



CE8-related: JVET-O0325 combined with CE8 BVD coding scheme

Yucheng Sun, Fangdong Chen, Li Wang
2019/7/1

- Proposed Method
- Experimental Results
- Conclusion

- JVET-O0325 Method 1
 - Remove redundancy in current IBC mode

<code>abs_mvd_greater0_flag[0]</code>
<code>abs_mvd_greater0_flag[1]</code>



<code>abs_mvd_greater0_flag[1]</code>
<code>if(!abs_mvd_greater0_flag[1])</code>
<code>abs_mvd_greater0_flag[0]</code>

- CE8 BVD coding scheme
 - CE8-1.1, CE8-1.2 and CE8-1.3 are three different BVD coding scheme which still contains redundancy between merge mode and AMVP.
- Proposed to test the combinations

- Test 1: JVET-O0325 + CE8-1.1

AI over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	-0.05%	-0.09%	0.01%	140%	99%
Class A2	-0.83%	-1.08%	-0.99%	144%	99%
Class B	-0.83%	-0.72%	-0.88%	155%	101%
Class C	-0.33%	-0.29%	-0.24%	156%	104%
Class E	-1.36%	-1.30%	-1.37%	159%	104%
Overall	-0.68%	-0.67%	-0.69%	151%	102%
Class D	-0.60%	-0.74%	-0.65%	148%	105%
Class F	-0.52%	-0.33%	-0.35%	99%	100%
Class SCC	-1.32%	-1.18%	-1.20%	98%	100%

RA over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	0.10%	-0.28%	0.07%	104%	99%
Class A2	-0.16%	-0.28%	-0.14%	104%	99%
Class B	-0.17%	-0.37%	-0.67%	107%	100%
Class C	0.13%	-0.27%	-0.21%	112%	102%
Class E					
Overall	-0.04%	-0.31%	-0.30%	107%	100%
Class D	0.04%	0.00%	-0.06%	112%	103%
Class F	-0.39%	-0.36%	-0.49%	100%	100%
Class SCC	-1.12%	-0.88%	-0.91%	99%	99%

Thank LGE for the cross-checking

- Test 2: JVET-O0325 + CE8-1.2a

AI over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	-0.04%	0.02%	0.02%	140%	100%
Class A2	-0.80%	-1.06%	-0.99%	145%	100%
Class B	-0.79%	-0.71%	-0.89%	155%	101%
Class C	-0.31%	-0.26%	-0.23%	156%	105%
Class E	-1.31%	-1.26%	-1.26%	159%	104%
Overall	-0.65%	-0.64%	-0.67%	151%	102%
Class D	-0.57%	-0.53%	-0.60%	148%	107%
Class F	-0.32%	-0.28%	-0.42%	100%	101%
Class SCC	-0.91%	-0.88%	-0.89%	99%	101%

RA over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	0.10%	-0.12%	0.26%	105%	100%
Class A2	-0.10%	-0.23%	-0.11%	105%	99%
Class B	-0.16%	-0.35%	-0.50%	107%	100%
Class C	0.13%	-0.34%	-0.29%	112%	102%
Class E					
Overall	-0.02%	-0.28%	-0.21%	107%	100%
Class D	0.09%	-0.08%	-0.03%	112%	102%
Class F	-0.27%	-0.31%	-0.14%	100%	100%
Class SCC	-0.81%	-0.77%	-0.81%	100%	100%

- Test 3: JVET-O0325 + CE8-1.2b

AI over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	-0.05%	-0.02%	0.06%	140%	100%
Class A2	-0.79%	-1.06%	-0.96%	144%	100%
Class B	-0.79%	-0.67%	-0.89%	154%	102%
Class C	-0.30%	-0.21%	-0.28%	156%	105%
Class E	-1.29%	-1.21%	-1.32%	159%	104%
Overall	-0.64%	-0.61%	-0.68%	151%	102%
Class D	-0.55%	-0.58%	-0.65%	148%	107%
Class F	-0.23%	-0.21%	-0.13%	100%	101%
Class SCC	-0.74%	-0.71%	-0.73%	100%	100%

RA over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	0.11%	-0.22%	0.16%	104%	100%
Class A2	-0.08%	-0.26%	-0.25%	105%	100%
Class B	-0.13%	-0.25%	-0.75%	107%	101%
Class C	0.15%	-0.22%	-0.33%	112%	102%
Class E					
Overall	0.00%	-0.24%	-0.36%	107%	101%
Class D	0.13%	-0.18%	0.21%	112%	101%
Class F	-0.18%	-0.18%	0.03%	100%	100%
Class SCC	-0.55%	-0.46%	-0.53%	100%	100%

Thank LGE for the cross-checking

- Test 4: JVET-O0325 + CE8-1.3a

AI over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	-0.05%	-0.02%	-0.01%	140%	100%
Class A2	-0.80%	-1.04%	-0.99%	145%	100%
Class B	-0.80%	-0.69%	-0.84%	155%	102%
Class C	-0.30%	-0.30%	-0.21%	156%	104%
Class E	-1.30%	-1.17%	-1.34%	159%	104%
Overall	-0.64%	-0.63%	-0.67%	152%	102%
Class D	-0.56%	-0.50%	-0.68%	148%	106%
Class F	-0.36%	-0.26%	-0.28%	100%	101%
Class SCC	-0.99%	-0.95%	-0.96%	99%	101%

RA over VTM5.0					
	Y	U	V	EncT	DecT
Class A1	0.11%	-0.08%	0.31%	105%	100%
Class A2	-0.05%	-0.22%	-0.20%	105%	100%
Class B	-0.16%	-0.28%	-0.66%	107%	101%
Class C	0.15%	-0.22%	-0.28%	112%	102%
Class E					
Overall	0.00%	-0.21%	-0.27%	108%	101%
Class D	0.12%	0.02%	0.04%	112%	103%
Class F	-0.33%	-0.16%	-0.27%	100%	100%
Class SCC	-0.61%	-0.58%	-0.61%	100%	100%

- JVET-O0326 tests four combination of JVET-O0325 and CE8 BVD coding scheme
 - Test 1: JVET-O0325 + CE8-1.1
 - Test 2: JVET-O0325 + CE8-1.2a
 - Test 3: JVET-O0325 + CE8-1.2b
 - Test 4: JVET-O0325 + CE8-1.3a
- Experimental results reportedly show gains over all test compared to CE8 results
 - In Test 2 and Test 3, 1 context is reduced.
- Based on the above results, it is suggested to adopt the modification into BVD coding design

THANKS !

公司总部：杭州市滨江区东流路700号

股票代码：002415

客服电话：400-700-5998

www.hikvision.com

© 杭州海康威视数字技术股份有限公司

分公司：北京、长沙、成都、重庆、长春、福州、广州、贵阳、杭州、合肥、哈尔滨、呼和浩特、济南、昆明、兰州、南昌、
南京、南宁、宁波、青岛、上海、沈阳、深圳、石家庄、太原、天津、武汉、厦门、乌鲁木齐、西安、郑州.....

海外分公司：洛杉矶、香港、阿姆斯特丹、孟买、圣彼得堡、迪拜、新加坡.....