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Specialists Group on Coding
for Visual Telephony

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Title: RESULTS ON REFERNCE SIMULATION

The reference simulation agreed in Tokyo, specified in CCITT document 104 has been implemented. At present, only the sequence Split/Trevor (CIF, newly produced by BTRL) has been used for a simulation at 300 kbit/s (10 Hz frame rate). Picture quality was poor, but better than expected. The following statistical results were achieved.
Mean values, as well as maximum and minimum values over the whole sequence are given. Mean values are calculated using also the results for scene cuts. These values are excluded as extreme values.
RMS values correspond to luminance only.

	Mean	Max	Min
RMS coding error	5.849	5.939	3.445
RMS prediction error	7.446	15.212	4.974
RMS frame difference	19.587	26.531	8.167
No of bits for motion	6 207	7 800	5 136
No of bits for luminance attributes and data	21 330	23 580	17 224
No of bits for chrominance attributes and data	2645	3 507	1 359
Total no of bits	30 182	32 009	27 811
No of moving blocks	586	777	444
No of coded blocks	680	769	509
No of non-zeroes per coded block	3.696	4.813	3.023
No of transmitted components per coded block	13.964	20.998	9.973

Motion vectors occured with the following probabilities:

		0.01		
		0.01		
	0.01	0.02	0.01	
0.01	0.01	0.60	0.01	0.01
	0.01	0.01	0.01	0.01
		0.01		
		0.01		

The figures for No of coded blocks on previous page correspond to both luminance and chrominance blocks. As can be calculated, between 21 % and 32 % of the blocks are coded, i.e. contain at least one non-zero coefficient after quantization. The following statistics were achieved for the coded blocks.

No of non-zeroes	Fraction of blocks
1	0.33
2	0.18
3	0.12
4	0.09
5	0.07
6	0.05
7	0.04
8	0.03
9	0.02
10-64	0.07

Quantizer level index	Probability
-4	0.00
-3	0.01
-2	0.02
-1	0.09
0	0.734
1	0.08
2	0.02
3	0.01
4	0.00
all others	0.036