

The logo consists of the word "MEDIATEK" in white, uppercase, sans-serif font, centered within an orange parallelogram shape that is wider than it is tall.

# Block Vector Prediction for Intra Block Copying

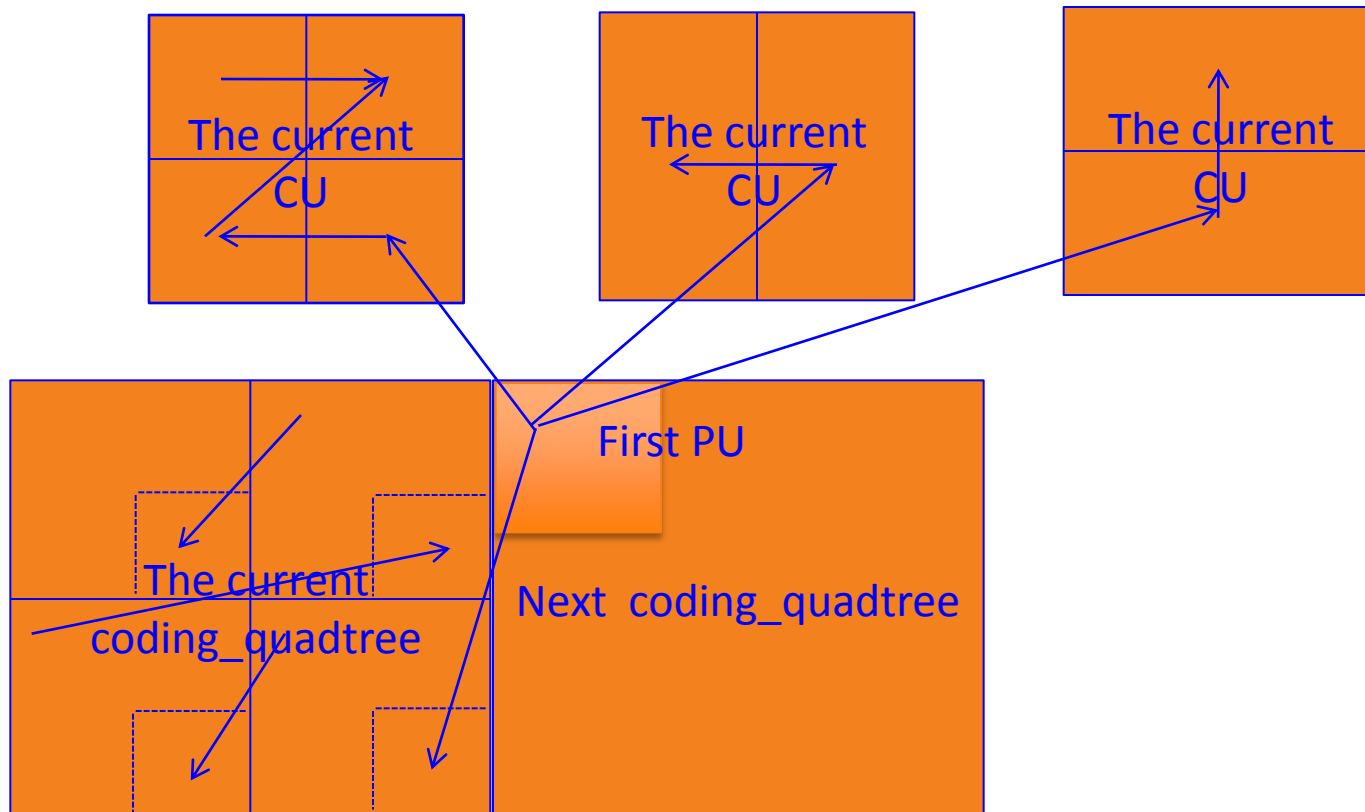
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17<sup>th</sup> JCT Meeting in Valencia  
27 March – 4 April, 2014

# Outline

- Background
- Problems
- Proposed Method
- Experimental Results

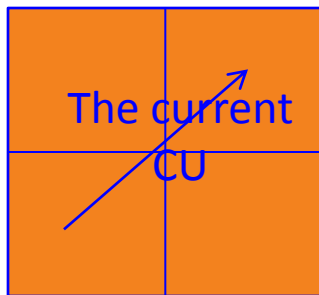
# Background

- Current BVP
  - Among PUs

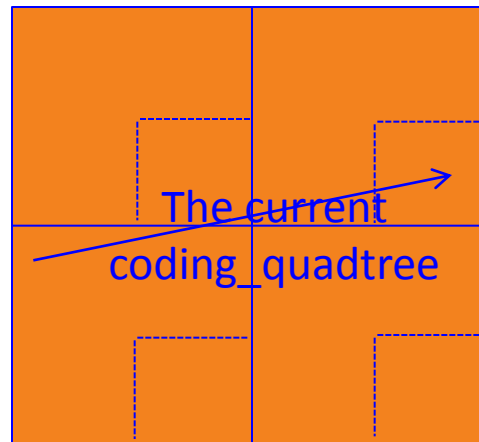


# Problems

- The CU or PU with index=2 has an BVP from the one with index=1.
  - They are not neighboring blocks.



