Unification of the Adaptive Motion Resolution signaling for both IBC and Inter modes

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G. Laroche, G. Malard, C. Gisquet,

P. Onno

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Problem Statement

- 2 different designs for motion resolution signaling and Block vector resolution signaling

Inter reference frames:

MV resolution of vectors pointing to the Inter reference frame depends on the value of use_integer_mv_flag

    0 => Quarter-pel

    1 => Full-pel

Current frame reference frame:

Vector resolution is always Full-pel

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Proposed changes

■ Only one signaling for all reference frames

All reference frames:

use_integer_mv_flag transmitted
for each reference frame index
    0 => Quarter-pel
    1 => Full-pel

■ Encoder: always set use_integer_mv_flag to 1 for the current frame

- Could be a bitstream conformance constraint

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Results

■ No Impact on coding efficiency

● Average BDR 0.0%

	All Intra		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p & 720p	0.0%	0.0%	0.0%
RGB, mixed content, 1440p & 1080p	0.0%	0.0%	0.0%
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 & 720p	0.0%	0.0%	0.0%
YUV, mixed content, 1440p & 1080p	0.0%	0.0%	0.0%
YUV, Animation, 720p	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	99%		
Dec Time[%]	104%		

	Random Access		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p & 720p	0.0%	0.0%	0.0%
RGB, mixed content, 1440p & 1080p	0.0%	0.0%	0.0%
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 & 720p	0.0%	0.0%	0.0%
YUV, mixed content, 1440p & 1080p	0.0%	0.0%	0.0%
YUV, Animation, 720p	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	99%		
Dec Time[%]	103%		

	Low delay B		
	G/Y	B/U	R/V
RGB, text & graphics with motion, 1080p & 720p	0.0%	0.0%	0.0%
RGB, mixed content, 1440p & 1080p	0.0%	0.1%	0.0%
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 & 720p	0.1%	0.1%	0.2%
YUV, mixed content, 1440p & 1080p	0.1%	0.0%	0.2%
YUV, Animation, 720p	0.0%	0.0%	0.0%
YUV, camera captured, 1080p	0.0%	0.0%	0.0%
Enc Time[%]	101%		
Dec Time[%]	102%		

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Conclusion

■ This contribution proposes to signal the vector resolution for each reference frame index.

- Same signaling for all reference frame indexes.
- Cleaner design
- More flexible than the current design
- No impact on coding efficiency

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