# AhG10: Palette predictor stuffing

JCTVC-Q0063

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Current Palette prediction (AhG10 software)

■ Current palette prediction:
 ● Last palette CU (JCTVC-P0114)
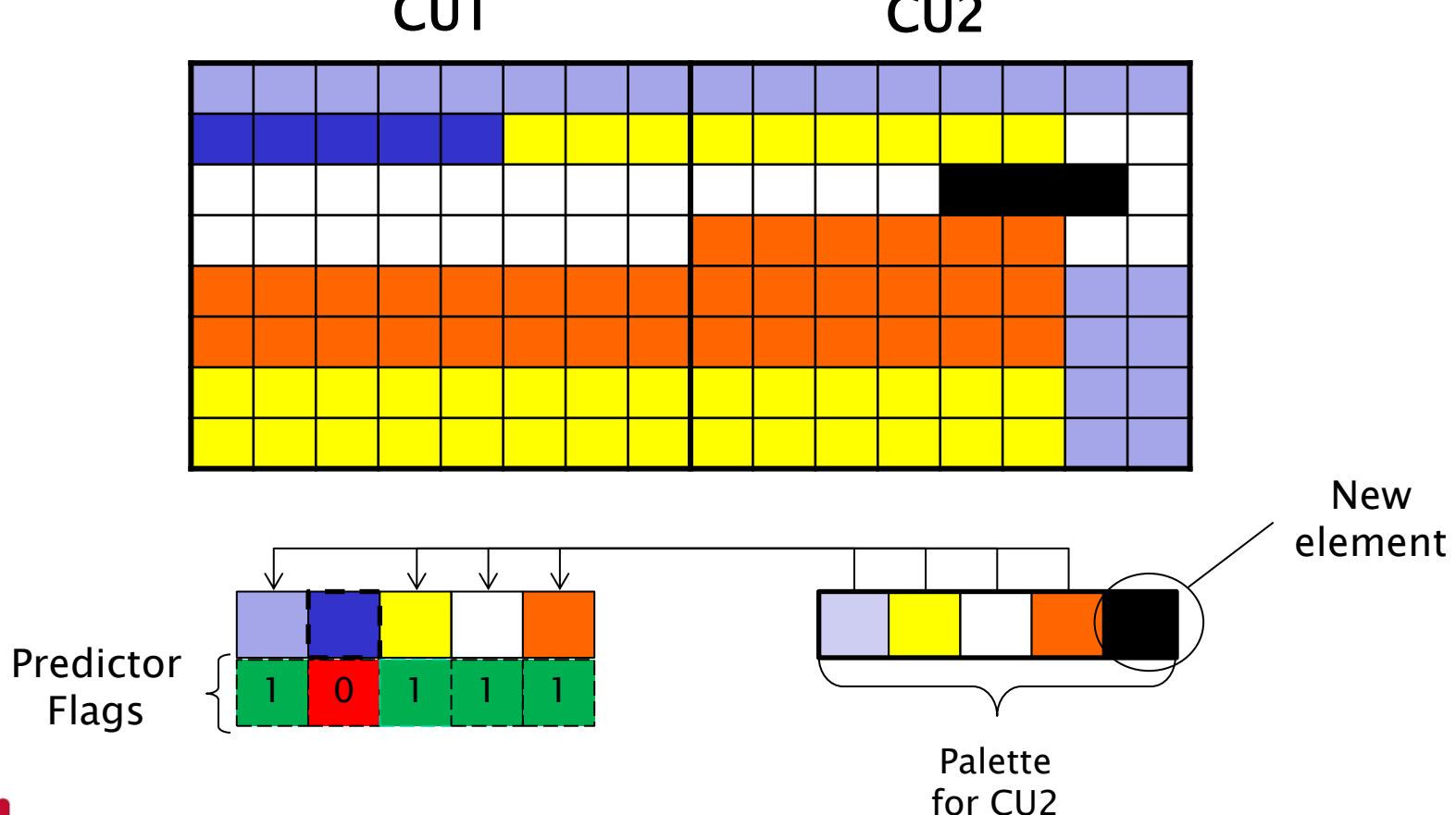
