

# JCTVC-H0174

## Results on CE8.e.2

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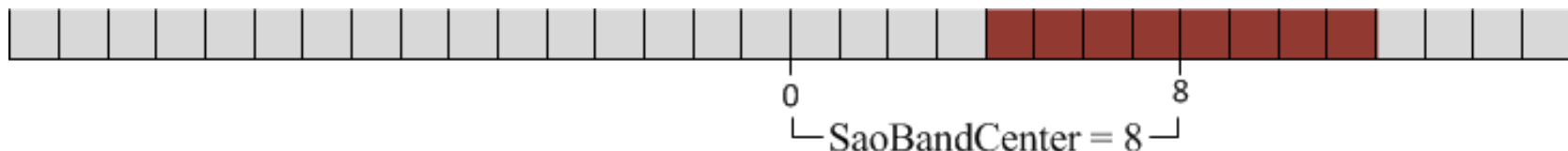
# Proposal overview

- 3 proposed Band Offsets:

Name	Band Offsets	Pixel values per class (8-bits sequences)	Nb offsets
BO_8o_1		8	8
BO_8o_2		4	8
BO_8o_3		2	8

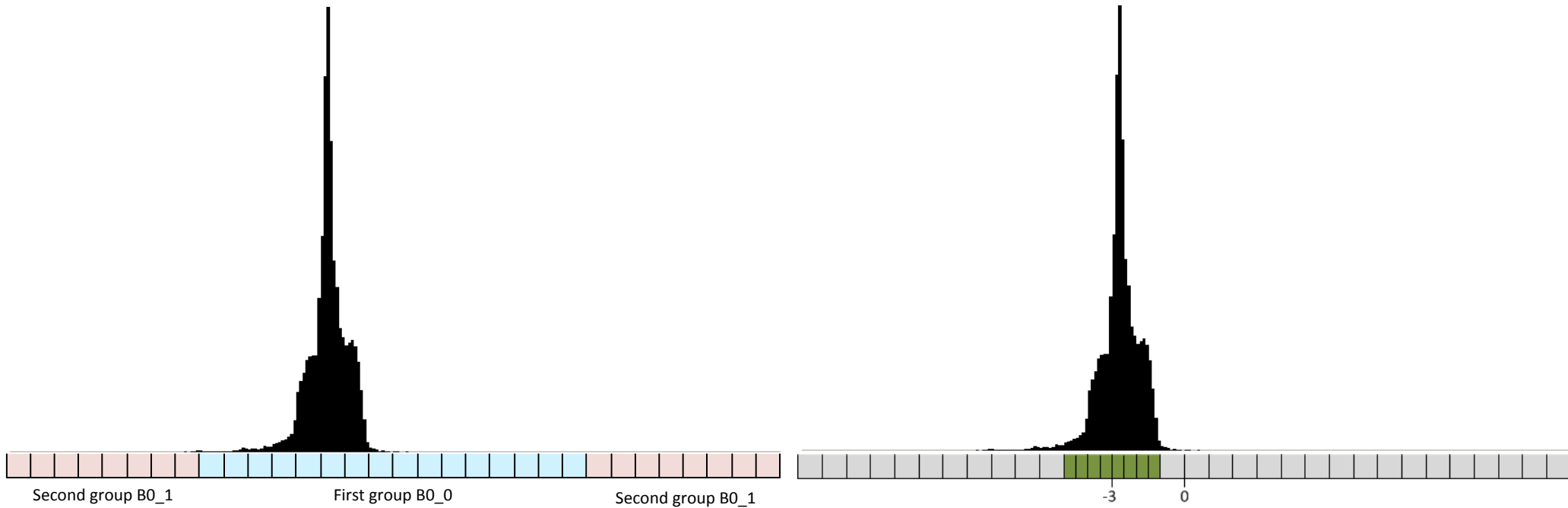
- Signaling of the center of each Band Offset:

- The center of pixel value of each proposed Band Offsets is transmitted. This center is coded (on 5 bits) by considering a subdivision of the intensity interval into 32 ranges








# Proposal overview

- **Flexible Band offset classifications:**
  - In order to be more adaptive to the pixel values repartition.



