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Title: MPEG-2 Video Coding Proposal

Purpose: Information

1. FUNDAMENTALS

The video-coding algorithm proposed here extends the MPEG-1 video-coding algorithm in a number of directions. The main theme of this proposal is the incorporation of adaptive strategies into the MPEG-1 video coder, many of which are geared to exploit the effects of interlace. In this proposal, a picture is a CCIR-601 luminance frame of size 720×480 plus the associated Cb and Cr frames at $1/4$ resolution (360×240); a video sequence comprises 29.97 such pictures per second. The luminance frame is formed as the interlaced union of the two constituent CCIR-601 luminance fields, while the chrominance frames are derived by filtering and subsampling the respective 4:2:2 CCIR-601 chrominance frames.

1.1 GOP Structure and Random Access

A Group-of-Picture (GOP) structure with $N = 12$ and $M = 3$ in the MPEG parlance is employed. This GOP consists of one intra-coded (I-) picture, 3 predictively coded (P-) pictures, and 8 bidirectionally predictive coded (B-) pictures (Fig. 1). This GOP ensures that a complete I-picture occurs every $12/29.97$ (approximately 0.4) seconds, which is hence the maximum delay for acquiring a picture from a bit-stream.

1.2 Macroblock

As in MPEG-1, a picture is divided into macroblocks where a macroblock is a 16×16 luminance block plus the co-sited 8×8 Cb- and Cr-blocks (one of each). This definition, however, is easily extended to full CCIR-601 vertical chrominance resolution, where a 16×16 luminance block is associated with two 8×8 Cb and two 8×8 Cr blocks. The macroblock is the unit for which

motion-compensation and quantization modes are defined.

1.3 Slice

A slice is defined to be one row of macroblocks, starting at the left edge of the picture and ending at the right edge.

2. MOTION COMPENSATION

The motion estimation and compensation process in this proposal takes into account that a macroblock contains luminance pixels of two interlaced fields. Accordingly, two fundamental modes of motion compensation are defined: the *frame-MC* and the *field-MC* modes. In the field-MC mode, the pixels of one field are predicted only from pixels of the field of the same polarity in the reference frame(s). Two block sizes are allowed for motion compensation, with horizontal $\times$ vertical dimensions of 16×16 and 16×8 respectively. In P- and B-pictures, after motion compensation is finished, the computed difference "pixels" are put back in the original interlaced order to form a frame-difference macroblock. We now consider the various motion compensation modes in P-pictures and B-pictures allowed in this proposal.

2.1 Motion Compensation Modes for P-Pictures

1. 16×16 frame-MC mode:

In this mode, the 16×16 luminance block is compensated by another 16×16 block from the reference frame that is fetched using one (forward) motion vector. No distinction is made between the pixel-lines of the two different fields. The prediction block also contains pixels of both fields of the reference frame. This MC mode is identical to that in MPEG-1 for P-pictures.

2. 16×8 frame-MC mode:

In this mode, the 16×16 luminance block is divided vertically into two 16×8 halves. Each half is independently compensated using a (forward) motion vector. Again, no distinction is made between the lines of the two different fields. Two motion vectors are transmitted per macroblock in this mode.

3. 16×8 field-MC mode:

In this mode, the 16×16 luminance block is separated by field polarity into two 16×8 blocks, such that each 16×8 block only contains pixel-lines of one field. Each block is compensated independently using a (forward) motion vector with a 16×8 block that is derived from pixel-lines of the field of the same polarity in the reference frame. Two motion vectors are transmitted per macroblock in this mode.

2.2 Motion Compensation Modes for B-Pictures

1. 16×16 bidirectional frame-MC mode:

This mode is identical to the bidirectional prediction mode in MPEG-1. A forward motion vector fetches a 16×16 block from the past reference

frame, and a backward motion vector fetches a 16×16 block from the future reference frame. These blocks are averaged to yield the final prediction block.

2. 16×16 forward unidirectional frame-MC mode:
This mode is identical to the forward unidirectional predictional mode in MPEG-1. Only one forward motion vector is used for a macroblock.
3. 16×16 backward unidirectional frame-MC mode:
This mode is identical to the backward unidirectional predictional mode in MPEG-1. Only one backward motion vector is used for a macroblock.
4. 16×8 frame-MC mode; top-forward with bottom-backward:
In this mode, the 16×16 luminance block is divided vertically into two 16×8 blocks. The top half is compensated using a forward motion vector, which fetches a 16×8 block from the past reference frame. The bottom half is compensated using a backward motion vector, which fetches a 16×8 block from the future reference frame. Two motion vectors are transmitted per macroblock in this mode.
5. 16×8 frame-MC mode; top-backward with bottom-forward:
This mode is very similar to the one above, with the top half compensated using a backward motion vector and the bottom half using a forward motion vector.
6. 16×8 field-MC mode; odd-forward with even-backward:
In this mode, the 16×16 luminance block is separated by field polarity into two 16×8 blocks, one containing the pixel-lines of the odd field and the other the lines of the even field. The 16×8 block with the odd-field lines is compensated using a forward motion vector with another 16×8 block derived only from odd-field lines of the past reference frame. Similarly, the 16×8 block with the even-field lines is compensated using a backward motion vector with a 16×8 block derived only from even-field lines of the future reference frame. Two motion vectors are transmitted per macroblock in this mode.
7. 16×8 field-MC mode; odd-backward with even-forward:
This mode is very similar to the one above, with the 16×8 block containing the odd-field lines compensated using a backward motion vector with a block from the future reference frame and the 16×8 block containing the even-field lines compensated using a forward motion vector with a block from the past reference frame. Two motion vectors are again required per macroblock in this mode.

