



AHG8: Disabling Reference Wraparound for Reference Picture Resampling

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Reference Picture Resampling (RPR)

- RPR supports adaptive resolution change within a coded video sequence.
- The current picture's resolution can be different from those of its reference pictures.

Reference Picture Wraparound

- According to the current VVC Specification

“**sps_ref_wraparound_offset_minus1** plus 1 specifies the offset used for computing the horizontal wrap-around position in units of MinCbSizeY luma samples. The value of **ref_wraparound_offset_minus1** shall be in the range of $(\text{CtbSizeY} / \text{MinCbSizeY}) + 1$ to $(\text{pic_width_in_luma_samples} / \text{MinCbSizeY}) - 1$, inclusive, where **pic_width_in_luma_samples** is the value of **pic_width_in_luma_samples** in any PPS that refers to the SPS.”
- **sps_ref_wraparound_offset_minus1** is a fixed number for all pictures referring to the sequence parameter set and is defined at the granularity of MinCbSizeY.
- Under the scenario of reference pictures with different resolutions from the current picture, a fixed wrap-around offset does not work.

Specification Draft Changes

seq_parameter_set_rbsp() {	Descriptor
.....	
ref_pic_resampling_enabled_flag	u(1)
.....	
if(!ref_pic_resampling_enabled_flag)	
sps_ref_wraparound_enabled_flag	u(1)
.....	
}	

sps_ref_wraparound_enabled_flag equal to 1 specifies that horizontal wrap-around motion compensation is applied in inter prediction. **sps_ref_wraparound_enabled_flag** equal to 0 specifies that horizontal wrap-around motion compensation is not applied. When the value of $(CtbSizeY / MinCbSizeY + 1)$ is less than or equal to $(pic_width_in_luma_samples / MinCbSizeY - 1)$, where **pic_width_in_luma_samples** is the value of **pic_width_in_luma_samples** in any PPS that refers to the SPS, the value of **sps_ref_wraparound_enabled_flag** shall be equal to 0.

When not present, the value of **sps_ref_wraparound_enabled_flag** is inferred to be equal to 0.



Thank you