

OCITT SGXV
Working party XV/1
Specialists Group on Coding for Visual Telephony

Document #369
September 1988

Source: Republic of Korea (ETRI)
Title: Reference Model 5 Simulation

Reference Model No. 5 described in Document #339 has been simulated by ETRI, Korea. In the simulation, we count the quantizer information bits of 5 for each GOB.

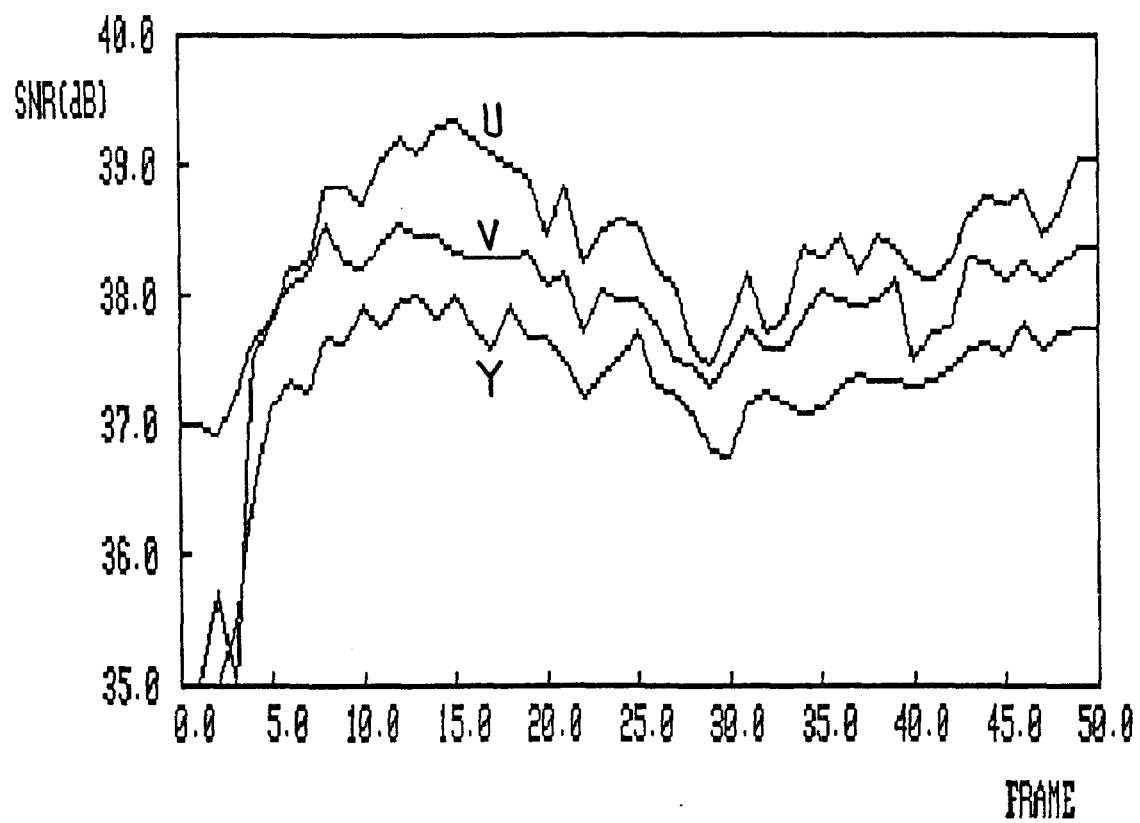
The numerical data of the simulation is shown in Annex. In the Annex, we also show block type patterns of macro, luminance, and chrominance blocks of the 15th frame coded.

Unfortunately, it is not possible for us to provide U-matic tapes of coded frames since a proper image display system is not available yet in our institute.

Annex : Simulation Results

INSTITUTE: ETRI, KOREA
 DATE: Thu Sep 8 10:44:46 1988
 STATISTICS RM5
 INPUT SEQUENCE : missam.seq
 MODIFICATION : FRAME RATE: 10.00

ITEM	15 TH	MEAN(2-49)
1. RMS for luminance	3.1945	3.4700
2. SNR for luminance	38.0427	37.3472
for chrominance(u)	39.3465	38.4048
for chrominance(v)	38.3723	37.9968
3. Mean value of step size	20.6667	24.6482
4. Mean value of the number of non-zero coefficients y	2.7027	2.3177
c	1.1944	1.3139
5. Mean value of number of transmitted zeros y	6.5568	5.7431
transmitted zeros c	1.8056	2.8133
6. Block FIXED	256	234
type CODED MC	44	67
of FIXED MC	10	28
MACRO CODED	86	68
7. Block FIXED	1290	1139
type CODED MC	107	123
of FIXED MC	109	257
Y CODED	78	3158
8. Block FIXED	629	560
type CODED	55	42
of UV		
9. Number MACRO attr.	583	575
End of block	1560	1614
of Motion Vectors	432	759
bits Y	2710	2272
coeffs U	137	273
V	230	215
total	3077	2761
Total	5652	5709



