

Non-SCCE3: Skip palette size for palette based coding [JCTVC-R0079]

Jianqing Zhu, Jiangli Ye
Fujitsu R&D Center Co., Ltd

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■ Palette base coding tools in SCCE3

- Palette information is first coded. Then pixel information are encoded.
- A palette size related syntax element is signaled.

...

```
for( i = 0; i < previousPaletteSize; i++ )  
    previous_palette_entry_flag[ i ]
```

palette_num_signalled_entries

```
for( i = 0; i < palette_num_signalled_entries; i++ )  
    palette_entrie[ numPredPreviousPalette + i ]
```

Pixel_index_infomation ();//copy mode, index and run etc.

- Palette size is derived from index information.
 - Index information is decoded firstly. Necessary info is needed to make index info is decodable, e.g. **index_bit_depth**.
 - Palette size = maximum value of index + 1.

```
...
index_bit_depth
Pixel_index_infomation ( );//copy mode, index and run etc.

PaletteSize=max_value(index)+1;
for( i = 0; i < previousPaletteSize; i++ ) {
    previous_palette_entry_flag[ i ]
    if ( previous_palette_entry_flag[ i ] ) {
        numPredPreviousPalette++
    }
PaletteNumSignalledEntries=PaletteSize-numPredPreviousPalette;
for( i = 0; i < PaletteNumSignalledEntries; i++ )
    palette_entrie[ numPredPreviousPalette + i ]
```

Simulation results(AI-lossless)

■ Anchor: SCCE3 (2CTU IBC) anchor

	All Intra			
	Bit-rate saving (Total)	Bit-rate saving (Average)	Bit-rate saving (Min)	Bit-rate saving (Max)
RGB, text & graphics with motion, 1080p	1.5%	1.5%	0.8%	1.9%
RGB, text & graphics with motion,720p	0.7%	0.5%	0.0%	1.0%
RGB, mixed content, 1440p	0.3%	0.3%	0.2%	0.5%
RGB, mixed content, 1080p	0.3%	0.3%	0.3%	0.3%
RGB, Animation, 720p	0.0%	0.0%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	1.5%	1.7%	0.8%	3.0%
YUV, text & graphics with motion,720p	0.5%	0.4%	0.0%	0.9%
YUV, mixed content, 1440p	0.2%	0.3%	0.1%	0.5%
YUV, mixed content, 1080p	0.3%	0.3%	0.3%	0.3%
YUV, Animation, 720p	0.0%	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
Enc Time[%]	98%			
Dec Time[%]	101%			

Simulation results(RA-lossless)

■ Anchor: SCCE3 (2CTU IBC) anchor

	Random Access			
	Bit-rate saving (Total)	Bit-rate saving (Average)	Bit-rate saving (Min)	Bit-rate saving (Max)
RGB, text & graphics with motion, 1080p	0.8%	0.7%	0.7%	0.8%
RGB, text & graphics with motion, 720p	0.1%	0.1%	0.0%	0.3%
RGB, mixed content, 1440p	0.0%	0.0%	0.0%	0.0%
RGB, mixed content, 1080p	0.0%	0.0%	0.0%	0.0%
RGB, Animation, 720p	0.0%	0.0%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	0.6%	0.8%	0.5%	1.2%
YUV, text & graphics with motion, 720p	0.1%	0.1%	0.0%	0.3%
YUV, mixed content, 1440p	0.0%	0.0%	0.0%	0.0%
YUV, mixed content, 1080p	0.0%	0.0%	0.0%	0.0%
YUV, Animation, 720p	0.0%	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
Enc Time[%]	96%			
Dec Time[%]	87%			

Simulation results(LB-lossless)

■ Anchor: SCCE3 (2CTU IBC) anchor

	Low Delay B			
	Bit-rate saving (Total)	Bit-rate saving (Average)	Bit-rate saving (Min)	Bit-rate saving (Max)
RGB, text & graphics with motion, 1080p	0.7%	0.6%	0.5%	0.7%
RGB, text & graphics with motion,720p	0.1%	0.1%	0.0%	0.3%
RGB, mixed content, 1440p	0.0%	0.0%	0.0%	0.0%
RGB, mixed content, 1080p	0.0%	0.0%	0.0%	0.0%
RGB, Animation, 720p	0.0%	0.0%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	0.4%	0.6%	0.4%	1.0%
YUV, text & graphics with motion,720p	0.0%	0.1%	0.0%	0.3%
YUV, mixed content, 1440p	0.0%	0.0%	0.0%	0.0%
YUV, mixed content, 1080p	0.0%	0.0%	0.0%	0.0%
YUV, Animation, 720p	0.0%	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%	0.0%
Enc Time[%]	90%			
Dec Time[%]	106%			

