CCITT SGXV
Working Party XV/1
Experts Group for ATM Video Coding

Document AVC-188
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SOURCE : Fujitsu LTD.
TITLE : Comparison among compatible coding, non-compatible coding, and simulcast
PURPOSE : Information

1. Introduction

In document AVC-122, comparison results between compatible coding and non-compatible coding were shown in order to clarify their relative coding performances. In this document, a comparison among these schemes and simulcast is described using the same coding scheme as used in AVC-122.

2. Computer simulation results

Figure 1 shows the encoder block diagram of the coding scheme (Hierarchical Lapalacian Pyramid Coding : HLPC). In the simulcast case, non-compatible coding with a bit rate of (Total bit rate) - 1.5 Mb/s is used in the higher layer coding, 1.5Mb/s is assumed to be allocated for the lower layer coding (i.e. H.261 or MPEG1). Table 1 and Figure 2 show the simulation results of each coding scheme for the Flower Garden. In this simulation, MPEG1 (SIF) is used as encoder 1. The results indicate that maximum loss in SNR by simulcast as compared to compatible coding is 2.1dB when the total bit rate is 4Mb/s and 0.9dB when it is 9Mb/s. Compared with non-compatible coding, the loss is 3.2dB when the total bit rate is 4Mb/s and 1.3dB when it is 9Mb/s. The reproduced picture will be demonstrated by VCR at the meeting.

3. Conclusion

Coding performance of a simulcast scheme was evaluated through computer simulation, in comparison with compatible coding and non-conpatible coding.

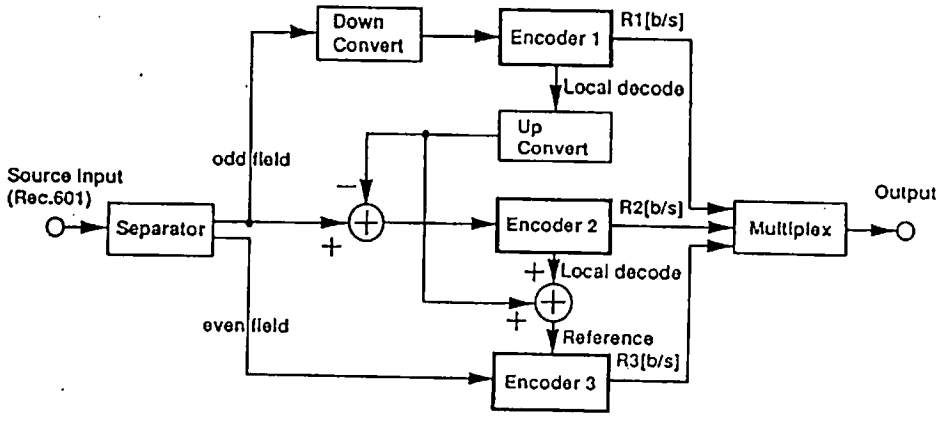

Fig.1 : Encoder block diagram of HLPC

Table 1 : Coding performance

	Compatible coding S／N [dB]		Non-compatible coding S／N [dB]		Simulcast S／N [dB]	
	Bit rate 1.5M/1.5M/1M	Bit rate 1.5M/4.5M/3M	Bit rate 0/3M/1M	Bit rate 0/6M/3M	Bit rate 0/1.5M/1M	Bit rate 0/4.5M/3M
odd (Y)	29.4	32.7	30.5	33.9	27.3	32.6
(Cb)	32.5	35.6	32.8	35.9	30.4	34.7
(Cr)	33.3	36.2	33.8	36.4	32.0	35.3
even(Y)	26.6	31.3	26.7	31.4	26.1	31.3
(Cb)	31.0	33.6	31.1	33.6	29.9	33.4
(Cr)	32.8	34.7	33.1	34.6	31.9	34.3

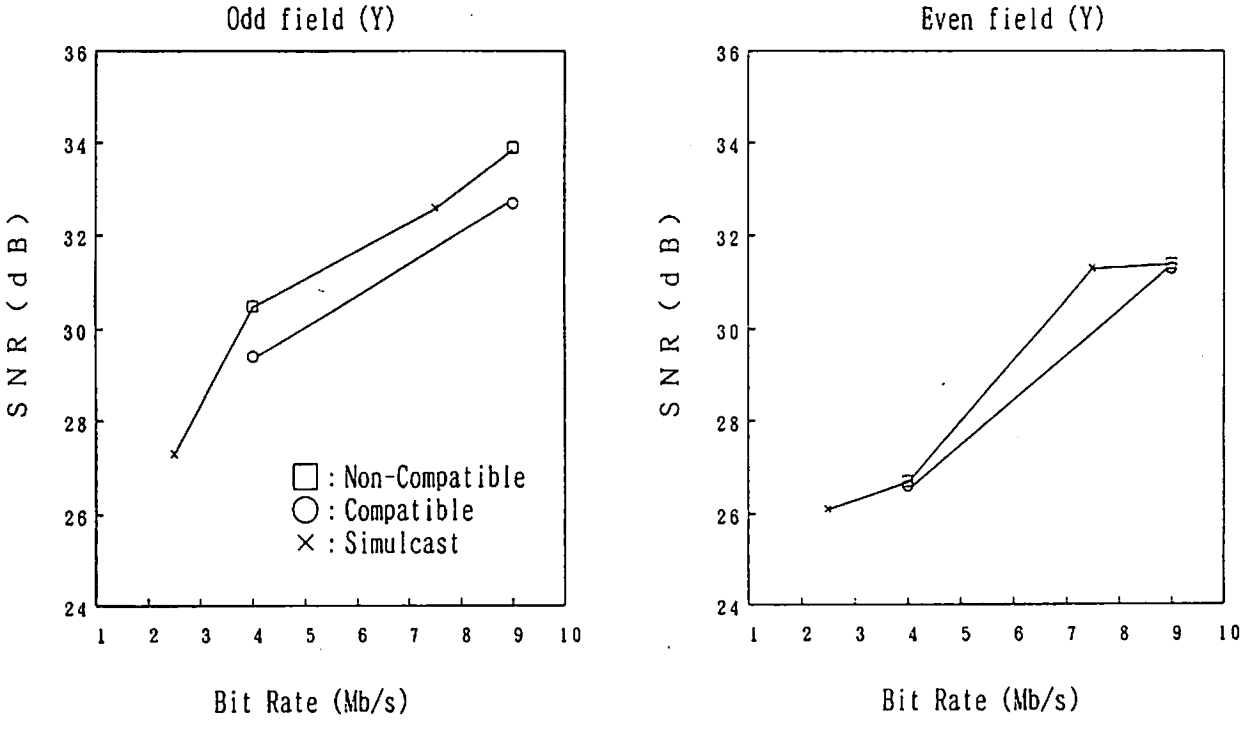

Fig.2 : Comparison among coding schemes