

Input: Uncompressed 3 min 5 s digital cinema test video sequence "arri" [1920 pixels x 852 lines x 25 fps]

Output: Compressed 3 min 5 s digital cinema test video sequence "arri" [1920 pixels x 852 lines x 25 fps] with 10s IDR period (250 frames)

FFMPEG v20200603

FFMPEG Default = ffmpeg x264 encoder in the default placebo (the slowest and the highest quality) mode

EMPEG-H.264/AVC0001.0000

EMPEG Default = EMPEG H.264 encoder in the default mode

VMAF v1.5.1 using v0.6.1. model

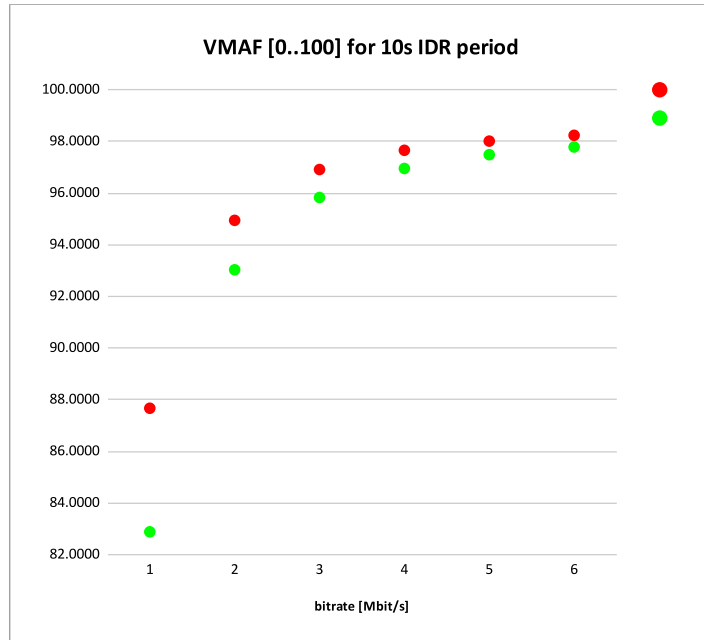
PSNR From VMAF library

SSIM From VMAF library

10s VMAF		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	82.8859	87.6703
2	93.0305	94.9450
3	95.8301	96.9128
4	96.9543	97.6574
5	97.4875	98.0129
6	97.7855	98.2376

EMPEG Default has 66% bitrate of FFMPEG Default for the same VMAF.

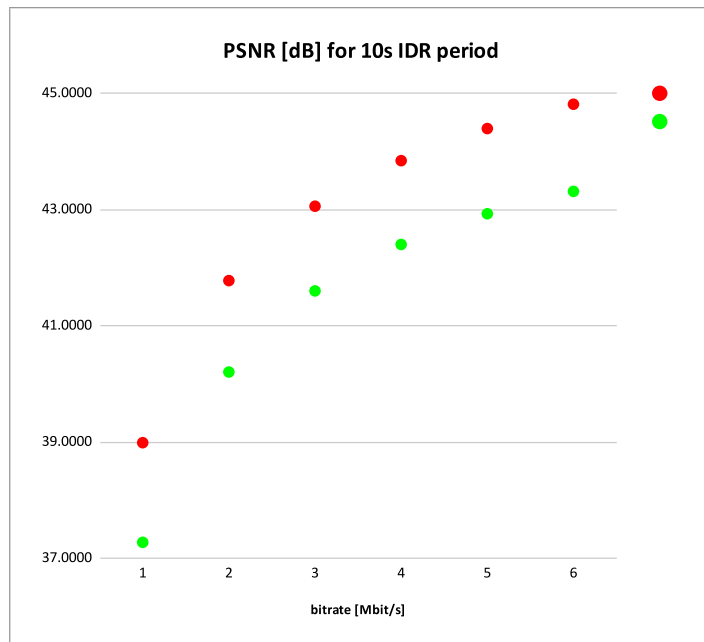
10s VMAF (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	-4.7844	0.0000
2	-1.9146	0.0000
3	-1.0827	0.0000
4	-0.7031	0.0000
5	-0.5255	0.0000
6	-0.4521	0.0000



10s PSNR [dB]		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	37.2730	38.9875
2	40.2034	41.7768
3	41.5993	43.0569
4	42.3988	43.8408
5	42.9271	44.3932
6	43.3119	44.8118

EMPEG Default has 66% bitrate of FFMPEG Default for the same PSNR.