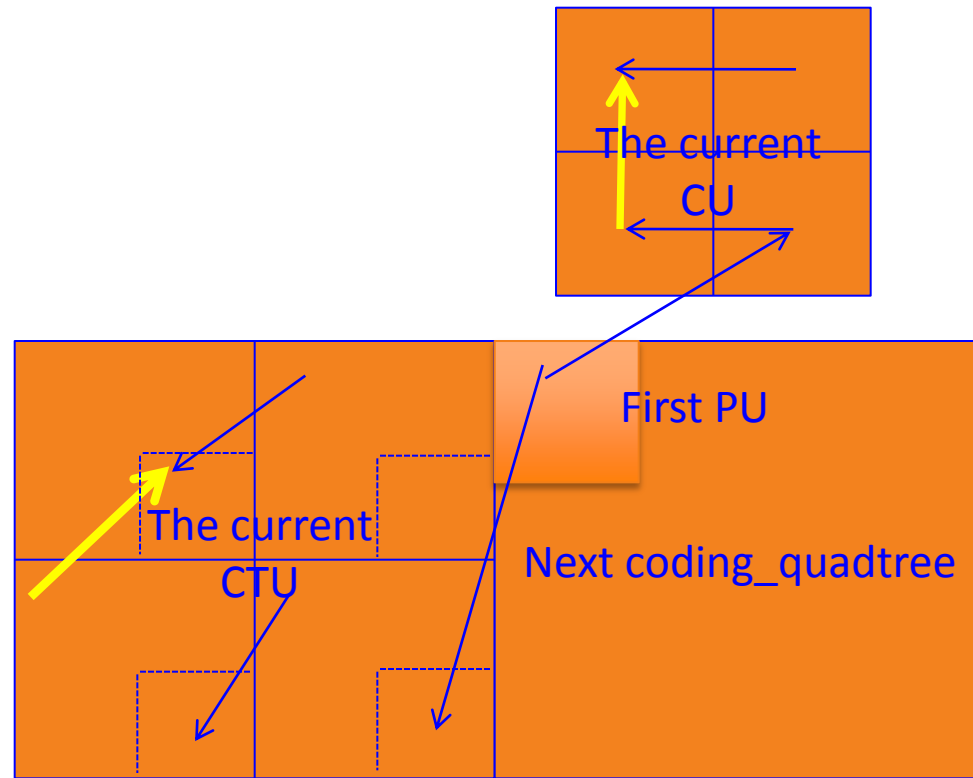
An IBC CU with  
N×N partitioning



Bottom-left IBC CU (index = 2), BVP from the last  
PU in the upper-right IBC CU (index = 1)

# Proposed Method

- Proposed Modification
  - Among PUs (IBC CU with N×N partitioning)
  - Among CUs



# Proposed Method

- Complexity
  - No additional buffers are required
  - The modification is not to cover the last BCMV after decoding the CU or PU with index=1