2.3 Coding of Motion Vectors

Each motion vector component is encoded differentially, with respect to a previously transmitted component. The VLC tables in the December 1990 version of the MPEG-1 Video CD are employed.

3. QUANTIZATION AND QUANTIZER MATRICES

For the same reasons as with motion compensation, two basic quantization and coding modes are allowed for a macroblock: *frame* coding and *field* coding. These quantization+coding modes are completely independent of the motion-compensation modes. In frame coding, four 8×8 luminance subblocks are formed from a macroblock as in MPEG-1. In field coding, four 8×8 luminance subblocks are derived from a macroblock by separating the lines of the two fields, such that each subblock contains only lines of one field. The frame- vs. field-coding decision is made in the pixel domain once for the entire macroblock. An 8×8 DCT is then applied to each frame subblock or field subblock, depending on the mode selected.

3.1 Intra-Coded Macroblocks and DC-Prediction

All macroblocks in I-pictures are intra-coded; intra coding of macroblocks is also allowed in P- and B-pictures. In intra-coded macroblocks (field or frame mode), the DC coefficient of each subblock is uniformly quantized to 255 levels (as in MPEG-1). DC-prediction is then employed to reduce the number of bits needed to encode the DC coefficients. Two predictors are maintained for luminance DC-prediction (rather than the one in MPEG-1) to increase its efficiency in switching between the frame- and field-coding modes. For chrominance DC-prediction, one predictor suffices for each color component as in MPEG-1. All DC predictors are reset to zero at the start of a slice and at a non-intra-coded macroblock.

3.2 Quantization Parameter and Quantizer Matrices

For AC-coefficient quantization, a 5-bit quantization parameter and a set of quantizer matrices are employed, just like in MPEG-1. Quantization is performed with a dead-zone for non-intra coding and without one for intra coding; the MPEG-1 reconstruction equations apply. Our proposal allows four different quantizer matrices: one for each of the combinations of intra/nonintra- and frame/field- coded macroblocks. There are no default matrices specified; the ones used are loaded and transmitted at the sequence layer. The Cb- and Cr-subblocks use the same matrices as the luminance subblocks (as in MPEG-1).

In I-pictures, all macroblocks are coded, and the 5-bit quantization parameter is transmitted for every macroblock. In P- and B- pictures, some macroblocks may contain no coded coefficient data. A one-bit flag is sent for each macroblock to signal whether the macroblock is coded or not. In P-pictures, the quantization parameter is then transmitted for every coded macroblock.

3.3 Quantization in B-Pictures

In B-pictures, a 5-bit quantization parameter is transmitted at the start of every slice. A two-bit index (denoted *mscale_addr*) is transmitted for every coded macroblock in the slice that identifies one of four multipliers (all of which are transmitted at the sequence layer). The slice quantization parameter is multiplied by the selected multiplier (denoted *mscale*), and the product is rounded

to the nearest integer and limited to 5 bits. The resulting number becomes the quantization parameter for that macroblock.

The Coded Block Pattern framework (for signalling which of the subblocks inside a macroblock contain coded data) is used only with B-pictures.

4. SCANNING AND VL CODING

4.1 Scanning of AC Coefficients

Once the AC coefficients are quantized, they are coded for transmission much as in MPEG-1. A scanning matrix ("scan") defines the order in which they are processed for encoding. Two fixed scans are defined: one for use in the frame-coding mode and the other for use in the field-coding mode. These scans do not change with the picture type. They are illustrated in Fig. 4.

4.2 VL Coding of AC Coefficients

As in MPEG-1, for non-zero quantized AC coefficients, runlength and level combinations are encoded with two-dimensional VL codebooks. For each macroblock in I- and P- pictures, we allow the encoder to select one codebook out of a small number of codebooks and transmit the necessary overhead. In this proposal, we have used four codebooks for I-pictures and four for P-pictures. These eight codebooks are derived basically by permuting the codewords in the MPEG-1 VLC. Among other things, they differ in the length of the EOB-codeword (2, 3 or 4 bits). The lengths of the codewords in the top-left corner of each codebook are shown in Figs. 5(a)-(h).

For a particular macroblock in an I- or P- picture, the codebook yielding the smallest bit-count is selected, and signalled to the decoder with a 2-bit identifier. In B-pictures, this overhead for codebook selection was found to be excessive; we have therefore used one fixed codebook for all macroblocks in B-pictures. This codebook is one of the four used with P-pictures, and is the one shown in Fig. 5(e).

