

## JVET-P0641:

# Non-CE3: Combination of JVET-P0596 and JVET-P0531 on removal of 2xN chroma intra blocks

L. Pham Van, G. Van der Auwera, V. Seregin, H. Huang,  
A. K. Ramasubramonian, M. Karczewicz (Qualcomm)  
Z. Deng, L. Zhang, K. Zhang, H. Liu, Y. Wang (Bytedance)



# Content

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# Problem and related works

- Problem:

2xN intra chroma blocks lead to inefficient hardware implementation

- Related works in O meeting

2x2/2x4/4x2 chroma intra blocks were removed using local dual tree (JVET-O0050)

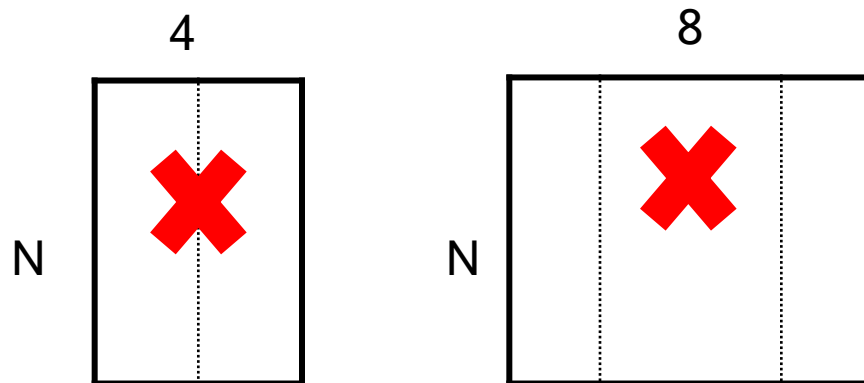
1xN/2xN intra luma resulting from ISP split were removed

JVET-O0398 proposed to remove 2xN chroma intra blocks in dual tree

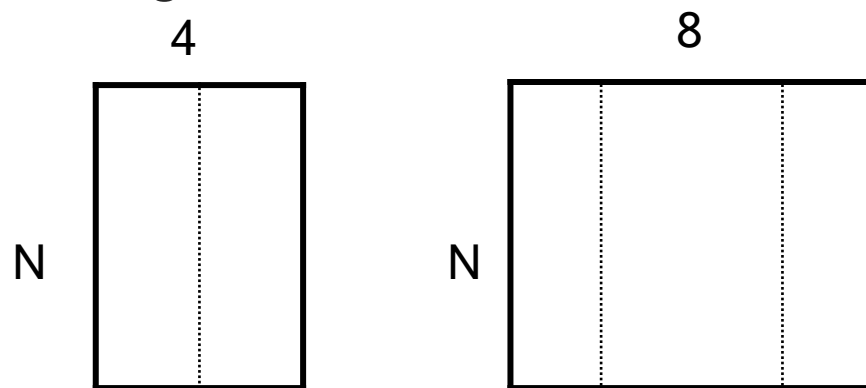
- **O meeting note suggestion:** Further study removing 2xN chroma intra in single tree

# Proposal: remove 2xN chroma intra blocks

- Dual tree: Split constraint (JVET-O0398):



- Single tree: Extending local dual tree:



→ Local dual tree:  
Chroma no split for intra SCIPU

- 4xN CIIP blocks: Chroma components use only inter prediction

# Experimental results

*Thanks LGE for cross-check (JVET-P0778)*

- Remove 2x8, 2x16, and 2x32 chroma intra blocks
- Dual tree OFF

Cfg.	Y	U	V	EncT	DecT
AI	-0.02%	-0.18%	-0.22%	97%	100%

- CTC configuration

Cfg.	Y	U	V	EncT	DecT
AI	0.01%	0.35%	0.37%	99%	100%
RA	0.11%	0.50%	0.49%	100%	100%

# Additional results in JVET-P0596

*Thanks Interdigital for cross-check!*

- Remove 2x8, 2x16, and 2x32 chroma intra blocks for CIIP blocks

- Method 1: Disable CIIP for 4xN blocks

Cfg.	Y	U	V
RA	0.02%	0.09%	0.02%
LDB	0.02%	-0.05%	-0.34%

- Method 2: Chroma components of 4xN CIIP blocks use only inter prediction

Cfg.	Y	U	V
RA	0.01%	0.08%	0.00%
LDB	-0.04%	-0.13%	-0.18%

# Additional results in JVET-P0531

## *Cross-checker document JVET-P0805*

- Test 1: Remove 2x8

Disable CIIP for 4x16

Cfg.	Y	U	V
AI	0.00%	0.16%	0.23%
RA	0.08%	0.27%	0.31%

- Test 2 : Disable 2x8, 2x16 and 2x32

Disable CIIP for 4x16, 4x32 and 4x64

Cfg.	Y	U	V
AI	0.01%	0.35%	0.37%
RA	0.12%	0.50%	0.49%

- Test 3 : Disable 2x16 and 2x32

Disable CIIP for 4x32 and 4x64

Cfg.	Y	U	V
AI	0.00%	0.15%	0.12%
RA	0.05%	0.20%	0.15%

# Conclusions

- 2xN chroma intra blocks are completely removed **in dual tree and single tree**
- It is recommended to adopt JVET-P0641 into the next version of VTM



*Thank you!*