbWidth >= 8	
allowSbtVerQ = cbWidth >= 16	
allowSbtHorH = cbHeight >= 8	
allowSbtHorQ = cbHeight >= 16	
if(allowSbtVerH allowSbtHorH allowSbtVerQ allowSbtHorQ) {	
cu_sbt_flag	ae(v)
}	
... }	
}	

Simulation results

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	-0.01%	0.05%	0.06%	100%	100%
Class A2	-0.01%	-0.05%	0.00%	100%	100%
Class B	0.01%	-0.07%	-0.03%	100%	98%
Class C	0.01%	0.06%	-0.11%	100%	100%
Class E					
Overall	0.00%	-0.01%	-0.03%	100%	99%
Class D	-0.02%	0.13%	0.16%	100%	101%
Class F	-0.02%	0.01%	0.01%	100%	99%
	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.02%	0.23%	-0.11%	100%	101%
Class C	0.01%	0.44%	0.06%	100%	99%
Class E	-0.04%	0.35%	-0.58%	100%	98%
Overall	0.00%	0.33%	-0.17%	100%	99%
Class D	0.01%	-0.23%	-0.39%	100%	97%
Class F	-0.13%	-0.35%	-0.09%	100%	99%



Additional information

- Combination of TPM and SBT is seldom selected

	Ratio of TPM blocks	Ratio of TPM + SBT blocks
RA	2.5%	0.1%
LDB	6.0%	0.4%

Conclusion

- No coding performance impact in both RA and LDB configurations
- TPM + SBT is rarely chosen by encoder even when allowed
- Disabling such combination simplifies encoder
- Suggest to adopt the proposal into VVC draft 5