# Experimental Results AHG8\_CTC

	All Intra Main-tier			All Intra High-tier			All Intra Super-High-tier		
	Y	U	V	Y	U	V	Y	U	V
Class F	-0.1%	0.0%	-0.1%	-0.1%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%
Class B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RGB 4:4:4 SC	-0.1%	-0.2%	-0.2%	-0.1%	-0.2%	-0.2%	-0.1%	-0.2%	-0.2%
RGB 4:4:4 Animation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
YCbCr 4:4:4 SC	-0.2%	-0.2%	-0.3%	-0.2%	-0.1%	-0.2%	-0.2%	-0.1%	-0.2%
YCbCr 4:4:4 Animation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RangeExt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RGB 4:4:4 SC (Optional)	-0.1%	-0.2%	-0.2%	-0.1%	-0.2%	-0.3%	-0.2%	-0.1%	-0.2%
YCbCr 4:4:4 SC (Optional)	-0.3%	-0.2%	-0.2%	-0.3%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
Enc Time[%]	100%			100%			100%		
Dec Time[%]	99%			100%			100%		
	Random Access Main-tier			Random Access High-tier					
	Y	U	V	Y	U	V			
Class F	-0.1%	0.1%	0.1%	-0.1%	0.0%	0.0%			
Class B	0.0%	0.1%	0.0%	-0.1%	0.0%	0.0%			
RGB 4:4:4 SC	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%			
RGB 4:4:4 Animation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
YCbCr 4:4:4 SC	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%			
YCbCr 4:4:4 Animation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
RangeExt	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%			
RGB 4:4:4 SC (Optional)	-0.1%	-0.1%	-0.1%	0.0%	0.0%	-0.1%			
YCbCr 4:4:4 SC (Optional)	-0.2%	-0.1%	-0.1%	-0.2%	-0.3%	-0.3%			
Enc Time[%]	100%			100%					
Dec Time[%]	101%			101%					
	Low delay B Main-tier			Low delay B High-tier					
	Y	U	V	Y	U	V			
Class F	-0.1%	0.2%	0.2%	0.0%	-0.1%	0.1%			
Class B	0.0%	-0.4%	0.0%	0.0%	-0.2%	0.0%			
RGB 4:4:4 SC	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%			
RGB 4:4:4 Animation	-0.1%	0.0%	-0.1%	-0.1%	0.0%	0.0%			
YCbCr 4:4:4 SC	-0.1%	-0.2%	-0.3%	-0.2%	-0.3%	-0.4%			
YCbCr 4:4:4 Animation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
RangeExt	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%			
RGB 4:4:4 SC (Optional)	-1.7%	-1.8%	-1.8%	-1.1%	-1.0%	-1.1%			
YCbCr 4:4:4 SC (Optional)	-0.3%	-0.3%	-0.2%	-0.6%	-0.6%	-0.4%			
Enc Time[%]	100%			100%					
Dec Time[%]	100%			100%					

# Experimental Results SCC\_CFP

	All Intra		
	Y	U	V
RGB, text & graphics with motion, 1080p	-0.2%	-0.2%	-0.2%
RGB, text & graphics with motion, 720p	-0.1%	-0.2%	-0.2%
RGB, mixed content, 1440p	-0.1%	-0.1%	-0.1%
RGB, mixed content, 1080p	-0.1%	-0.1%	-0.1%
RGB, Animation, 720p	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	-0.2%	-0.2%	-0.2%
YUV, text & graphics with motion, 720p	-0.1%	-0.2%	-0.3%
YUV, mixed content, 1440p	-0.1%	-0.1%	-0.1%
YUV, mixed content, 1080p	-0.1%	-0.1%	-0.1%
YUV, Animation, 720p	0.0%	0.0%	0.0%
Enc Time[%]	100%		
Dec Time[%]	98%		

	Random Access		
	Y	U	V
RGB, text & graphics with motion, 1080p	-0.1%	-0.1%	-0.1%
RGB, text & graphics with motion, 720p	0.0%	0.0%	0.0%
RGB, mixed content, 1440p	-0.1%	0.0%	-0.1%
RGB, mixed content, 1080p	0.0%	0.0%	0.0%
RGB, Animation, 720p	0.0%	-0.1%	0.0%
YUV, text & graphics with motion, 1080p	-0.2%	-0.2%	-0.2%
YUV, text & graphics with motion, 720p	-0.1%	-0.2%	-0.1%
YUV, mixed content, 1440p	-0.2%	-0.1%	0.1%
YUV, mixed content, 1080p	-0.2%	-0.2%	-0.2%
YUV, Animation, 720p	0.1%	-0.1%	-0.2%
Enc Time[%]	99%		
Dec Time[%]	98%		

	Low delay B		
	Y	U	V
RGB, text & graphics with motion, 1080p	-0.1%	-0.1%	-0.1%
RGB, text & graphics with motion, 720p	0.2%	0.0%	0.0%
RGB, mixed content, 1440p	-0.1%	-0.2%	-0.1%
RGB, mixed content, 1080p	-0.1%	-0.1%	-0.1%
RGB, Animation, 720p	-0.1%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	0.2%	0.2%	0.3%
YUV, text & graphics with motion, 720p	-0.1%	-0.2%	-0.5%
YUV, mixed content, 1440p	-0.1%	-0.5%	0.1%
YUV, mixed content, 1080p	0.0%	-0.1%	0.1%
YUV, Animation, 720p	0.0%	-0.1%	0.1%
Enc Time[%]	100%		
Dec Time[%]	96%		