

JVET-P0740

CE5-related: Combination of JVET-P0086 and JVET-P0161 on deblocking boundary strength fix for TPM and affine mode

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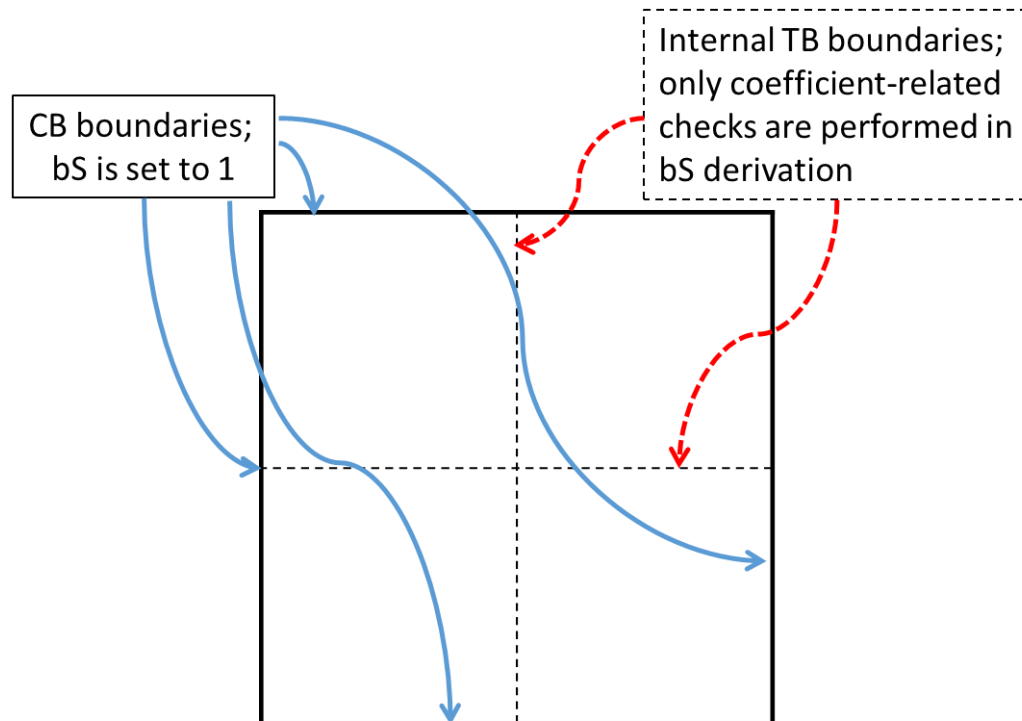
Overall Summary

- A combination of JVET-P0086 and JVET-P0161 on deblocking bS fix for TPM and affine mode
- Method 1
 - For a CB coded with TPM, only coefficient-related checks are performed for the internal TB boundaries, and the bS is set to 1 for the CB boundaries
- Method 2 (built on top of Method 1)
 - Motion-related checks are performed only for the edges coincided with 8x8 grids inside a CB coded with affine mode while the coefficient-related checks are kept unchanged

Over VTM6.0		RA					LDB				
		Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Under ALF-on	Method 1	-0.01%	0.01%	0.01%	100%	101%	0.01%	0.03%	0.08%	100%	101%
	Method 2	0.00%	0.01%	0.01%	100%	100%					
Under ALF-off	Method 1	0.01%	-0.01%	-0.02%	100%	100%	0.04%	0.02%	0.00%	100%	101%
	Method 2	0.01%	-0.01%	-0.01%	100%	99%					

