

AHG13 - Weighted Prediction vs Generalized Bi-prediction with Fade sequences

JVET-L0201



■ Weighted-Prediction

- Specially designed to handle video sequences with Fades

- Uni-dir prediction: $P' = w \times P + o$
- Bi-prediction: $P' = (w_0 \times P_0 + o_0 + w_1 \times P_1 + o_1) / 2$
- *(wi,oi) coded for each refIdx (slice header)*

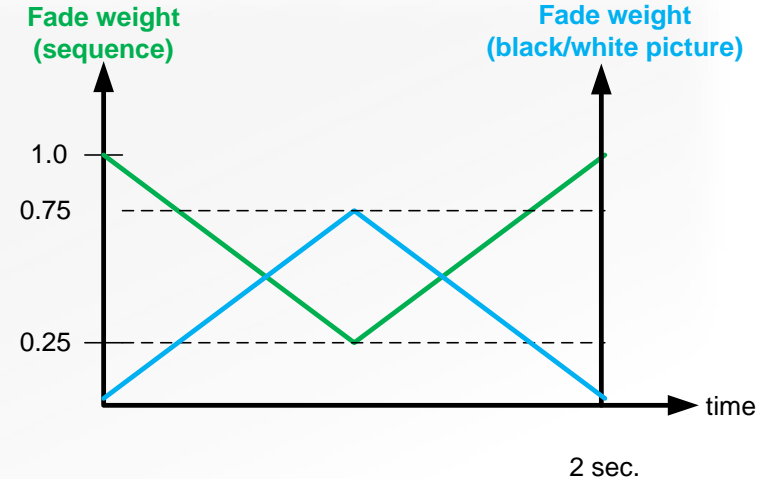
■ Generalized Bi-prediction

- Specially designed to handle video sequences with Fades

- Bi-prediction: $P' = ((1-w_1) \times P_0 + w_1 \times P_1 + 1) / 2$
- *w1 coded per CU (with conditions)*

■ Test Fade sequences

- Same procedure as used in JCT-VC
- Fade sequences created from test set
- Fade to black, fade to white
- 2 seconds
- BMS-2.1



Fade-to-white

WP

	Over BMS-2.1 - Random Access Main 10									
	WP on/off - FadeBlack					WP on/off - FadeWhite				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-5.1%	-2.8%	-5.7%	229%	85%	-9.8%	-8.6%	-10.9%	208%	81%
Class A2	-13.9%	-15.1%	-15.6%	186%	79%	-18.7%	-20.8%	-20.3%	177%	80%
Class B	-13.9%	-17.0%	-15.0%	174%	79%	-17.5%	-19.0%	-18.5%	168%	77%
Class C	-13.4%	-14.3%	-13.1%	136%	77%	-14.5%	-15.3%	-14.7%	128%	76%
Class E										
Overall	-12.0%	-13.1%	-12.7%	174%	79%	-15.4%	-16.3%	-16.3%	165%	78%
Class D	-12.2%	-14.6%	-14.6%	109%	56%	-13.2%	-16.3%	-15.7%	106%	78%

GBI

	Over BMS-2.1 - Random Access Main 10									
	WP on/off - FadeBlack					WP on/off - FadeWhite				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-0.46%	-0.36%	-0.65%	105%	101%	-0.12%	-0.17%	0.07%	93%	102%
Class A2	-0.82%	-1.26%	-1.18%	108%	100%	-0.44%	-0.71%	-0.79%	98%	100%
Class B	-1.17%	-1.31%	-1.29%	103%	102%	-1.51%	-1.87%	-2.23%	98%	101%
Class C	-1.38%	-1.95%	-1.74%	103%	99%	-1.00%	-1.46%	-1.30%	107%	101%
Class E										
Overall	-1.01%	-1.28%	-1.26%	104%	101%	-0.88%	-1.19%	-1.23%	99%	101%
Class D	-0.92%	-1.60%	-1.44%	104%	74%	-0.77%	-1.36%	-0.95%	101%	103%

WP

	Over BMS-2.1 – Low delay B									
	WP on/off - FadeBlack					WP on/off - FadeWhite				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1										
Class A2										
Class B	-23.2%	-34.0%	-33.2%	111%	92%	-24.2%	-34.2%	-33.9%	102%	94%
Class C	-18.7%	-26.9%	-26.3%	101%	90%	-20.1%	-27.8%	-27.4%	88%	96%
Class E	-52.5%	-61.6%	-59.6%	78%	76%	-52.5%	-61.9%	-59.5%	74%	75%
Overall	-29.0%	-38.5%	-37.5%	98%	87%	-29.9%	-39.0%	-38.1%	89%	89%
Class D	-17.7%	-25.9%	-27.7%	76%	90%	-17.4%	-25.1%	-27.2%	75%	91%

WP	Over HM16.19 – WP on/off - FadeBlack									
	Random Access Main 10					Low delay B Main10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-7.1%	-7.3%	-9.5%	255%	105%					
Class A2	-18.1%	-22.1%	-21.7%	231%	96%					
Class B	-17.3%	-23.2%	-20.8%	216%	94%	-30.4%	-43.0%	-40.6%	160%	92%
Class C	-16.1%	-17.7%	-17.7%	204%	81%	-24.1%	-32.6%	-30.5%	159%	92%
Class E						-64.4%	-69.7%	-68.0%	141%	85%
Overall	-15.1%	-18.3%	-17.8%	223%	93%	-36.8%	-46.2%	-44.1%	155%	90%
Class D	-16.9%	-19.6%	-19.9%	174%	47%	-23.4%	-31.7%	-34.6%	143%	94%

WP	Over HM16.19 – WP on/off - FadeWhite									
	Random Access Main 10					Low delay B Main10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-12.2%	-13.6%	-18.6%	247%	99%					
Class A2	-24.2%	-28.5%	-27.8%	238%	94%					
Class B	-20.8%	-24.8%	-23.4%	218%	93%	-31.8%	-43.1%	-41.4%	161%	88%
Class C	-18.1%	-20.4%	-20.2%	237%	89%	-25.6%	-33.8%	-31.8%	142%	94%
Class E						-65.0%	-70.5%	-68.6%	131%	79%
Overall	-19.0%	-22.1%	-22.5%	232%	93%	-38.0%	-46.8%	-45.0%	147%	87%
Class D	-18.4%	-20.9%	-21.8%	202%	98%	-23.5%	-32.9%	-34.6%	141%	91%