



CE4: Summary Report of Core Experiment on Slice Boundary Processing and Fine Granularity

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Proponents and Crosscheckers

Subset	Proponent	Crosscheckers
1	JCTVC-E043 [MediaTek] CE4 Subset1: Leaf-CU-aligned slices	JCTVC-E394 [Qualcomm]
	JCTVC-E298 [Huawei] CE4 Subset1: Report on fine granularity slice partition	JCTVC-E087 [Canon]
	JCTVC-E260 [Ericsson] CE4 Subset1: Ericsson fine granularity slices	JCTVC-E301 [Huawei]
2	JCTVC-E044 [MediaTek] CE4 Subset2: Slice boundary filter	JCTVC-E272 [Samsung] JCTVC-E394 [Qualcomm]
	JCTVC-E283 [HiSilicon] CE4 Subset2: Report of intra coding improvements for slice boundary blocks	JCTVC-E089 [Canon]
3	JCTVC-E045 [MediaTek] CE4 Subset3: Slice common information sharing	JCTVC-E063 [Fujitsu]

Results of CE4 Subset1

- BD-rates (%) and bit rate inaccuracy ([%]) for 1500-byte slices (anchor: JCTVC-D600)

Case	Software	Condition	HE-AI	HE-RA	HE-LD	LC-AI	LC-RA	LC-LD
1	HM-2.0-dev-slices (rev 609)	LCU=64x64, LCU-aligned	4.9 [12.3]	4.3 [8.4]	2.5 [5.6]	Failed	Failed	Failed
2	HM-2.0-dev-slices (rev 609)	LCU=32x32, LCU-aligned	6.6 [3.8]	7.2 [3.0]	5.7 [2.7]	Failed	Failed	Failed
3	HM-2.0-dev-slices (rev 609)	LCU=16x16, LCU-aligned	10.6 [1.2]	18.0 [1.5]	18.4 [1.6]	Failed	Failed	Failed
4	MediaTek (JCTVC-E043)	LCU=64x64, leaf-CU-aligned, 2-step addressing, EOS flag	5.3 [2.0]	4.6 [2.5]	2.7 [3.0]	5.8 [0.5]	4.4 [0.9]	2.5 [1.2]
5	MediaTek (JCTVC-E043)	LCU=64x64, leaf-CU-aligned, 2-step addressing, no EOS flag	5.3 [2.0]	4.5 [2.5]	2.6 [3.0]	5.8 [0.5]	4.4 [0.9]	2.5 [1.2]
6	Huawei (JCTVC-E298)	LCU=64x64, leaf-CU-aligned, 2-step addressing, EOS flag	5.5	4.7	2.8	5.8	4.4	2.6
8	Ericsson (JCTVC-E260)	LCU=64x64, leaf-CU-aligned, 1-step addressing, EOS flag	5.1	4.4	2.6	5.6	4.3	2.5
9	Ericsson (JCTVC-E260)	LCU=64x64, leaf-CU-aligned, 1-step addressing, no EOS flag	5.1	4.5	2.6	5.6	4.3	2.5

MediaTek's Results of CE4 Subset2

- BD-rates (%) of the slice boundary filter (SBF) proposed by MediaTek in JCTVC-E044 (anchor: JCTVC-D600), claimed to have better subjective views

Case	Condition	HE-AI	HE-RA	HE-LD	LC-AI	LC-RA	LC-LD
1	1500 bytes per slice, SBF off	5.6	4.7	2.7	5.8	4.5	2.7
2	1500 bytes per slice, SBF on	5.3	4.6	2.6	5.5	4.3	2.5
3	2 slices per picture, SBF off	0.6	1.3	1.6	0.6	1.2	1.4
4	2 slices per picture, BF on	0.5	1.3	1.6	0.6	1.1	1.3

HiSilicon's Results of CE4 Subset2

- Results of intra prediction proposed by HiSilicon in JCTVC-E283 (anchor: original intra prediction in HM, 1500 bytes per slice)

Case	Condition	HE-AI	HE-RA	HE-LD	LC-AI	LC-RA	LC-LD
5	Proposed intra prediction off	4.9	4.4	2.6	5.5	4.3	2.5
6	Proposed intra prediction on	4.3	4.1	2.5	4.7	4.0	2.4

MediaTek's Results CE4 Subset3

- BD-rates (%) of the slice common information sharing technique proposed by MediaTek in JCTVC-E045 (anchor: JCTVC-D600), claimed to be better for parallel processing

Case	Condition	HE-AI	HE-RA	HE-LD	LC-AI	LC-RA	LC-LD
1	1500 bytes per slice, sharing off	4.9	4.4	2.6	5.5	4.3	2.5
2	1500 bytes per slice, sharing on	4.8	4.6	2.9	5.3	4.2	2.6

Conclusions

- CE4 Subset1
 - Suggest to adopt leaf-CU-aligned slices and unified end-of-slice detection
 - Suggest to establish a BoG on the addressing method of leaf-CU-aligned slices
- CE4 Subset2
 - Suggest to review the two proposals
- CE4 Subset3
 - Suggest to review the proposal
- Note
 - JCTVC-E042 is related to JCTVC-E043 in Subset1
 - JCTVC-E281 is related to JCTVC-E045 in Subset3



Thank you