5. SUMMARY OF SYNTAX

Sequence Header:

- sequence_header_code
- horizontal_size
- vertical_size
- pel_aspect_ratio
- picture_rate
- bit_rate
- intra_frame_quantizer_matrix[64]
- intra_field_quantizer_matrix[64]
- nonintra_frame_quantizer_matrix[64]
- nonintra_field_quantizer_matrix[64]
- mscale[4]

Group-of-Pictures Layer:

- group_start_code
- time_code
- closed_gop
- broken_link

Picture Layer:

- picture_start_code
- temporal_reference
- picture_coding_type
- full_pel_forward_vector (for P- and B-pictures)
- forward_f (for P- and B-pictures)
- full_pel_backward_vector (for B-pictures)
- backward_f (for B-pictures)

Slice Layer:

- slice_start_code
- quantization_parameter

Macroblock Layer in Intra-Coded MBs:

- macroblock_type
- quantization_parameter (5 bits)
- vlc_select (2 bits)

Macroblock Layer in Predictive-Coded MBs:

- macroblock_type
- motion_horizontal_forward
- motion_vertical_forward
- macroblock_code_nocode (1 bit)
- quantization_parameter (5 bits, sent when macroblock_code_nocode is "1")
- vlc_select (2 bits, sent when macroblock_code_nocode is "1")

Macroblock Layer in Bidirectionally Predictive-Coded MBs:

- macroblock_type
- motion_horizontal_forward
- motion_vertical_forward
- motion_horizontal_backward
- motion_vertical_backward
- macroblock_code_nocode (1 bit)
- mscale_addr (2 bits, sent when macroblock_code_nocode is "1")
- coded_block_pattern (sent when macroblock_code_nocode is "1")

Block Layer in Intra-Coded MBs:

- dct_dc_size

- dct_dc_differential
- dct_coeff_next
- end_of_block (codeword depends on the codebook used)

Block Layer in Non-Intra-Coded MBs:

- dct_coeff_first
- dct_coeff_next
- end_of_block (in P-pictures, codeword depends on the codebook used)

The entire set of macroblock modes for all three picture types is listed in Fig. 6.

6. COMPATIBILITY

The video syntax proposed here comes very close to being (but is not exactly) a "superset" of the MPEG-1 syntax according to the definitions in the PPD (see Fig. 3 of PPD). Hence both forward compatibility and upward compatibility with MPEG-1 are easily achieved (with minimal additional decoder complexity), whereas backward or downward compatibility with MPEG-1 do not exist.

7. CODEC DELAY

In a fully automated one-pass encoder, the delay incurred by the encoding process is 2 to 3 picture periods. The delay at the decoder is 1 to 2 picture periods (not counting any postprocessing delays). However, the encoder and decoder buffers introduce a significantly greater delay of 0.5 seconds. The total codec delay is thus 0.65 to 0.7 seconds.

8. OTHER FUNCTIONALITIES

8.1 Random Access

I-pictures provide access points roughly every 0.4 seconds. Beginning with the I-picture, the other pictures in the GOP can be decoded as necessary to obtain the desired picture from the bit-stream.

8.2 Fast Search

Fast forward and reverse are enabled by having regularly spaced I-pictures.

9. CONCLUSION

The basic features of our proposal have been presented, with all its syntactical details. A block diagram of the complete encoder and decoder are shown in Figs. 2 and 3.