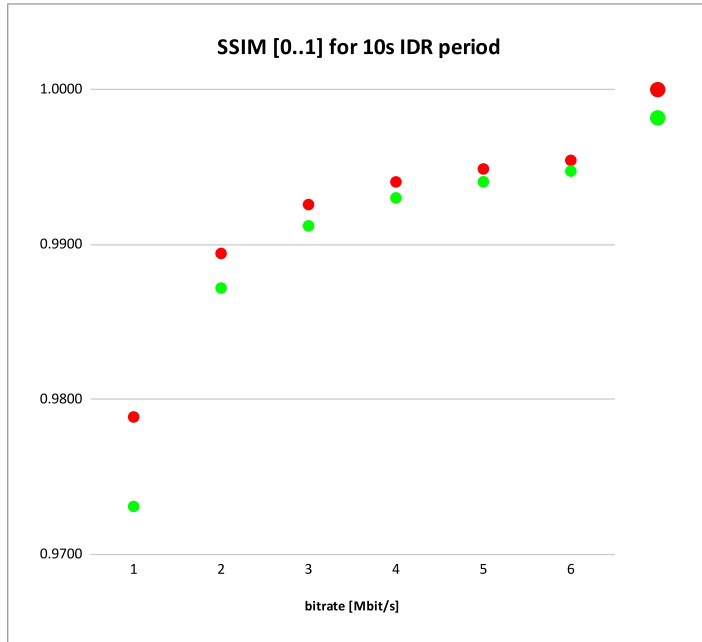
10s PSNR [dB] (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	-1.7145	0.0000
2	-1.5734	0.0000
3	-1.4576	0.0000
4	-1.4420	0.0000
5	-1.4661	0.0000
6	-1.4999	0.0000



10s SSIM		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	0.9731	0.9789
2	0.9872	0.9894
3	0.9912	0.9926
4	0.9930	0.9940
5	0.9941	0.9949
6	0.9947	0.9954

EMPEG Default has 77% bitrate of FFMPEG Default for the same SSIM.

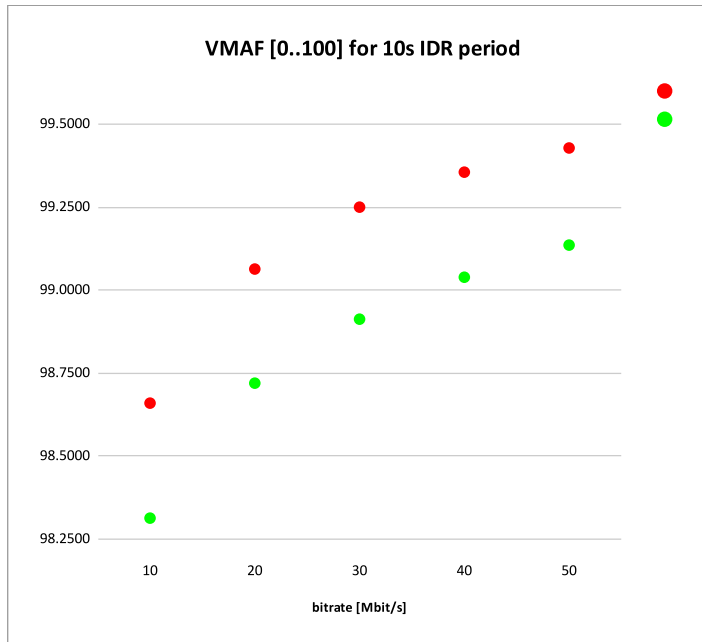
10s SSIM (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
1	-0.0058	0.0000
2	-0.0022	0.0000
3	-0.0014	0.0000
4	-0.0010	0.0000
5	-0.0008	0.0000
6	-0.0007	0.0000



10s VMAF		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	98.3136	98.6599
20	98.7201	99.0637
30	98.9128	99.2501
40	99.0391	99.3555
50	99.1358	99.4283

