



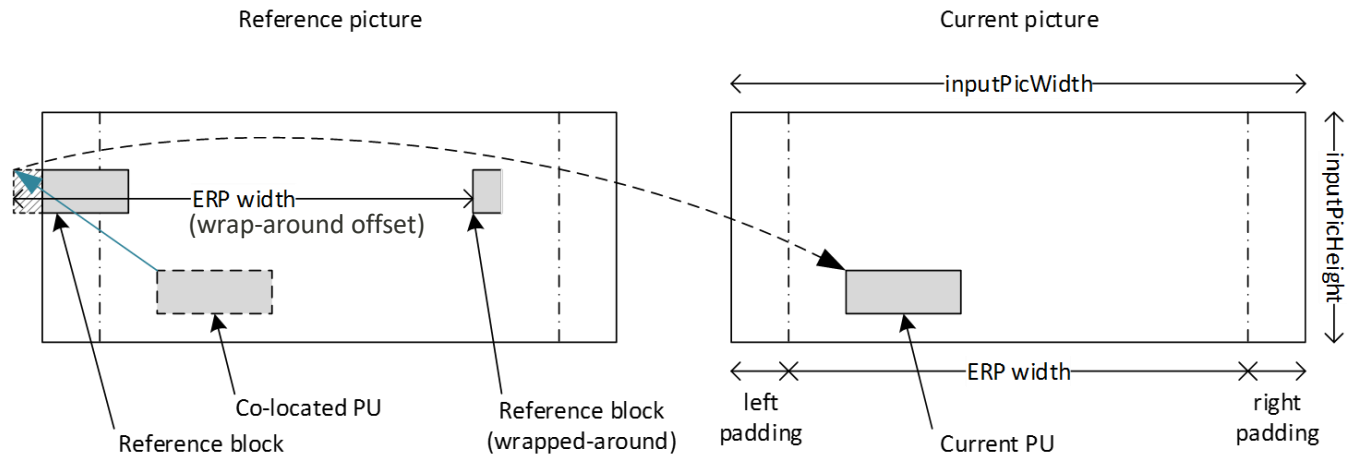
# AHG6/AHG9: Signalling wrap-around for subpictures

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# Introduction

- Wrap-around motion compensation
  - The horizontal wrap-around motion compensation can improve the visual quality of reconstructed 360 videos with the ERP format.

seq_parameter_set_rbsp( ) {	Descriptor
...	
<b>sps_ref_wraparound_enabled_flag</b>	u(1)
if( sps_ref_wraparound_enabled_flag )	
<b>sps_ref_wraparound_offset_minus1</b>	ue(v)
...	



# Introduction

- Subpicture
  - One of the main use cases is the viewport-dependent 360 streaming.



full 360 ERP

viewing direction

# Proposed Syntax

seq_parameter_set_rbsp( ) {	Descriptor
...	
<b>subpics_present_flag</b>	u(1)
if( subpics_present_flag ) {	
<b>sps_num_subpics_minus1</b>	u(8)
for( i = 0; i <= sps_num_subpics_minus1; i++ ) {	
<b>subpic_ctu_top_left_x[ i ]</b>	u(v)
<b>subpic_ctu_top_left_y[ i ]</b>	u(v)
<b>subpic_width_minus1[ i ]</b>	u(v)
<b>subpic_height_minus1[ i ]</b>	u(v)
<b>subpic_treated_as_pic_flag[ i ]</b>	u(1)
<b>loop_filter_across_subpic_enabled_flag[ i ]</b>	u(1)
if( subpic_treated_as_pic_flag[ i ] ) {	
<b>subpic_ref_wraparound_enabled_flag[ i ]</b>	u(1)
if( subpic_ref_wraparound_enabled_flag[ i ] ) {	
<b>subpic_ref_wraparound_horizontal_flag[ i ]</b>	u(1)
<b>subpic_ref_wraparound_offset_minus1[ i ]</b>	ue(v)
}	
}	
}	
}	
...	

# Wrap-around Direction



vertical wrap-around

**Thank you!**