# CE8.e.2 experiements

- 2 experiments conducted

	HM5.0	Exp A	Exp B
<b>BO_0</b> 	on		
<b>BO_1</b> 	on		
<b>BO_8o_1</b> 		on	on
<b>BO_8o_2</b> 		on	
<b>BO_8o_3</b> 		on	

# Memory size reduction

- Worst case for 256 SAO blocks:

	HM5.0	Exp A	Exp B
Number of blocks	256	256	256
Bits for “SAO type”	3	3	3
Bits per offset	6	6	6
Max number of offsets	16	<b>8</b>	<b>8</b>
Bits for center of BO	N. A.	5	5
<b>Total bits</b>	25344	14336	14336
<b>% memory size reduction</b>	--	<b>43%</b>	<b>43%</b>

# Objective results

- Exp A:

	Y	U	V		ENC	DEC
AIHE	0.1%	-1.2%	-1.4%		100%	100%
RAHE	0.0%	-1.5%	-1.6%		100%	100%
RAHE10	0.0%	-1.7%	-1.9%		100%	102%
LBHE	-0.1%	-2.6%	-2.8%		100%	99%
Average	0.0%	-1.8%	-1.9%		100%	100%

- Exp B:

	Y	U	V		ENC	DEC
AIHE	0.0%	-0.2%	-0.3%		99%	99%
RAHE	0.0%	-0.4%	-0.3%		100%	99%
RAHE10	0.0%	-0.5%	-0.5%		100%	99%
LBHE	0.0%	-0.5%	-0.4%		100%	99%
Average	0.0%	-0.4%	-0.4%		100%	99%

# Subjective results

- Exp A and B: Often similar to HM5.0 Anchor
- Exp A: Can improve visual quality

# Conclusion



- Two experiments conducted for CE8.e.2
  - Exp A: 3 Band Offsets
  - Exp B: 1 Band Offset
- Flexible Band classification
  - Match the statistics of the content
- Memory size reduction: 43%
- Results:
  - Gain for Chroma component
  - Can improve Visual quality

**Propose to adopt  
Exp A**





# Annex: Subjective Viewing Examples



# Subjective results EXP A

HM5.0	Exp A
	
Example 1: SlideShow_1280x720 QP 37 YUV frame 108 RAHE	

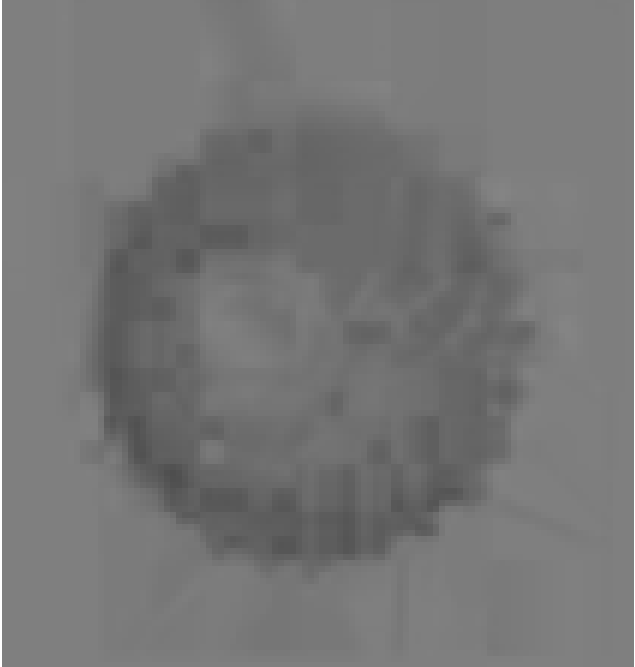
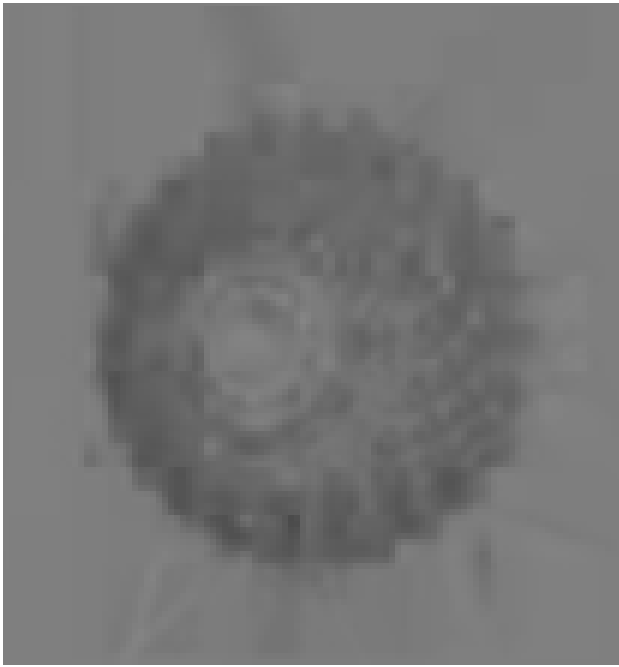
# Subjective results EXP A

HM5.0	Exp A
	
Example 2: BasketballDrill_832x480 QP 37 YUV frame 7 RAHE	

# Subjective results EXP A

HM5.0	Exp A
	
Example 3: BasketballDrill_832x480 QP 37 YUV frame 31 LDHE	

# Subjective results EXP A

HM5.0	Exp A
	
Example 4: SlideShow_1280x720 QP 37 V frame 399 LDHE	