



REDEFINING MOBILITY



JCTVC-J0123

On tiles and wavefront parallel processing

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Motivation

- Currently co-existence of tiles and WPP is disallowed.
- Interest in jointly supporting tiles and WPP.
- Mandating tiles for UHD (JCTVC-J0088).

Proposal

- If tiles and WPP co-exists in a picture, then
 - Every tile starts a new slice.
 - Wavefronts cannot span across tiles



Proposed Syntax

- parallelism_idc: 3-bit field u(3)
- PPS

Bit 2: Entropy Slice

Bit 1: WPP

Bit 0: Tiles

pic_parameter_set_rbsp() {	Descriptor
.....	ue(v)
tiles_or_entropy_coding_sync_idc	u(2)
parallelism_idc	u(3)
if(tiles_or_entropy_coding_sync_idc == 1) {	
if((parallelism_idc & 0x1) == 1) {	
num_tile_columns_minus1	ue(v)
num_tile_rows_minus1	ue(v)
uniform_spacing_flag	u(1)
if(!uniform_spacing_flag) {	
for(i = 0; i < num_tile_columns_minus1; i++)	
column_width[i]	ue(v)
for(i = 0; i < num_tile_rows_minus1; i++)	
row_height[i]	ue(v)
}	
loop_filter_across_tiles_enabled_flag	u(1)
} else if(tiles_or_entropy_coding_sync_idc == 3)	
} else if(parallelism_idc == 4)	
cabac_independent_flag	u(1)
deblocking_filter_control_present_flag	u(1)
.....	

Syntax

■ Slice header syntax

slice_header() {	Descriptor
....	u(1)
if(tiles_or_entropy_coding_sync_idc == 1 tiles_or_entropy_coding_sync_idc == 2) {	
if(parallelism_idc & 0x3) {	
num_entry_point_offsets	ue(v)
if(num_entry_point_offsets > 0) {	
offset_len_minus1	ue(v)
for(i = 0; i < num_entry_point_offsets; i++)	
entry_point_offset[i]	u(v)
}	
}	
.....	

Conclusion

- If co-existence of tiles and WPP in a picture is to be allowed, we recommend adoption of this proposal.
- We thank M. Horowitz (eBrisk) for mental cross-checking (JCTVC-J0486).