

# Subjective Tests on ALF and SAO

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# HEVC Committee Streams: Test Config. #1

ALF off and SAO off (Test) versus HM-3.0 (Anchor)

N : 23 - A : 10 - T : 3

		QP=37			QP=32		
		V1	V2	V3	V1	V2	V3
BasketballDrill	832x480	Anchor	Anchor	Anchor	Anchor	No Diff.	No Diff.
RaceHorseC	832x480	No Diff.	Anchor	No Diff.	No Diff.	No Diff.	No Diff.
vidyo1	1280x720	No Diff.	No Diff.	Anchor	No Diff.	No Diff.	No Diff.
vidyo3	1280x720	Anchor	Anchor	No Diff.	Test	Test	No Diff.
vidyo4	1280x720	No Diff.	No Diff.	No Diff.	Anchor	No Diff.	Test
BasketballDrive	1920x1080	No Diff.	Test	No Diff.	No Diff.	Anchor	No Diff.

# HEVC Committee Streams: Test Config. #2

ALF on and SAO off (Test) versus HM-3.0 (Anchor)

N: 21 - A : 9 - T : 6

		QP=37			QP=32		
		V1	V2	V3	V1	V2	V3
BasketballDrill	832x480	Anchor	Anchor	No Diff.	Test	No Diff.	No Diff.
RaceHorseC	832x480	Test	Test	No Diff.	No Diff.	No Diff.	No Diff.
vidyo1	1280x720	Test	Anchor	No Diff.	Test	No Diff.	No Diff.
vidyo3	1280x720	Anchor	No Diff.	Anchor	No Diff.	No Diff.	Anchor
vidyo4	1280x720	No Diff.	Test	Anchor	No Diff.	No Diff.	Anchor
BasketballDrive	1920x1080	No Diff.	Anchor	No Diff.	No Diff.	No Diff.	No Diff.

# HEVC Committee Streams: Test Config. #3

ALF off and SAO on (Test) versus HM-3.0 (Anchor)

N: 23 - A : 9 - T : 4

		QP=37			QP=32		
		V1	V2	V3	V1	V2	V3
BasketballDrill	832x480	No Diff.	No Diff.	Anchor	No Diff.	No Diff.	Test
RaceHorseC	832x480	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	Anchor
vidyo1	1280x720	No Diff.	Anchor	Anchor	No Diff.	Anchor	No Diff.
vidyo3	1280x720	Anchor	No Diff.	No Diff.	No Diff.	Anchor	Anchor
vidyo4	1280x720	No Diff.	No Diff.	Test	No Diff.	No Diff.	Test
BasketballDrive	1920x1080	No Diff.	Anchor	No Diff.	No Diff.	No Diff.	Test

# HEVC Committee Streams: Test Config. #4

ALF Luma off (Test) versus HM-3.0 (Anchor)

N: 29 - A : 4 - T : 3

		QP=37			QP=32		
		V1	V2	V3	V1	V2	V3
BasketballDrill	832x480	No Diff.	Anchor	No Diff.	No Diff.	No Diff.	No Diff.
RaceHorseC	832x480	No Diff.	Anchor	No Diff.	No Diff.	No Diff.	No Diff.
vidyo1	1280x720	No Diff.	Anchor	Test	No Diff.	No Diff.	No Diff.
vidyo3	1280x720	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.
vidyo4	1280x720	Test	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.
BasketballDrive	1920x1080	No Diff.	Test	Anchor	No Diff.	No Diff.	No Diff.

# Subjective scores compared to HM-3.0 Anchor

Table 1. Summary of the subjective test scores conducted on ALF and SAO. Each configuration has a total of 36 observations

Test configuration number	Test Setting	Number of votes for Neutral	Number of votes for Anchor	Number of votes for Test
1	1. ALF-Off, SAO-Off	23	10	3
2	2. ALF-On, SAO-Off	21	9	6
3	3. ALF-Off, SAO-On	23	9	4
4	4. ALF-Luma-Off, SAO-On	29	4	3

# BD-Rate results compared to HM-3.0 Anchor

Table 2. BD-Rate results compared to HM-3.0 Anchor LB-HE.

Test Setting	Y	U	V	Enc(%)	Dec(%)
1. ALF-Off, SAO Off	7.5	1	1	92	77
2. ALF-On, SAO-Off	1.7	-0.3	-0.4	98	96
3. ALF-Off, SAO-On	4.7	1.5	1.5	91	78
4. ALF-Luma-Off, SAO-On	5.2(*)	0.4	0.3	99(*)	96(*)

(\*) Note high BD-rate and Enc/Dec time values for experiment 4 is due to inefficient implementation of luma ALF disable.