SNR of coded frames (Miss America)

PATTERNS OF BLOCK TYPE AT 15TH CODED FRAME OF MISS AMERICA

In the following, '0' means FIXED block,
 '1' means CODED MC blocks,
 '2' means FIXED MC blocks, and
 '3' means CODED block.

```

0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0 1
0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 3 0 3 0 3 0 3 0 0 0 0 0 0
0 0 0 0 0 0 3 3 3 0 3 3 3 3 3 0 0 0 0 0 3 0
0 3 0 0 0 0 0 3 3 3 0 0 3 1 3 0 0 0 0 0 0 0
0 0 0 0 0 3 0 3 3 3 1 1 1 1 1 3 0 0 0 0 0 0
0 0 0 0 0 0 0 0 3 1 1 1 1 1 1 1 3 0 0 0 0 0
0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 3 0 0 0 0 0
0 0 0 0 0 0 0 3 1 3 1 1 3 1 1 3 0 0 0 0 0 0
0 0 0 0 0 0 0 3 1 0 1 1 1 1 1 1 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 1 3 1 1 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 2 2 1 1 2 1 0 3 0 0 0 0 0 0
0 0 0 0 0 3 0 2 0 3 2 1 2 1 0 0 0 1 1 3 0 0
0 0 0 0 3 0 3 0 0 3 0 1 2 2 0 0 0 3 3 0 0 0
0 0 0 0 3 3 0 0 0 3 0 2 0 3 0 0 3 3 3 0 0 0
0 3 0 0 3 0 0 3 0 3 0 0 0 3 3 3 0 0 0 0 0 0
3 3 0 0 0 0 3 3 3 3 3 3 3 3 0 3 3 3 3 0 0 0
3 3 0 0 3 3 3 0 3 3 1 3 3 3 3 3 3 3 0 0 0 3
    
```

MACRO BLOCK TYPE PATTERN

LUMINANCE BLOCK TYPE PATTERN

```

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 2 2 2 2 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 2 2 2 2 1 2 3 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 1 2 2 1 2 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 0 2 2 0 2 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 0 2 2 2 2 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 2 3 2 2 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 2 2 2 2 2 0 3 0 0 0 0 0 0
0 0 0 0 0 3 0 2 0 0 2 2 2 2 0 0 0 1 2 0 0 0
0 0 0 0 0 0 3 0 0 0 0 2 2 2 0 0 0 0 0 0 0 0
0 0 0 0 3 0 0 0 0 0 0 2 0 0 0 0 3 3 0 0 0 0
0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 3 0 0 0 0 0 0
0 0 0 0 0 0 3 3 0 0 0 3 3 3 0 0 0 0 0 0 0 0
0 0 0 0 3 3 0 0 3 3 2 0 0 0 3 3 3 3 0 0 0 0

```

U CHROMINANCE BLOCK TYPE PATTERN

```

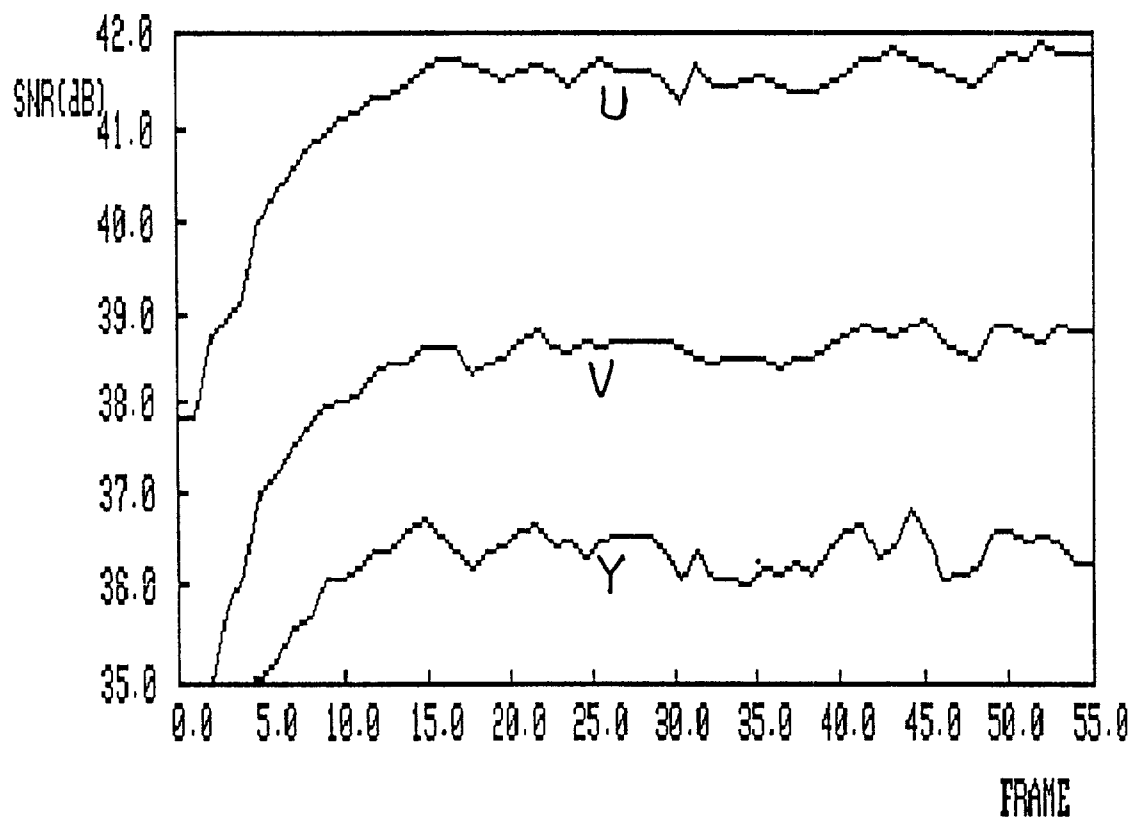
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 3 3 0 0 0 0 0 0 0 0 0 0 0 0 3 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0
0 0 0 0 0 3 0 3 0 0 1 2 1 1 2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 2 1 1 1 2 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 2 2 2 1 1 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 0 1 2 0 2 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 0 2 2 2 2 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 0 1 3 2 2 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 2 2 2 2 2 2 0 0 0 0 0 0
0 0 0 0 0 0 0 0 2 0 0 2 2 2 2 0 0 0 2 2 0 0
0 0 0 0 0 0 0 0 0 0 0 2 2 2 0 0 0 3 3 0 0 0
0 0 0 0 0 0 0 0 0 3 0 2 0 0 0 0 3 0 3 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 3 0 0 0 0 0 0
0 0 0 0 0 0 3 0 3 3 3 3 3 3 0 3 3 3 3 0 0 0
0 3 0 0 0 3 0 0 0 3 2 0 3 3 3 3 0 3 0 0 0 0

