



Non-RCE4: Inter-component major color table sharing

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Presented by Yu-Wen Huang
16th JCT-VC Meeting in San José
9–17 Jan. 2014

Overall Summary

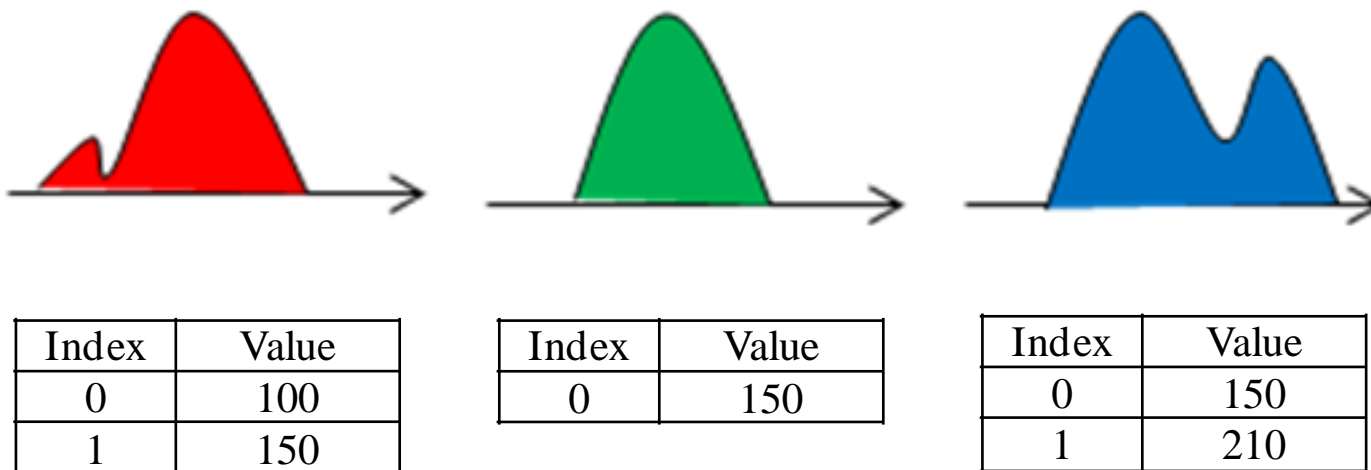
- In RCE4 Test1 (JCTVC-P0108), each color component of a CU has its own major color table.
- In this proposal, a major color table shared by three color components of a CU is allowed.
- Results

Lossy coding BD-rate	AI-MT	RA-MT	LB-MT
SC RGB 444 sequences	-1.2%	-1.0%	-1.1%

- For further study in a CE

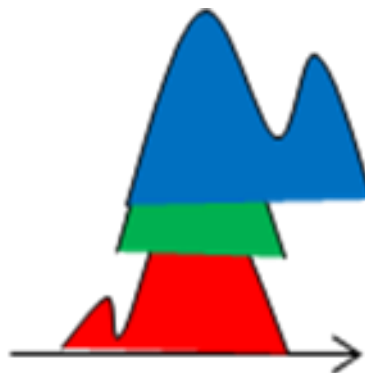
Non-cross-component Color Table

- In RCE4 Test1 (JCTVC-P0108), each color component sends an individual color table without reducing any color table redundancy between color components.
- Example



Proposed Method

- Add an option at CU level to signal only one major color table shared by all color components
- Example



Index	Value
0	100
1	150
2	210

Lossy Coding Results

- Anchor: RCE4 Test1
- 1.2% / 1.0% / 1.1% BD-rate savings for SC RGB 444 sequences under AI-MT / RA-MT / LB-MT
- Thank Microsoft for cross-verification

Y BD-rate	AI-MT	AI-HT	AI-SHT	RA-MT	RA-HT	LB-MT	LB-HT
Class F	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%
Class B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%
SC RGB 444	-1.2%	-0.7%	-0.4%	-1.0%	-0.7%	-1.1%	-0.9%
Animation RGB 444	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SC YUV 444	0.0%	0.0%	0.0%	-0.2%	0.1%	0.0%	0.0%
Animation YUV 444	0.0%	0.0%	0.0%	-0.1%	0.0%	-0.1%	0.0%
RangeExt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SC(444) GBR Opt.	-3.8%	-3.7%	-3.1%	-3.2%	-3.4%	-2.7%	-2.7%
SC(444) YUV Opt.	0.1%	0.1%	0.0%	0.2%	0.2%	-0.7%	-0.5%

Lossless Coding Results

- Anchor: RCE4 Test1
- 0.1% / 0.0% / 0.0% bit savings for RGB 444 SC sequences under AI / RA / LB

	AI	RA	LB
Class F	0.0%	0.0%	0.0%
Class B	0.0%	0.0%	0.0%
RGB 4:4:4 SC	-0.1%	0.0%	0.0%
RGB 4:4:4 Animation	0.0%	0.0%	0.0%
YCbCr 4:4:4 SC	0.0%	0.0%	0.0%
YCbCr 4:4:4 Animation	0.0%	0.0%	0.0%
RangeExt	0.0%	0.0%	0.0%
RGB 4:4:4 SC (Optional)	-2.3%	-2.3%	-2.4%
YCbCr 4:4:4 SC (Optional)	0.0%	0.0%	0.0%

Conclusions

- Proposed to allow three color components of a CU to share one major color table
- The option can be enabled or disabled at CU level.
- Results

Lossy coding BD-rate	AI-MT	RA-MT	LB-MT
SC RGB 444 sequences	-1.2%	-1.0%	-1.1%

- For further study in a CE