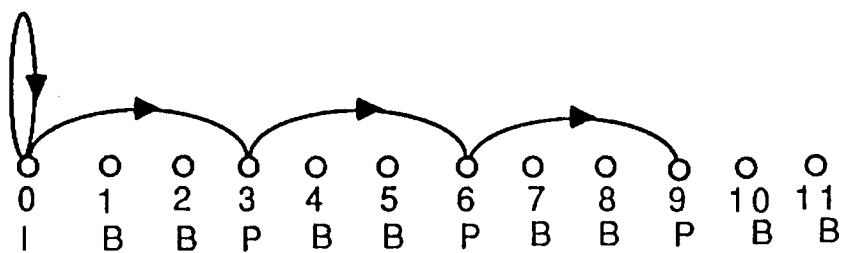


Fig. 1 Group-of-Pictures

Fig. 2 Adaptive Motion Compensated Uni/Bi-directional Predictive Encoder

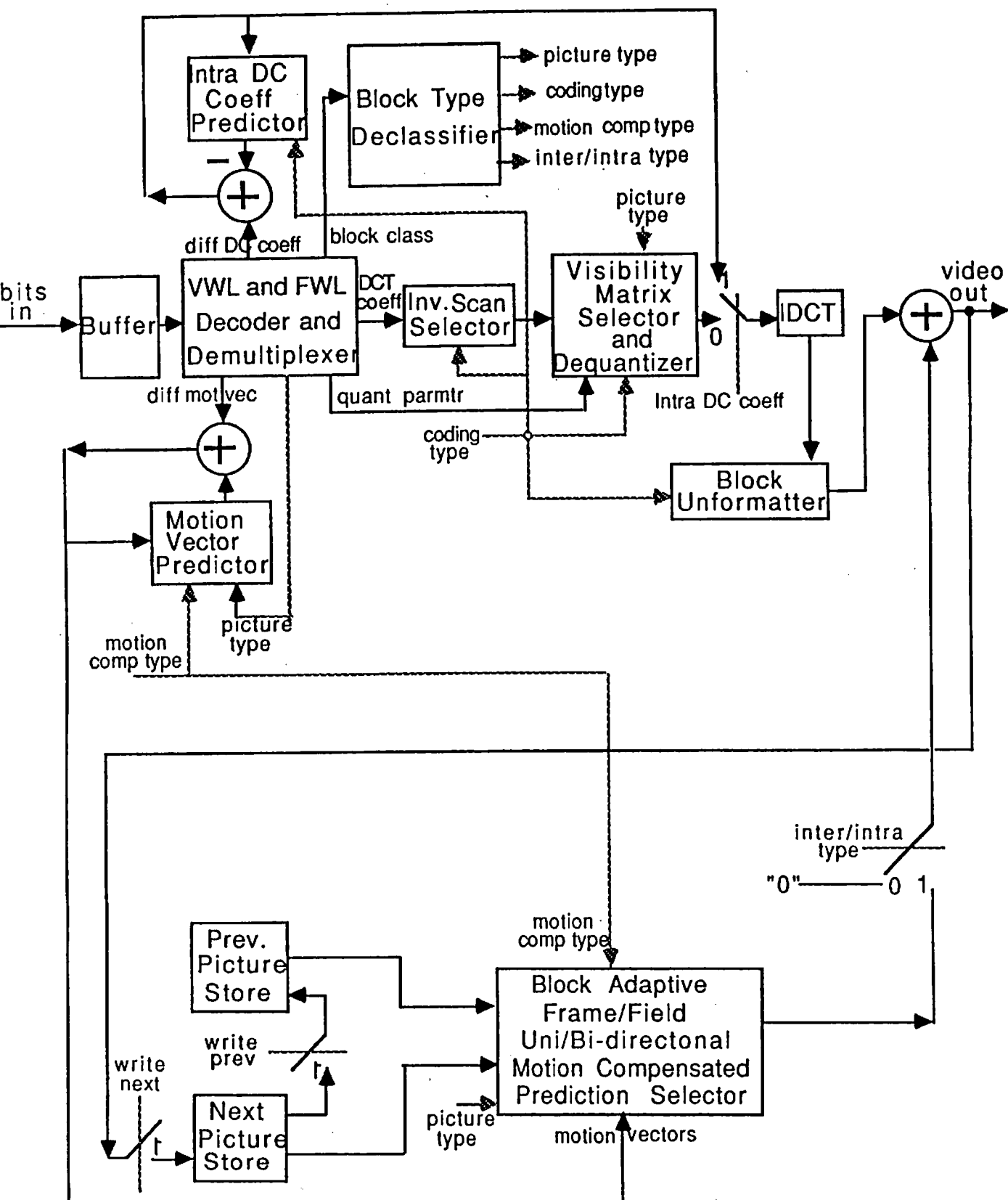
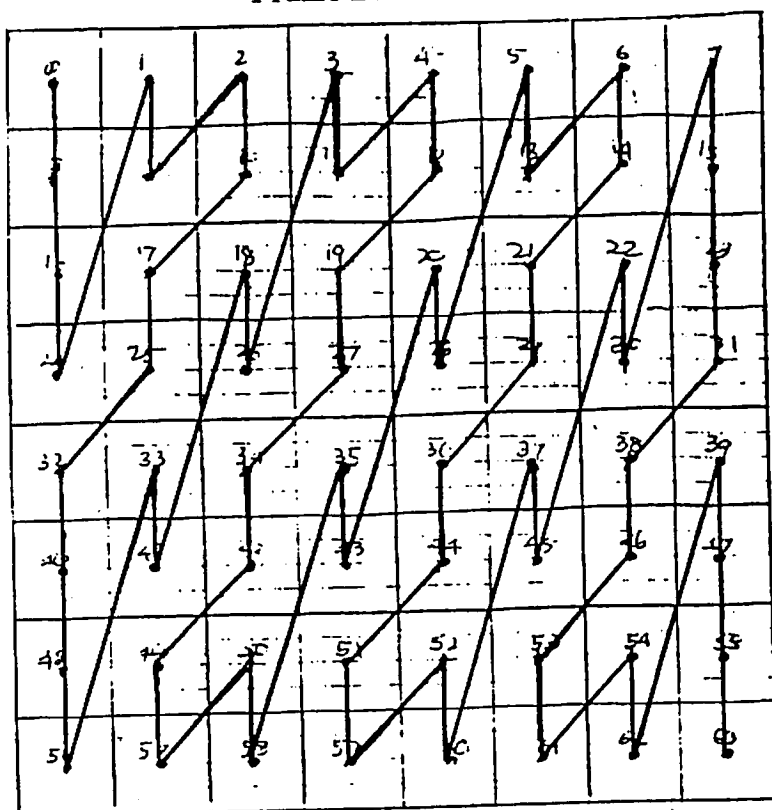