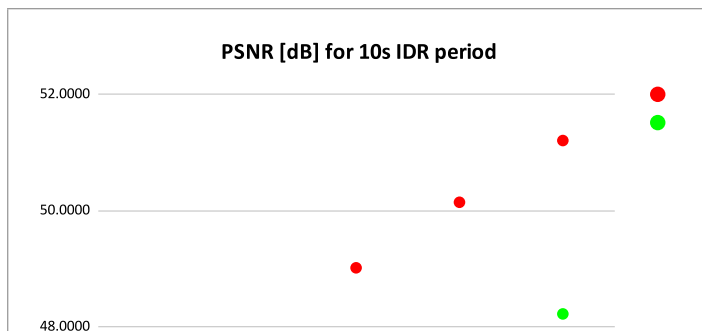
EMPEG Default has 44% bitrate of FFMPEG Default for the same VMAF.

10s VMAF (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	-0.3463	0.0000
20	-0.3437	0.0000
30	-0.3374	0.0000
40	-0.3164	0.0000
50	-0.2925	0.0000



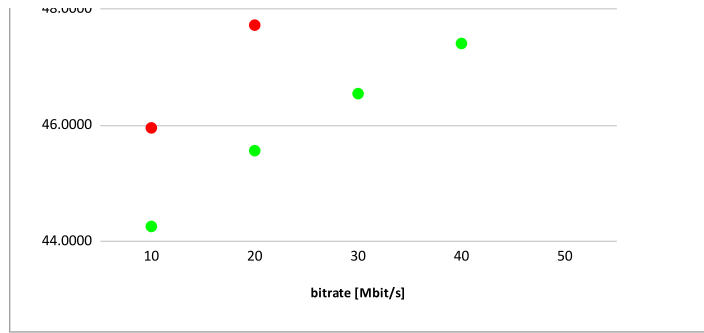
10s PSNR [dB]		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	44.2563	45.9523
20	45.5606	47.7206
30	46.5421	49.0146
40	47.4046	50.1425
50	48.2212	51.2047

EMPEG Default has 44% bitrate of FFMPEG Default

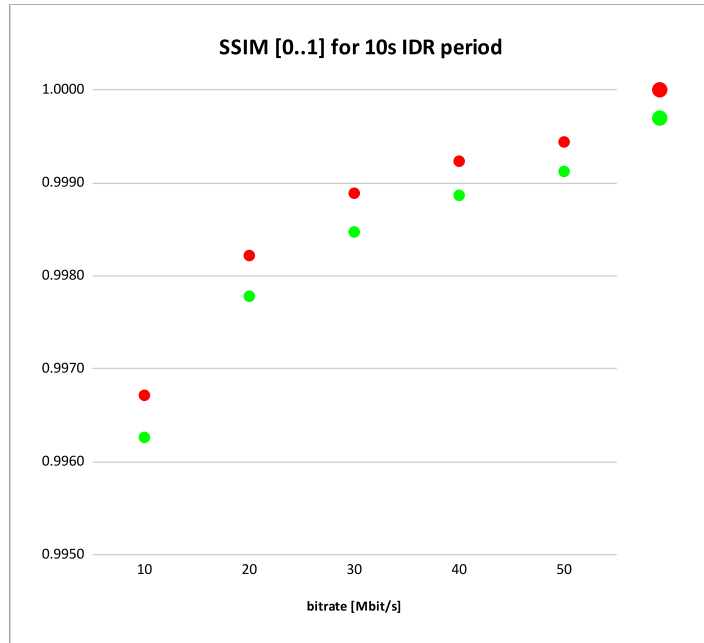


for the same PSNR.

10s PSNR [dB] (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	-1.6960	0.0000
20	-2.1601	0.0000
30	-2.4725	0.0000
40	-2.7378	0.0000
50	-2.9835	0.0000



10s SSIM		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	0.9963	0.9967
20	0.9978	0.9982
30	0.9985	0.9989
40	0.9989	0.9992
50	0.9991	0.9994



EMPEG Default has 77% bitrate of FFMPEG Default for the same SSIM.

10s SSIM (difference from EMPEG default)		
bitrate [Mbit/s]	FFMPEG Default	EMPEG Default
10	-0.0005	0.0000
20	-0.0004	0.0000
30	-0.0004	0.0000
40	-0.0004	0.0000
50	-0.0003	0.0000