Unbiased clipping for IBDI

Hirofumi Aoki, Keiichi Chono, Kenta Senzaki, Junji Tajime and Yuzo Senda

NEC Corporation

Problem and proposal

The range of IBDI-extended pixel values is restricted, or biased in the direction to zero in the current HM software

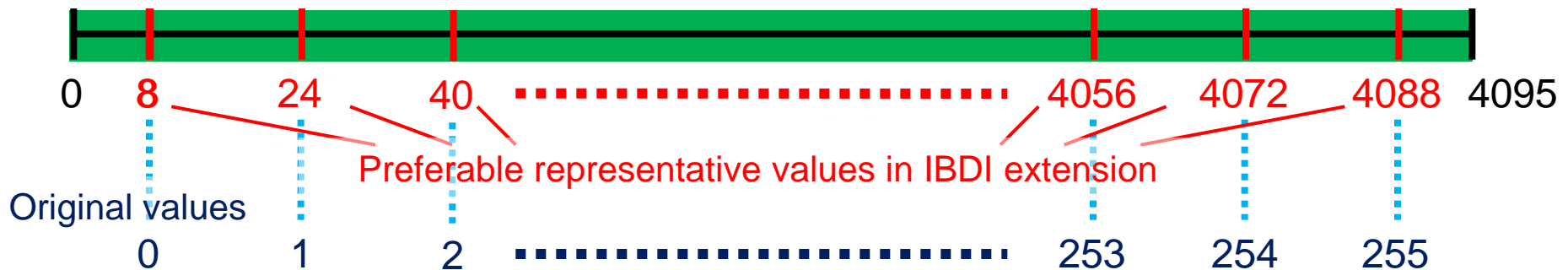- In the text of HM, no description on clipping for IBDI

Range of 8-bit pixel values

| 0 | 1 | 2 | ⋯ | 253 | 254 | 255 |

Range of pixel values extended to 12-bit by IBDI

Not used

| 0 | 16 | 32 | ⋯ | 4048 | 4064 | 4080 | 4095 |

Proposed range

| 0 | 8 | 24 | 40 | ⋯ | 4056 | 4072 | 4088 | 4095 |

Preferable representative values in IBDI extension

Original values

| 0 | 1 | 2 | ⋯ | 253 | 254 | 255 |

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Experimental results

	Intra		
	Y BD-rate	U BD-rate	V BD-rate
Class A	0.0	0.0	0.1
Class B	0.0	0.0	0.2
Class C	0.0	0.1	0.0
Class D	0.0	0.2	0.1
Class E	0.0	0.4	0.1
All	0.0	0.1	0.1
Enc Time[%]	100%		
Dec Time[%]	101%		

	Random access		
	Y BD-rate	U BD-rate	V BD-rate
Class A	0.0	0.1	0.2
Class B	0.0	0.1	0.0
Class C	0.0	0.0	0.0
Class D	0.0	0.0	0.0
Class E			
All	0.0	0.0	0.0
Enc Time[%]	100%		
Dec Time[%]	102%		

	Low delay		
	Y BD-rate	U BD-rate	V BD-rate
Class A			
Class B	0.0	-0.3	0.0
Class C	0.0	0.2	0.0
Class D	0.0	-0.2	0.0
Class E	-0.2	0.2	-0.7
All	0.0	0.0	-0.1
Enc Time[%]	100%		
Dec Time[%]	101%		

- The performance is not improved, but also not degraded
- The proposal is more natural and identical to non-IBDI case

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