Fig. 3 Adaptive Motion Compensated Uni/Bi-directional Predictive Decoder

Frame Block Scan



Field Block Scan

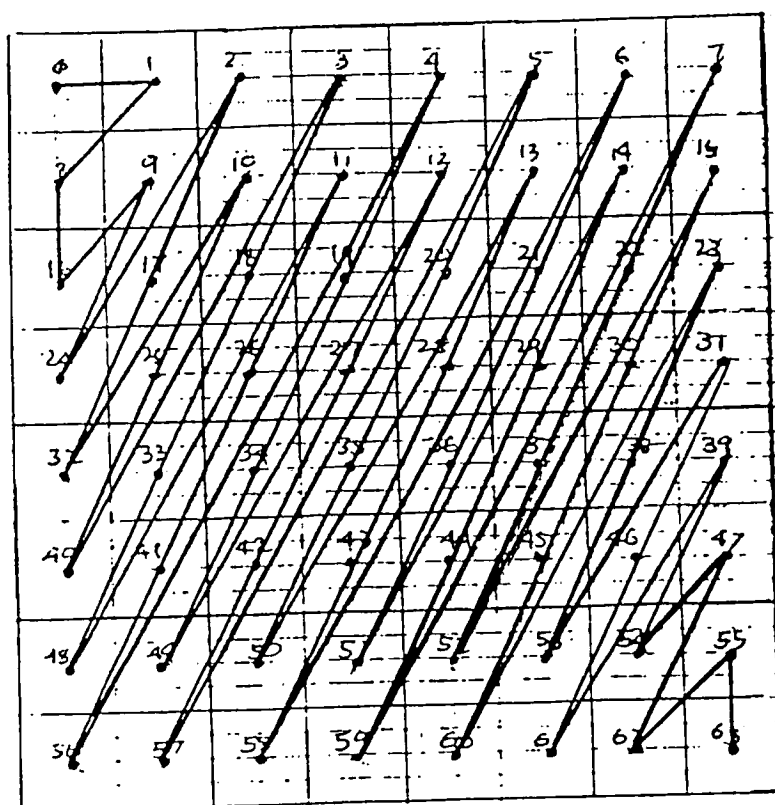


Fig. 4 Frame and Field Scans

RUN

[illegible][illegible]

Fig. 5(e): Lengths of Pred. VLC # 1 (EOB = 2 bits)

[illegible]

Fig. 5(f): Lengths of Pred. VLC #2 (EOB = 2 bits)

[illegible]

[illegible][illegible]

macroblock_type in I-pictures:

1	1	Intra, frame-code
2	01	Intra, field-code

macroblock_type in P-pictures:

1	10	16x8 frame-MC, frame-code
2	11	16x8 field-MC, frame-code
3	01	16x16 frame-MC, frame-code
4	0010	16x8 frame-MC, field-code
5	0011	16x8 field-MC, field-code
6	0001	16x16 frame-MC, field-code
7	00001	Intra, field-code
8	000001	Intra, frame-code

macroblock_type in B-pictures

1	10	16x16 frame-MCbdr, field-code
2	11	16x16 frame-MCbdr, frame-code
3	010	16x16 frame-MCb, frame-code
4	011	16x16 frame-MCb, field-code
5	0010	16x16 frame-MCf, field-code
6	0011	16x16 frame-MCf, frame-code
7	00010	16x8 frame-MCbf, frame-code
8	00011	16x8 field-MCfb, frame-code
9	000010	16x8 frame-MCfb, frame-code
10	000011	16x8 field-MCbf, frame-code
11	0000010	16x8 field-MCfb, field-code
12	0000011	16x8 frame-MCbf, field-code
13	00000010	16x8 field-MCbf, field-code
14	00000011	16x8 frame-MCfb, field-code
15	000000010	Intra, frame-code
16	000000011	Intra, field-code

FIG. 6 VLC TABLES FOR MACROBLOCK TYPES

ANNEX 1: STATISTICS

In the following pages, detailed statistics for each test sequence are presented at both 4 and 9 Mb/s. In each instance, statistics are listed for every picture, followed by by average statistics for the entire sequence and for each picture type. Next, the cumulative bit-count for each (0.4-second) GOP is given. After the statistics of the individual sequences comes an "ls -l" listing of each bitstream.