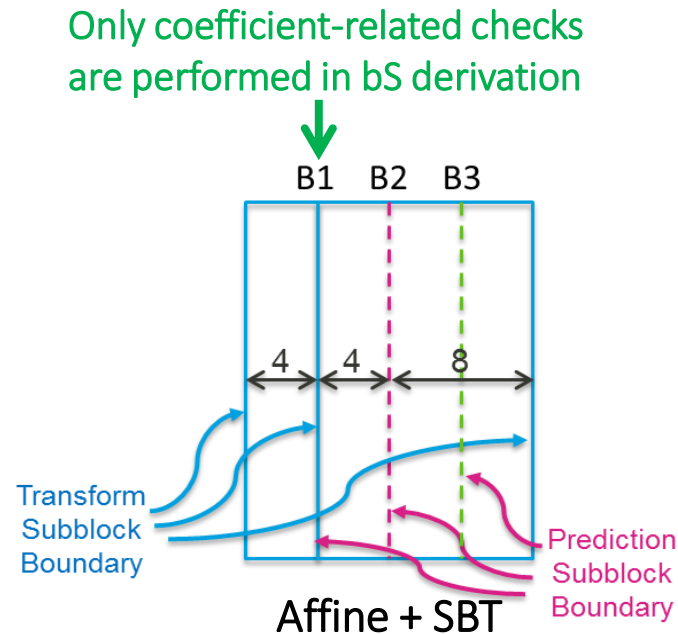
Method 1

- When calculating the luma bS for a CB coded with TPM, only coefficient-related checks are performed for the internal TB boundaries
- bS is set to 1 for the CB boundaries



Method 2

- Built on top of Method 1
- Motion-related checks are performed only for the edges coincided with 8x8 grids inside a CB coded with affine mode while the coefficient-related checks are kept unchanged



Detailed Results of Method 1

	Random Access Main 10									
	Over VTM6.0					Over VTM6.0 with ALF switch off				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	0.00%	-0.01%	0.00%	100%	100%	0.02%	0.01%	0.01%	100%	100%
Class A2	0.01%	0.04%	-0.02%	100%	100%	0.02%	-0.05%	0.02%	100%	100%
Class B	-0.02%	-0.03%	0.02%	100%	100%	0.00%	-0.01%	-0.02%	100%	100%
Class C	0.00%	0.06%	0.02%	101%	102%	0.02%	0.00%	-0.06%	100%	100%
Overall	-0.01%	0.01%	0.01%	100%	101%	0.01%	-0.01%	-0.02%	100%	100%
Class D	0.01%	-0.03%	-0.06%	101%	103%	-0.01%	0.00%	0.05%	100%	100%
Class F	0.01%	0.00%	-0.02%	101%	102%	0.00%	-0.04%	0.02%	100%	101%

	Low delay B Main10									
	Over VTM6.0					Over VTM6.0 with ALF switch off				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class B	0.01%	0.01%	0.02%	100%	101%	0.03%	-0.01%	0.00%	100%	100%
Class C	-0.01%	-0.16%	0.03%	100%	100%	0.01%	0.04%	0.00%	100%	101%
Class E	0.02%	0.32%	0.25%	100%	102%	0.13%	0.04%	-0.02%	100%	101%
Overall	0.01%	0.03%	0.08%	100%	101%	0.04%	0.02%	0.00%	100%	101%
Class D	0.02%	0.30%	0.05%	100%	100%	0.00%	0.09%	-0.18%	100%	102%
Class F	0.06%	-0.06%	0.54%	100%	100%	0.01%	0.20%	-0.31%	100%	100%

Detailed Results of Method 2

	Random Access Main 10									
	Over VTM6.0					Over VTM6.0 with ALF switch off				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	0.00%	-0.01%	0.01%	100%	100%	0.02%	0.01%	0.01%	100%	100%
Class A2	0.02%	0.03%	-0.02%	100%	100%	0.01%	-0.04%	0.03%	100%	100%
Class B	-0.02%	-0.04%	0.01%	100%	99%	0.00%	-0.01%	-0.02%	99%	99%
Class C	0.00%	0.06%	0.02%	100%	101%	0.02%	0.00%	-0.05%	100%	99%
Overall	0.00%	0.01%	0.01%	100%	100%	0.01%	-0.01%	-0.01%	100%	99%
Class D	0.00%	-0.03%	-0.05%	100%	103%	0.01%	-0.01%	-0.01%	100%	99%
Class F	0.01%	0.00%	-0.02%	100%	101%	0.00%	-0.04%	0.02%	100%	100%

	Low delay B Main10									
	Over VTM6.0					Over VTM6.0 with ALF switch off				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class B										
Class C	0.04%	-0.20%	-0.04%	100%	99%	0.00%	-0.01%	0.07%	100%	100%
Class E	0.01%	0.33%	0.28%	100%	99%	0.13%	0.05%	-0.02%	100%	100%
Overall										
Class D	0.02%	0.20%	0.00%	100%	98%	-0.01%	0.02%	-0.16%	100%	99%
Class F										

Summary

- Proposed two methods to combine JVET-P0086 and JVET-P0161 on deblocking bS fix for TPM and affine mode
- Suggested to adopt the proposed bS fix into VVC