Simulation results(AI-lossy)

■ Anchor: SCCE3 (2CTU IBC) anchor

	All Intra		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p	-1.0%	-1.0%	-0.9%
RGB, text & graphics with motion,720p	-0.4%	-0.3%	-0.4%
RGB, mixed content, 1440p	-0.3%	-0.2%	-0.2%
RGB, mixed content, 1080p	-0.3%	-0.3%	-0.3%
RGB, Animation, 720p	0.0%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	-0.9%	-0.8%	-0.8%
YUV, text & graphics with motion,720p	-0.2%	-0.3%	-0.4%
YUV, mixed content, 1440p	-0.1%	-0.2%	-0.2%
YUV, mixed content, 1080p	-0.2%	-0.4%	-0.4%
YUV, Animation, 720p	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	100%		
Dec Time[%]	102%		

Simulation results(RA-lossy)

■ Anchor: SCCE3 (2CTU IBC) anchor

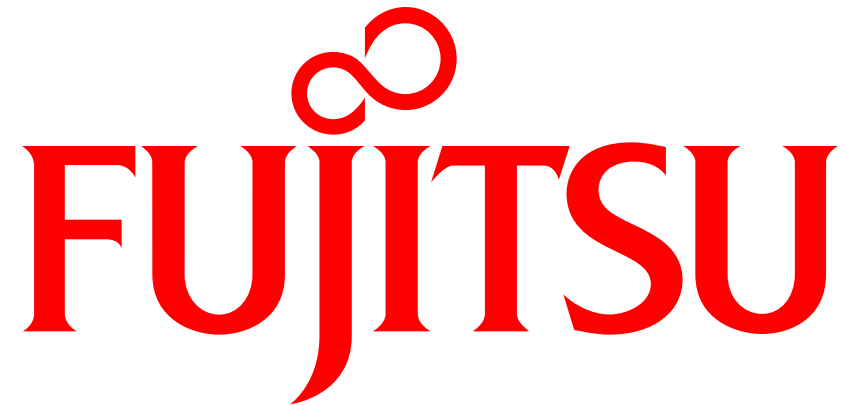
	Random Access		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p	-0.5%	-0.5%	-0.4%
RGB, text & graphics with motion,720p	-0.3%	-0.2%	-0.2%
RGB, mixed content, 1440p	-0.1%	0.0%	-0.1%
RGB, mixed content, 1080p	-0.2%	-0.2%	-0.3%
RGB, Animation, 720p	0.0%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	-0.3%	-0.5%	-0.4%
YUV, text & graphics with motion,720p	-0.2%	-0.3%	-0.5%
YUV, mixed content, 1440p	0.0%	-0.2%	-0.3%
YUV, mixed content, 1080p	-0.2%	-0.4%	-0.4%
YUV, Animation, 720p	0.0%	0.0%	-0.2%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	98%		
Dec Time[%]	113%		

Simulation results(LB-lossy)

■ Anchor: SCCE3 (2CTU IBC) anchor

	Low delay B		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p	-0.3%	-0.4%	-0.4%
RGB, text & graphics with motion,720p	-0.2%	-0.2%	-0.1%
RGB, mixed content, 1440p	-0.3%	0.0%	-0.1%
RGB, mixed content, 1080p	0.0%	-0.2%	0.0%
RGB, Animation, 720p	-0.1%	0.0%	0.0%
RGB, camera captured, 1080p	0.0%	0.0%	0.0%
YUV, text & graphics with motion, 1080p	-0.1%	-0.2%	-0.2%
YUV, text & graphics with motion,720p	0.0%	0.0%	0.0%
YUV, mixed content, 1440p	-0.1%	0.0%	-0.2%
YUV, mixed content, 1080p	-0.1%	-0.3%	0.1%
YUV, Animation, 720p	0.0%	0.0%	-0.1%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	100%		
Dec Time[%]	115%		

- Gain is showed when palette size is omitted.
- Suggest to add it into base software of palette based coding.



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