

G769: Line buffer removal for CU split flag context model

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context modeling for split flag

- ❖ The current HM context model index for split_coding_unit_flag
 - $\text{ctxIdx} = \text{isSplit}(A) + \text{isSplit}(B)$
 - Needs CU depth or CU size of the left and the above neighbouring CUs
 - This requires line buffer to store the information
- ❖ Proposed context model index for split_coding_unit_flag
 - $\text{ctxIdx} = \text{isSplit}(A) + (\text{CU_Size} > 16)$
 - Needs CU depth or CU size of the left CU only
 - Instead of the information of the above CU, the current CU size is used
 - The number of context models is not changed
 - Therefore, line buffer is not needed
 - This condition for split flag coding is consistent for all types of CUs

Experimental result

❖ Experiments on HM4.0

	All Intra HE			Random Access HE			Low delay B HE		
	Y	U	V	Y	U	V	Y	U	V
Class A	-0.02%	-0.06%	-0.04%	-0.01%	-0.35%	-0.07%			
Class B	0.01%	-0.02%	-0.04%	0.02%	0.07%	-0.01%	0.05%	0.03%	-0.10%
Class C	0.00%	-0.04%	-0.09%	0.08%	-0.01%	0.09%	0.09%	0.00%	0.07%
Class D	0.02%	-0.04%	-0.04%	0.02%	0.11%	-0.01%	-0.03%	0.01%	-0.10%
Class E	0.05%	-0.03%	-0.04%				0.45%	-0.27%	0.73%
Overall	0.01%	-0.04%	-0.05%	0.03%	-0.04%	0.00%	0.11%	-0.04%	0.10%

Conclusion

- ❖ In this proposal, context modelling for split flag which doesn't require line buffer is introduced
- ❖ Performance loss is negligible except Class E of low delay B configuration
- ❖ The proposed context modelling is independent of other condition than the left and the current CU size

Thank you !