[illegible]

3.40	33.49	39.60	39.42	17.49	594	3.74	4.3	30	60	50	300	110	47	61	42	37	63.	141	91	110	1104	5735	1009	4531	10453	9958	447	3.6311
3.40	33.49	39.60	39.42	8.71	664	1307	146	110	271	223	545	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
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3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60	39.42	17.49	602	444	44	110	59	74	272	334	50	68	53	54	54	76	70	100	1190	4084	10499	16140	34515	82338	4482	6114
3.40	33.49	39.60</																										

7.41	30.73	39.12	38.44	19.25	1018	226	36	17	145	38	470	189	52	11	52	19	137	20	126	38	1194	4757	1802	1945	11592	7157	16	129	28394
6.88	31.38	39.19	38.58	9.09	666	1076	208	400	133	49	325	235	0	0	0	0	0	0	0	0	1190	4058	8982	13452	14120	79547	2330	3875	127464
8.09	29.98	39.25	38.58	18.93	737	341	75	50	70	56	296	265	42	38	43	48	159	113	52	43	1194	5349	2032	3063	10969	13565	129	139	36440
7.71	30.40	39.17	38.63	18.97	682	356	33	70	83	45	272	263	46	31	36	43	91	95	111	121	1194	5685	2062	3118	11698	11388	112	159	35416
7.33	30.82	38.66	38.46	11.44	907	1350	907	443	0	0	0	0	0	0	0	0	0	0	0	0	1245	1793	9450	18918	0	31988	11204	14577	377175
7.35	30.81	39.23	38.69	23.31	505	165	17	15	26	9	387	756	25	15	18	12	12	11	20	27	1194	3436	1680	1390	10984	5406	31	176	24297
7.47	30.66	39.11	38.69	23.36	481	147	94	233	19	11	303	548	20	14	18	22	8	4	19	37	1194	4054	1644	1277	10214	4395	31	89	22898
7.07	31.15	39.27	38.94	8.92	371	1292	115	548	83	79	173	350	0	2	0	0	0	0	0	0	1190	4660	10394	16014	13831	82921	3000	4296	136306
7.64	30.47	39.07	38.61	18.27	428	328	15	22	107	312	161	283	21	51	27	42	58	104	39	108	1194	5372	2006	2658	11519	9236	59	88	32132
8.04	30.03	39.13	38.74	18.53	423	382	13	11	170	184	175	329	20	32	22	42	88	268	35	60	1194	5661	2114	3283	11859	11696	69	128	36004
6.84	31.43	39.41	39.14	9.04	428	1107	133	373	99	177	196	472	0	0	0	0	0	0	0	0	1190	4544	9099	13794	14304	77457	2047	2697	125132
7.73	30.37	39.30	39.00	18.44	362	312	26	46	45	129	132	349	24	58	32	66	20	43	83	297	1194	6277	1874	2723	11812	11714	138	164	35996
7.17	31.02	39.40	39.10	17.93	345	252	24	114	38	131	141	327	0	0	0	0	0	0	0	0	1190	4500	9365	14214	13443	80783	1456	2591	127542
7.15	31.08	39.58	39.16	18.18	331	234	17	69	38	143	154	414	23	62	18	84	29	82	52	165	1194	5686	1818	1929	11856	7107	14	123	29727
7.12	31.08	39.58	39.16	18.18	331	234	17	69	38	143	154	414	23	62	18	84	29	82	52	165	1194	5686	1818	1929	11856	7107	14	123	29727
7.77	30.32	39.42	39.02	18.46	373	312	34	131	55	93	143	384	24	59	25	61	18	52	74	197	1194	5800	1974	2580	10630	8441	33	102	30754
7.41	30.73	38.76	38.57	11.62	810	1350	810	540	0	0	0	0	0	0	0	0	0	0	0	0	1245	1890	9450	19242	0	326791	11634	14870	385122
7.86	30.23	39.10	38.81	21.94	375	156	15	24	27	81	297	800	15	16	8	9	8	28	5	17	1194	3397	1662	1344	9737	4905	24	119	22382
8.18	29.87	39.02	38.75	21.92	367	199	28	84	22	10	254	777	13	19	14	22	14	29	22	42	1194	3801	1748	1761	10775	6330	28	111	25748
7.31	30.85	39.11	39.01	8.98	407	1314	141	526	91	112	175	305	0	0	0	0	0	0	0	0	1190	4586	10548	16506	14978	88496	2752	4638	143694
8.08	29.99	38.89	38.67	18.33	417	420	26	16	86	286	166	301	20	67	29	61	59	139	31	63	1194	5494	2190	3611	11588	11619	79	255	35940
8.00	30.07	38.92	38.68	18.26	398	419	33	162	35	83	172	334	34	74	32	83	58	140	34	76	1194	5765	2188	3661	11976	11719	85	196	36784

Overall Average Statistics

7.65 30.73 39.08 39.02 16.10 795.58 648.61 222 113 171 69 273 254 30 20 26 19 36 38 37 42 1212 4333 4675 7444 14921 60526 2019 2927 98057

Average Statistics for I-Pictures

7.04 31.35 39.16 39.30 11.95 864 1350 864 486 0 0 0 0 0 0 0 0 0 0 0 0 1414 1836 9450 17919 0 310785 11902 15636 368941

Average Statistics for P-Pictures

7.32 31.06 39.14 39.10 9.31 801 1243 374 170 197 105 217 270 13 5 0 0 0 0 0 0 0 1190 3857 10049 15494 21014 108986 3435 5061 169086

Average Statistics for B-Pictures

7.85 30.52 39.05 38.94 19.21 785 331 79 42 184 64 330 281 40 28 39 28 55 58 57 64 1194 4845 2013 3015 14600 9032 173 435 35306

