



# AHG6/AHG9: Signalling guard band type for generalized cubemap projection

Ya-Hsuan Lee, Jian-Liang Lin, Ying-Jui Chen,  
Chi-Cheng Ju (MediaTek)

# Introduction

- Generalized cubemap projection SEI message
  - packing type: 1x6, 2x3, 3x2, 6x1, or hemisphere cubemap(1x5 & 5x1)
  - mapping function type: CMP, EAC, or others
  - guard band
    - guard band size
    - A flag indicates boundary guard band enabling

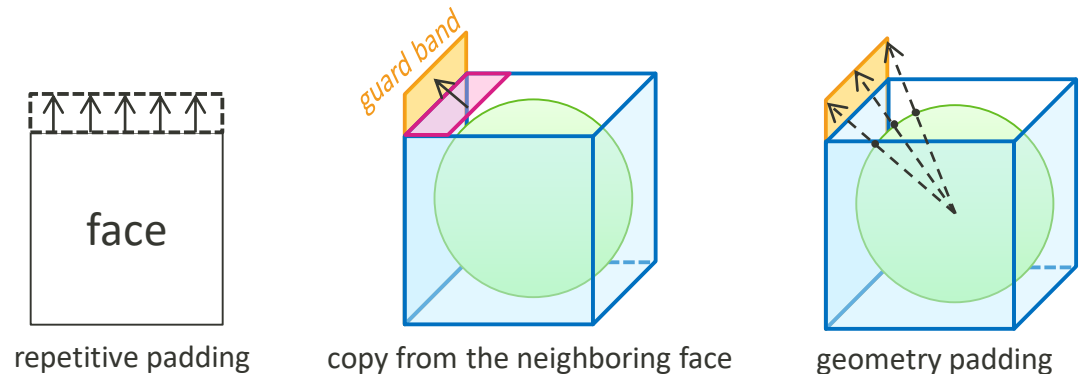


- The ERP and RWP SEI messages contain **guard band type** signaling

# Proposed Changes

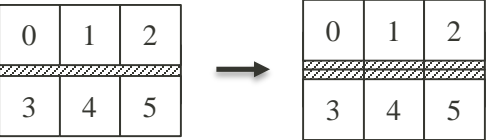
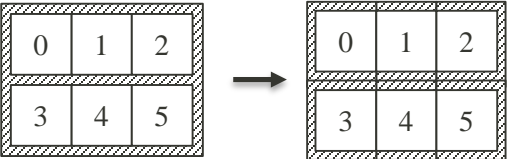

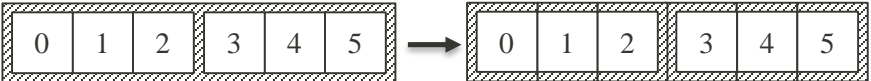
- Add `gcmp_guard_band_type` to indicate the type of the guard bands as that in the ERP and RWP SEI messages:
  - 0: unspecified
  - 1: repetitive padding
  - 2: copy from the neighboring face
  - 3: geometry padding
  - > 3: reserved
- Change the name `gcmp_guard_band_boundary_type` to `gcmp_guard_band_boundary_enabled_flag`

generalized_cubemap_projection( payloadSize ) {	Descriptor
<b>gcmp_cancel_flag</b>	u(1)
if( !gcmp_cancel_flag ) {	
<b>gcmp_persistence_flag</b>	u(1)
...	
<b>gcmp_guard_band_flag</b>	u(1)
if( gcmp_guard_band_flag ) {	
<b>gcmp_guard_band_type</b>	<b>u(3)</b>
<b>gcmp_guard_band_boundary_type_enabled_flag</b>	u(1)
<b>gcmp_guard_band_samples_minus1</b>	u(4)
}	
}	
}	



# Proposed Changes

- The guard band belongs to the only neighboring face.

cmp_packing_type	cmp_guard_band_boundary_enabled_flag	Location of guard bands
2	0	
2	1	
3	0	
3	1	

# Summary

- Propose to signal the guard band type in the generalized cubemap SEI message
- Modifications for specifying which face the guard band belongs to
- Change the name of gcmp\_guard\_band\_boundary\_type to gcmp\_guard\_band\_boundary\_enabled\_flag

generalized_cubemap_projection( payloadSize ) {	Descriptor
gcmp_cancel_flag	u(1)
if( !gcmp_cancel_flag ) {	
gcmp_persistence_flag	u(1)
...	
gcmp_guard_band_flag	u(1)
if( gcmp_guard_band_flag ) {	
gcmp_guard_band_type	u(3)
gcmp_guard_band_boundary_type_enabled_flag	u(1)
gcmp_guard_band_samples_minus1	u(4)
}	
}	
}	

**Thank you!**