```

V CHROMINANCE BLOCK TYPE PATTERN

INSTITUTE: ETRI, KOREA
 DATE: Fri Sep 9 04:34:12 1988
 STATISTICS RM5
 INPUT SEQUENCE : claire1.seq
 MODIFICATION : FRAME RATE: 10.00

ITEM	15 TH	MEAN(2-55)
1. RMS for luminance	3.7233	4.0863
2. SNR for luminance	36.7123	36.0442
for chrominance(u)	41.6144	41.3339
for chrominance(v)	38.6205	38.3393
3. Mean value of step size	23.0000	27.1831
4. Mean value of the number of non-zero coefficients y	2.3739	2.7959
c	1.2414	1.2641
5. Mean value of number of transmitted zeros y	9.7838	9.6180
transmitted zeros c	4.3103	3.1168
6. Block FIXED	273	284
type CODED MC	36	50
of FIXED MC	4	10
MACRO CODED	83	52
7. Block FIXED	1278	1253
type CODED MC	76	113
of FIXED MC	84	126
Y CODED	146	4920
8. Block FIXED	696	660
type CODED	16	12
of UV		
9. Number MACRO attr.	568	502
End of block	1428	1221
of Motion Vectors	320	479
bits Y	3372	3391
coefs U	48	49
V	145	109
total	3565	3549
Total	5881	5752



SNR of coded frames (Claire)

PATTERNS OF BLOCK TYPE AT 15TH CODED FRAME OF CLAIRE

In the following, '0' means FIXED block,
'1' means CODED MC blocks,
'2' means FIXED MC blocks, and
'3' means CODED block.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0	0	3	0	0	0	3	0	0	3	0	2	0	0	3	3	3	3	0	3	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	3	0	3	3	3	3	0	3	3	0	3	0	3	3	0	
0	0	0	3	0	0	0	3	3	1	3	1	3	0	0	0	0	0	0	0	0	
0	0	0	3	0	0	0	3	1	1	1	1	3	3	0	3	0	0	0	0	0	
0	1	0	0	0	0	0	3	3	1	1	1	1	1	0	0	0	0	0	0	0	
0	0	0	0	0	3	0	3	1	1	1	1	3	1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	3	3	1	1	1	3	3	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	3	3	3	3	3	3	1	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	1	3	1	1	3	3	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	3	0	3	1	1	3	3	3	3	0	0	0	0	0	0
0	0	0	0	0	1	0	3	0	3	3	3	3	3	3	3	3	0	0	0	1	0
0	0	2	0	0	2	0	0	3	3	1	3	0	0	0	0	3	0	0	0	0	0
0	0	0	0	0	3	0	0	0	3	0	3	0	0	0	0	0	3	0	2	0	0
0	1	0	0	1	0	0	0	0	3	0	3	0	0	0	0	3	0	0	0	1	0
0	3	0	0	3	0	0	0	0	3	3	3	0	0	0	0	0	3	0	0	0	0
0	1	0	0	0	0	0	0	0	3	3	0	0	3	0	0	0	3	1	0	0	0

MACRO BLOCK TYPE PATTERN

