

# Intra prediction mode coding based on direction difference

**JCTVC-F339**

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# 1

## 1. Overview

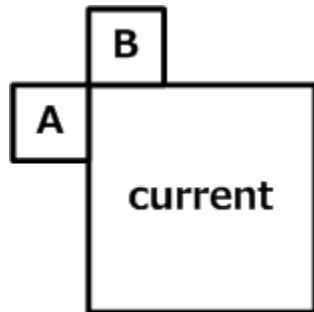
# Overview

- Proposed technique
  - Intra prediction mode coding based on direction difference
- Algorithm
  - Plural MPM sets are defined
  - current MPM set is selected by direction difference
- Crosscheck
  - JCTVC-F432 by MediaTek
- Simulation results
  - Overall BD-rate gain 0.2 % in IHE, 0.1 % in ILC

# 2

## **2. Algorithm**

# Selection of MPM set

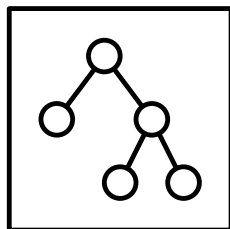
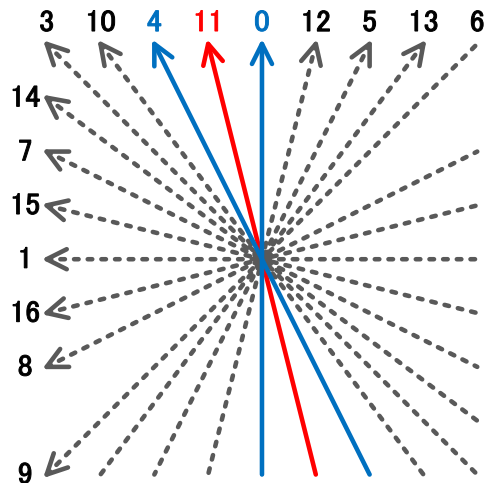


- Select MPM set by direction difference of modeA and modeB

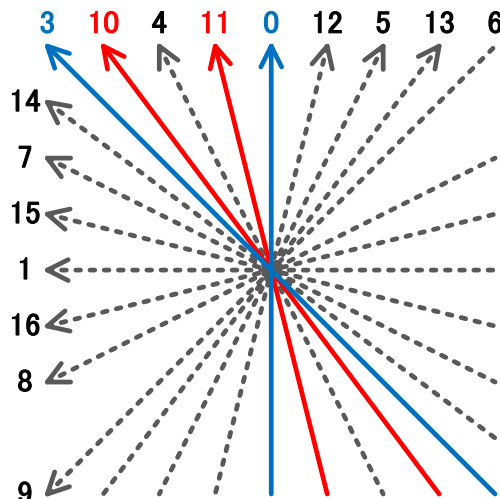
diffDir	4x4 PUs	8x8, - 32x32 PUs
-2 (DC x DC)	MPM1 (not changed from HM3.0)	
-1 (DC x nonDC)	MPM2 (not changed from HM3.0)	
0	MPM1 (not changed from HM3.0)	
1	MPM2 (not changed from HM3.0)	
2	MPM3	
$\geq 3$	MPM5	MPM7

# MPM candidates and coding trees

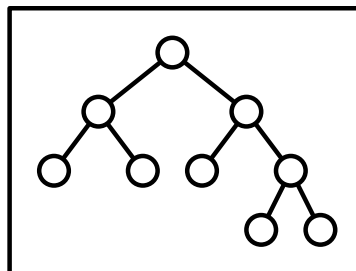
**MPM3**



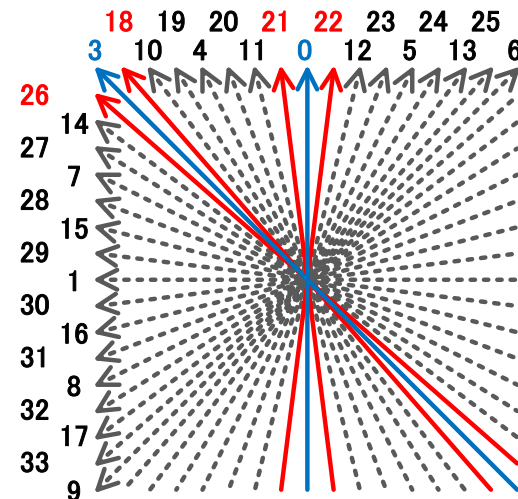
**MPM5**



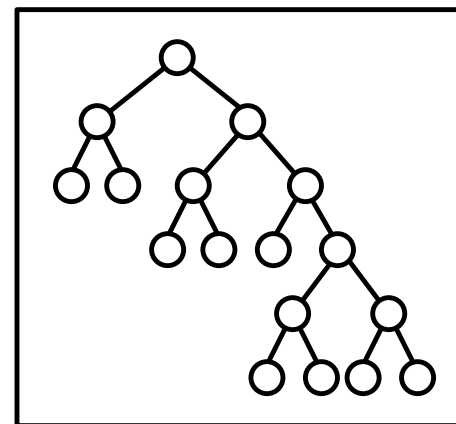
DC



**MPM7**



DC



# 3

## 3. Experiments

# Simulation results

- Overall BD-rate **gain 0.2 % for IHE, 0.1 % for ILC**

	All Intra HE			All Intra LC		
	Y	U	V	Y	U	V
Class A	-0.2	0.0	0.1	-0.1	0.0	0.0
Class B	-0.2	0.0	0.0	0.0	0.1	0.1
Class C	-0.2	-0.1	-0.1	-0.1	0.1	0.0
Class D	-0.2	-0.1	-0.1	-0.1	0.0	0.0
Class E	-0.3	0.1	0.1	0.0	0.1	0.1
<b>Overall</b>	<b>-0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>-0.1</b>	<b>0.0</b>	<b>0.0</b>
Enc Time[%]	107%			113%		
Dec Time[%]	102%			101%		



# 4

## 4. Conclusion

# Conclusion

- Suggestion
  - Further investigated in CE
  
- Future work
  - Application for remainder bits coding

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**HOLDINGS**

The logo graphic consists of two parallel, curved, grey swooshes that originate from the right side of the word 'HOLDINGS' and extend upwards and to the right, ending near the top right of the frame.