JCTVC-F162

Entropy coding performance simulations

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Summary

- CABAC vs. CAVLC comparisons

  - Common test conditions
  - Reduced complexity encoder configurations

Experiments

1. Common test conditions

2. RDOQ off

3. Multiple tiles

4. No context adaptation within an LCU for RDO decision

5. Experiment 2-4 combined

Experiment 1

- Anchor: Common test conditions
- Test: HE configuration + CAVLC
               LC configuration + CABAC

BD-rate (%)	High efficiency				Low complexity			
Class	AI	RA	LB	LP	AI	RA	LB	LP
Class A	6.3	9.3			-5.9	-8.2		
Class B	7.5	9.0	8.5	8.1	-6.7	-8.1	-8.0	-7.2
Class C	6.0	6.4	5.9	5.9	-5.7	-6.2	-5.9	-5.7
Class D	5.3	5.4	5.0	4.9	-5.0	-5.2	-4.8	-4.8
Class E	9.1		7.1	7.0	-8.3		-6.9	-6.4
Average	**6.7**	**7.6**	**6.7**	**6.5**	**-6.3**	**-7.0**	**-6.5**	**-6.1**

Experiment 2

- Anchor: LC configuration, RDOQ off
- Test: LC configuration, RDOQ off, CABAC

Class	AI	RA	LB	LP
Class A	-4.8	-5.1		
Class B	-5.8	-6.6	-6.8	-6.6
Class C	-4.3	-4.7	-4.7	-4.7
Class D	-3.7	-3.7	-3.7	-3.7
Class E	-7.2		-6.5	-6.4
Average	**-5.1**	**-5.1**	**-5.4**	**-5.4**

Experiment 3

- Anchor: LC configuration, Multiple tiles
- Test: LC configuration, Multiple tiles, CABAC

Class	AI	RA	LB	LP
Class A	-5.8	-6.8		
Class B	-6.7	-7.4	-6.6	-6.1
Class C	-5.7	-6.1	-5.5	-5.5
Class D	-5.0	-5.2	-5.0	-4.8
Class E	-7.8		-3.0	-2.6
Average	**-6.2**	**-6.4**	**-5.3**	**-5.0**

Experiment 4

- Anchor: LC configuration
- Test: LC configuration, CABAC
  No context adaptation within an LCU for RDO

Class	AI	RA	LB	LP
Class A	-4.8	-6.1		
Class B	-5.3	-7.2	-5.8	-4.9
Class C	-4.7	-5.3	-4.0	-3.7
Class D	-4.4	-4.3	-2.8	-3.0
Class E	-5.9		-4.9	-3.8
Average	**-5.0**	**-5.8**	**-4.4**	**-3.9**

Experiment 5

- Anchor:　　LC configuration, RDOQ off, Multiple tiles
- Test:　　　LC configuration, RDOQ off, Multiple tiles, CABAC
  No context adaptation within an LCU for RDO

Class	AI	RA	LB	LP
Class A	-3.7	-3.9		
Class B	-4.2	-4.9	-3.2	-3.4
Class C	-2.9	-3.5	-2.0	-2.1
Class D	-2.7	-2.7	-1.2	-1.4
Class E	-5.3		-1.2	-1.0
Average	**-3.7**	**-3.8**	**-2.0**	**-2.1**

Summary

- Anchor: LC configuration
- Test: LC configuration, CABAC

Tool	AI	RA	LB	LP
Common test conditions	-6.3	-7.0	-6.5	-6.1
RDOQ off	-5.1	-5.1	-5.4	-5.4
Multiple tiles	-6.2	-6.4	-5.3	-5.0
No sub-LCU RDO context adaptation	-5.0	-5.8	-4.4	-3.9
All of the above	**-3.7**	**-3.8**	**-2.0**	**-2.1**

Multiple tiles

Class	Number of tiles		Tile dimensions (in units of LCUs)	
	horizontally	vertically	horizontally	vertically
A	5	5	8	5
B	6	3	5	6
C	2	2	7	4
D	1	1	7	4
E	4	3	5	4