



TE3-4.3.1: Adaptive predictor compensation by using reconstructed BL texture

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Overall Summary

- An adaptive predictor compensation (APC) is proposed to use the reconstructed base layer (BL) texture to refine enhancement layer (EL) sample predictors
 - Applied on inter 2Nx2N CU with at least one non-zero residue
 - An APC_enable_flag is signaled to enable the refinement
 - $\text{Pred}_{\text{EL}}' = (\text{Pred}_{\text{EL}} + \text{Rec}_{\text{BL}}) \gg 1$
- Simulation results reportedly show 0.4-2.4% gains
- The encoding time is roughly increased by 4%, and the decoding time is roughly unchanged

	RA- 2x	RA- 1.5x	RA- SNR	LP- 2x	LP- 1.5x	LP- SNR	Enc. Time	Dec. Time
APC	-0.4%	-0.6%	-0.8%	-1.2%	-1.5%	-2.4%	104	100

Adaptive Predictor Compensation (APC)

- The BL reconstructed picture may predict better than the EL reference picture for regions that newly appear or have light changes
- Therefore, the BL reconstructed texture can be used to refine the EL motion compensated predictors
- Apply the APC on inter 2Nx2N CU that has at least one non-zero residue
 - Signal an APC_enable_flag to enable the refinement
- $\text{Pred}_{\text{EL}}' = (\text{Pred}_{\text{EL}} + \text{Rec}_{\text{BL}}) \gg 1$

Simulation Results

- Anchor: SMuC-0.1.1
- We provide three different APC encoding algorithms
 - For the medium complexity RDO, the results show 0.4-2.4% gains
 - The encoding time is roughly increased by 4%, and the decoding time is roughly unchanged

	RA-2x	RA-1.5x	RA-SNR	LP-2x	LP-1.5x	LP-SNR	Enc. Time	Dec. Time
Low complexity	-0.2%	-0.5%	-0.7%	-1.0%	-1.3%	-2.2%	100%	100%
Medium complexity	-0.4%	-0.6%	-0.8%	-1.2%	-1.5%	-2.4%	104%	100%
High complexity	-0.6%	-0.8%	-1.1%	-1.4%	-1.7%	-2.6%	122%	100%

- Thank TI for cross-verification (JCTVC-L0354)

Conclusions

- In this contribution, the reconstructed BL texture is used to refine the EL sample predictors
- Applied on inter 2Nx2N CU with at least one non-zero residue, an APC_enable_flag is signaled
- $\text{PredEL}' = (\text{PredEL} + \text{RecBL}) \gg 1$
- Simulation results reportedly 0.4-2.4% gains
- The encoding time is roughly increased by 4%, and the decoding time is roughly unchanged