Total bits for each 0.4-second GOP:

- GOP # 0: Total Bits: 1516809
- GOP # 1: Total Bits: 1634084
- GOP # 2: Total Bits: 1569660
- GOP # 3: Total Bits: 1152255
- GOP # 4: Total Bits: 1169782
- GOP # 5: Total Bits: 1240877
- GOP # 6: Total Bits: 792973
- GOP # 7: Total Bits: 746242
- GOP # 8: Total Bits: 1198491
- GOP # 9: Total Bits: 876068
- GOP # 10: Total Bits: 1003285
- GOP # 11: Total Bits: 1010391

Total number of bits for 148 frames: 14512457

Statistics for FLOWERCARDEN coded nominally at 4.0 Mb/s

SNR										MV bits										Tot. bits											
6.28	32.17	35.37	36.09	13.12	891	1350	891	459	0	0	0	0	0	0	0	0	0	0	0	0	0	3446	1809	9450	22026	0	353284	31832	22272	444119	
6.71	31.60	35.21	35.92	10.23	780	1329	253	174	278	179	0	0	0	0	0	0	0	0	0	0	0	0	1190	3843	10653	16878	22237	131275	8567	5662	200305
7.36	30.79	34.99	35.72	20.50	687	666	74	95	192	160	0	0	0	0	0	0	0	0	0	0	0	48	1194	5028	2682	6270	15690	18222	237	49889	
7.49	30.64	34.82	35.65	20.91	673	623	59	50	235	157	0	0	0	0	0	0	0	0	0	0	0	46	1194	4740	2682	6270	15690	18222	276	47579	
7.18	31.00	34.55	35.31	10.91	852	1233	203	149	238	159	0	0	0	0	0	0	0	0	0	0	0	0	1190	3707	9981	16722	23591	168163	10553	5896	239803
7.46	30.68	35.11	35.82	20.52	607	621	149	141	62	56	0	0	0	0	0	0	0	0	0	0	0	62	1194	4785	2592	5729	15616	17951	352	48929	
7.74	30.35	34.82	35.17	10.62	656	563	71	173	95	79	0	0	0	0	0	0	0	0	0	0	0	53	1194	4477	2476	5165	16043	17572	545	278	47750
7.18	31.00	34.55	35.17	10.62	784	1226	254	183	283	181	0	0	0	0	0	0	0	0	0	0	0	0	1190	3839	9932	16026	22655	145501	9906	6433	215482
7.66	30.61	34.43	35.16	20.39	567	471	66	77	88	94	0	0	0	0	0	0	0	0	0	0	0	36	1194	4443	2432	4856	14049	15204	587	263	43028
7.52	30.61	34.43	35.16	20.39	652	541	91	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1245	1809	9450	22200	0	377018	34209	24637	470568
6.62	31.71	35.06	35.49	13.43	891	1350	891	459	0	0	0	0	0	0	0	0	0	0	0	0	0	43	1194	4513	2376	4411	15568	11787	299	97	40245
8.96	29.08	34.28	35.19	28.03	720	513	202	91	42	26	0	0	0	0	0	0	0	0	0	0	0	23	1194	4182	2490	5127	16325	14631	312	100	44361
9.42	28.65	34.77	35.45	29.72	800	570	84	57	66	50	0	0	0	0	0	0	0	0	0	0	0	58	1194	5052	2950	7558	14271	23486	577	275	55363
7.21	30.97	34.75	35.22	10.49	820	1327	216	179	283	157	0	0	0	0	0	0	0	0	0	0	0	46	1194	4610	2670	5905	14582	17521	517	175	47174
7.92	30.16	34.80	35.41	19.78	639	800	71	59	239	319	0	0	0	0	0	0	0	0	0	0	0	46	1194	4581	2820	7069	15743	24137	747	252	56561
7.93	30.16	34.70	35.19	20.41	576	626	181	142	214	150	0	0	0	0	0	0	0	0	0	0	0	38	1194	4599	2820	7069	15743	24137	747	252	56561
7.43	30.71	34.51	35.10	10.79	675	735	203	84	58	39	0	0	0	0	0	0	0	0	0	0	0	36	1194	4638	3044	8408	17378	33288	689	183	68822
8.62	29.42	34.34	35.13	21.89	675	735	203	84	58	39	0	0	0	0	0	0	0	0	0	0	0	48	1194	4565	2854	6944	14912	20226	508	212	51415
9.41	28.66	34.36	34.52	10.71	791	1249	231	176	260	195	0	0	0	0	0	0	0	0	0	0	0	48	1194	4565	2854	6944	14912	20226	508	212	51415
7.55	30.57	34.06	34.81	21.01	695	752	75	55	179	170	0	0	0	0	0	0	0	0	0	0	0	35	1194	4286	2608	5422	13810	14406	390	202	42318
8.32	29.72	34.17	34.61	21.01	695	752	75	55	179	170	0	0	0	0	0	0	0	0	0	0	0	0	1245	1749	9450	22212	0	378490	34452	25185	472783
