

EXPLICIT SPECIFICATION OF BOUNDS ON SYNTAX ELEMENTS

JCTVC-J0335



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- **Various syntax elements in the current working draft that:**
 - Are missing explicit limits on their potential values
 - Have potential problems with the limits currently specified in the working draft text
- **List of these syntax elements along with proposed limits to facilitate discussion and agreement on bounding the allowable values for these elements**
 - Red text indicates proposed changes

Item	Syntax Element	Type	Min Value	Max Value	Proposed Min	Proposed Max	Notes
1	max_transform_hierarchy_depth_inter	ue(v)	0	??	0	Log2MaxCtbSize – Log2MinTrafoSize	
2	max_transform_hierarchy_depth_intra	ue(v)	0	??	0	Log2MaxCtbSize – Log2MinTrafoSize	
3	cb_qp_offset	se(v)	??	??	-12	12	Consistent with AVC
4	cr_qp_offset	se(v)	??	??	-12	12	Consistent with AVC

Item	Syntax Element	Type	Min Value	Max Value	Proposed Min	Proposed Max	Notes
5	column_width	ue(v)	??	??	1	Indirectly bound by requiring sum of column widths adds up to picture width	
6	row_height	ue(v)	??	??	1	Indirectly bound by requiring sum of row heights adds up to picture height	
7	beta_offset_div2	se(v)	??	??	-6	6	Consistent with AVC
8	tc_offset_div2	se(v)	??	??	-6	6	Consistent with AVC

Item	Syntax Element	Type	Min Value	Max Value	Proposed Min	Proposed Max	Notes
9	scaling_list_pred_matrix_id_delta	ue(v)	0	??	0	Indirectly bound by requiring RefMatrixID >= 0	
10	scaling_list_dc_coef_minus8	se(v)	??	??	-8	247	Prevents DC from going outside 0-255 range
11	scaling_list_delta_coef	se(v)	??	??	-128	127	Consistent with AVC
12	alf_start_second_filter	ue(v)	??	??	1	15	Suggest to remove. Unclear whether using only two filters needs special signaling

Item	Syntax Element	Type	Min Value	Max Value	Proposed Min	Proposed Max	Notes
13	five_minus_max_num_merge_cand	ue(v)	0	5?	0	4	5 implies zero merge candidates which is unclear
14	offset_len_minus1	ue(v)	??	??	0	31	
15	delta_idx_minus1	ue(v)	0	??	0	Indirectly bound by requiring RIdx >= 0	
16	abs_mvd_minus2	EGk(v)	0	??	0	Indirectly bound by requiring -both mvd_x and mvd_y be in the range $[-2^{15}, 2^{15}-1]$	Also need to bound motion vector (mvLX and mvLY) to range $[-2^{15}, 2^{15}-1]$