Palette Stuffing: principle
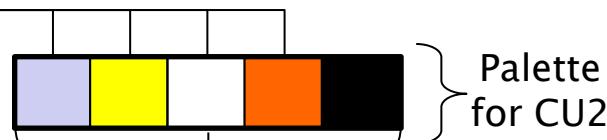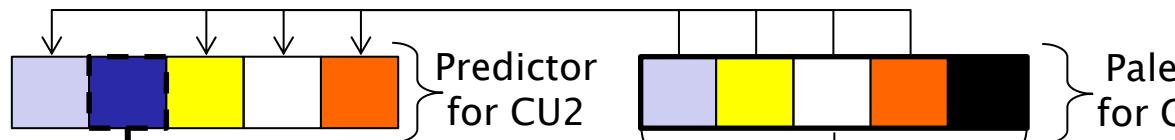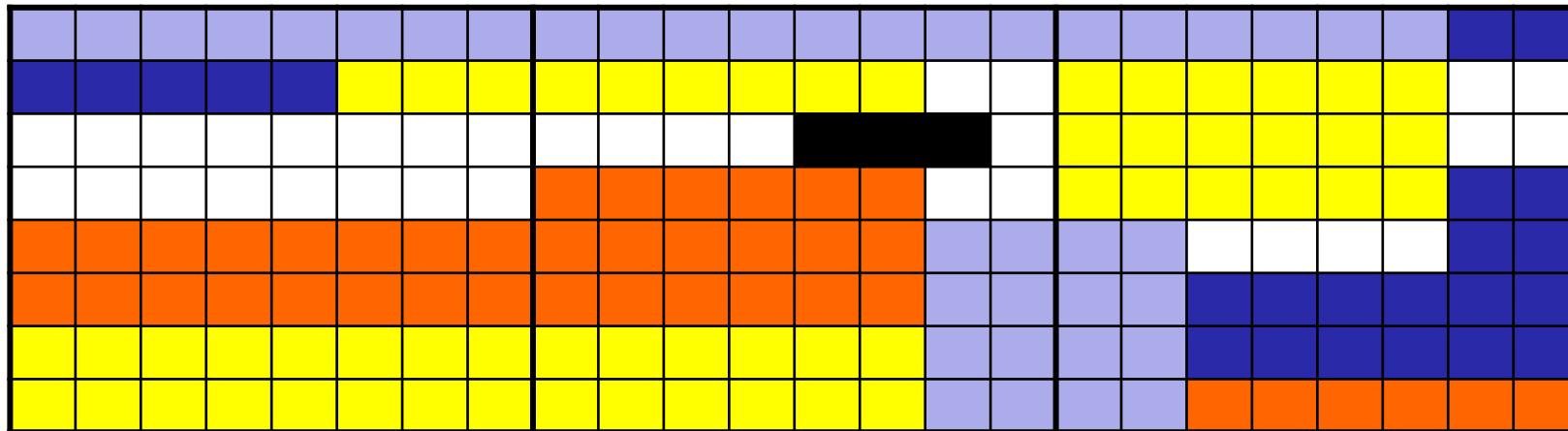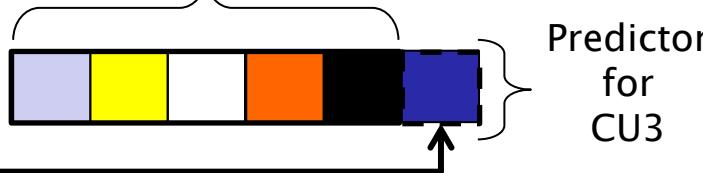
Use the non selected elements of previous palette predictors

