



CREATING THE LIVING NETWORK™

JVET-N0235

Non-CE4: SMVD signalling

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Introduction

- The **sym_mvd_flag** is signalled only if the reference picture lists satisfy a certain condition.
- Cause undesirable parsing dependency:
In order for the decoder to perform the checking of these conditions, the reference picture lists of the current picture (i.e. list0 and list1) have to be constructed before CU parsing.
- In some cases, the encoder chooses not to use SMVD mode.

Proposal

1. Signal sps_smvd_enabled_flag in SPS
2. Signal smvd_enabled_flag in tile group header

seq_parameter_set_rbsp() {	Descriptor
...	
if(sps_sbt_enabled_flag)	
sps_sbt_max_size_64_flag	u(1)
sps_smvd_enabled_flag	u(1)
sps_affine_enabled_flag	u(1)
...	
}	

tile_group_header() {	Descriptor
...	
if(tile_group_type == B)	
mvd_l1_zero_flag	u(1)
if(sps_smvd_enabled_flag == 1 && mvd_l1_zero_flag != 0)	
smvd_enabled_flag	u(1)
if(cabac_init_present_flag)	
cabac_init_flag	u(1)
...	
}	

Proposal (cont.)

coding_unit(x0, y0, cbWidth, cbHeight, treeType) {	Descriptor
...	
if(inter_pred_idc[x0][y0] == PRED_BI && !inter_affine_flag[x0][y0] && RefIdxSymL0 > -1 && RefIdxSymL1 > -1 smvd_enabled_flag == 1)	
sym_mvd_flag[x0][y0]	ae(v)
if(inter_pred_idc[x0][y0] != PRED_L1) {	
...	
}	

Experimental results

Table 1: subblock size = 4x4

	Random Access Main 10				
	Over VTM 4.0				
	Y	U	V	EncT	DecT
Class A1	0.00%	0.00%	0.00%	100%	97%
Class A2	0.00%	0.00%	0.00%	101%	99%
Class B	0.00%	0.00%	0.00%	101%	98%
Class C	0.00%	0.00%	0.00%	99%	97%
Class E					
Overall	0.00%	0.00%	0.00%	100%	98%
Class D	0.01%	0.01%	0.01%	100%	99%
Class F	0.00%	0.00%	0.00%	99%	97%

Summary

- Propose switch in sequence and tile group level
 - One flag in SPS
 - One flag in tile group header
- Propose to adopt in VVC

Thank Huawei for cross-checking (JVET-N0769)