Index coding

- Limit the impact of large amount of flags by using "end-of-prediction" flags

  - end-of-prediction flags are inserted after the 4th flag, and then every 8 flags, starting on the 16th flag.

Flags not needed

| 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

"end-of-prediction" flags
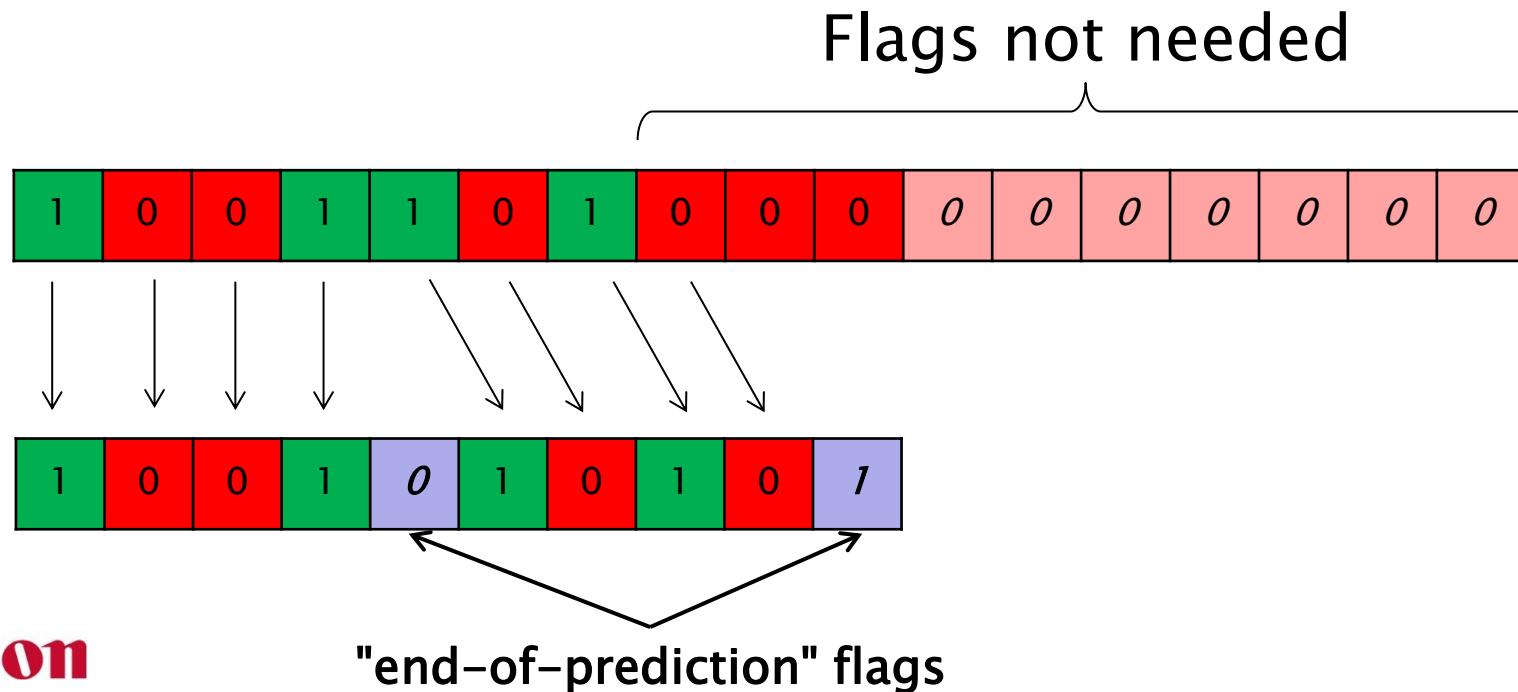
Experimental results: vs JCTVC–Q0094

■ Anchor: AhG10 software (JCTVC–Q0094)
■ Test: AhG10 software + proposal

	All Intra Main-tier			All Intra High-tier			All Intra Super-High-tier		
	Y	U	V	Y	U	V	Y	U	V
Class F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
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	-3.1%	-2.9%	-3.0%	-3.6%	-3.4%	-3.4%	-3.9%	-3.6%	-3.6%
RGB 4:4:4 Animation	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
YCbCr 4:4:4 SC	-2.3%	-2.6%	-2.8%	-3.0%	-3.2%	-3.2%	-3.5%	-3.4%	-3.6%
YCbCr 4:4:4 Animation	0.1%	-0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
RangeExt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	-0.2%	0.1%
RGB 4:4:4 SC (Optional)	-4.0%	-3.9%	-4.0%	-4.7%	-4.4%	-4.5%	-5.5%	-5.7%	-5.8%
YCbCr 4:4:4 SC (Optional)	-4.3%	-4.7%	-4.7%	-5.3%	-5.1%	-5.2%	-5.9%	-5.8%	-5.9%
Enc Time[%]	101%			101%			100%		
Dec Time[%]	102%			102%			102%		

■ Large gain for SC sequences

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Conclusion

- Large coding efficiency improvement by stuffing the palette predictors
- Small impact on memory complexity compared to the current AhG10 software.
- Recommend to consider this modification for the Palette Mode.

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