6.72	31.58	35.00	35.21	13.46	951	1350	951	399	0	25	0	0	0	0	0	0	0	0	0	0	0	23	1194	3935	1984	2745	14024	7651	258	98	31889
8.72	29.84	34.09	34.66	21.15	629	752	75	55	179	170	0	0	0	0	0	0	0	0	0	0	0	23	1194	3935	1984	2745	14024	7651	258	98	31889
7.92	30.16	34.52	34.97	26.97	756	317	86	54	79	25	0	0	0	0	0	0	0	0	0	0	0	27	1194	4438	2386	4460	14615	10574	279	98	38044
7.92	30.16	34.52	34.97	26.97	756	317	86	54	79	25	0	0	0	0	0	0	0	0	0	0	0	27	1194	4438	2386	4460	14615	10574	279	98	38044
6.94	31.31	35.22	35.61	10.28	760	1338	188	138	188	174	0	0	0	0	0	0	0	0	0	0	0	49	1194	5343	3010	8317	15601	28982	655	302	63404
8.24	29.81	34.40	34.91	20.92	619	679	37	38	169	142	0	0	0	0	0	0	0	0	0	0	0	55	1194	4640	2790	6628	15334	19087	461	151	50285
7.76	30.33	34.89	35.25	20.92	619	679	37	38	169	142	0	0	0	0	0	0	0	0	0	0	0	55	1194	4640	2790	6628	15334	19087	461	151	50285
7.15	31.05	34.88	35.28	10.54	822	1263	224	175	291	150	0	0	0	0	0	0	0	0	0	0	0	72	1194	4773	2708	5908	14092	153265	9057	5424	221409
7.82	30.27	34.90	35.48	20.79	750	720	81	60	142	149	0	0	0	0	0	0	0	0	0	0	0	55	1194	4640	2790	6628	15334	19087	461	151	50285
7.93	30.15	34.66	35.18	20.19	731	745	71	58	261	224	0	0	0	0	0	0	0	0	0	0	0	46	1194	4961	2700	6198	14411	16607	513	140	46724
7.36	30.80	34.46	35.02	10.62	853	1254	205	145	220	118	0	0	0	0	0	0	0	0	0	0	0	44	1194	5328	2980	7885	15226	23368	685	157	56823
7.75	30.35	34.50	35.17	20.23	633	675	129	216	81	58	0	0	0	0	0	0	0	0	0	0	0	0	1245	1771	9450	22260	0	383087	34959	25489	478261
8.25	29.80	34.31	34.96	20.16	770	815	184	144	117	40	0	0	0	0	0	0	0	0	0	0	0	0	1245	1771	9450	22260	0	383087	34959	25489	478261
6.76	31.53	34.98	35.29	13.54	929	1350	929	421	0	236	0	0	0	0	0	0	0	0	0	0	0	51	1194	4560	2544	5200	14792	12805	311	102	41508
8.88	29.16	34.36	35.18	28.05	688	597	70	51	183	430	0	0	0	0	0	0	0	0	0	0	0	44	1194	4429	2022	2776	12860	6578	226	66	30151
7.81	30.28	34.75	35.24	26.77	525	336	63	45	154	161	0	0	0	0	0	0	0	0	0	0	0	0	1190	3760	10660	17424	20055	144394	7984	4810	210277
7.29	30.88	34.70	35.10	10.36	822	1330	258	166	252	161	0	0	0	0	0	0	0	0	0	0	0	39	1194	4419	2530	5001	14503	11706	329	117	39799
7.48	30.65	34.94	35.23	21.09	800	727	72	61	207	97	0	0	0	0	0	0	0	0	0	0	0	40	1194	4553	2804	6672	14123	17307	412	130	47195
7.97	30.10	34.64	35.03	21.07	800	727	72	61	207	97	0	0	0	0	0	0	0	0	0	0	0	0	11								

[illegible]

SNR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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0.10	28.05	32.97	32.99	23.07	733	433	109	131	87	43	311	265	51	42	56	50	55	36	64	50	1194	5085	2216	3929	10487	14346	164	693	38114		
9.10	28.95	33.25	33.44	10.59	750	1299	344	383	182	69	222	147	2	1	0	0	0	0	0	0	1190	3909	10443	16038	12029	107290	8164	10514	169577		
9.90	28.22	33.30	33.26	23.30	748	339	33	43	128	103	378	304	41	35	56	38	53	37	59	41	1194	4648	2028	3222	10521	16604	254	895	39366		
10.20	27.96	33.02	33.08	23.06	741	392	21	17	193	204	294	223	51	39	64	53	69	41	49	32	1194	4868	2134	3653	10762	16723	323	804	40461		
8.68	29.36	33.54	33.90	13.80	1102	1350	1102	248	0	0	0	0	0	0	0	0	0	0	0	0	1245	1598	9450	22734	0	416292	49283	51877	552479		
9.37	28.69	33.92	34.09	28.18	497	226	21	25	23	27	380	696	26	23	20	25	13	20	14	35	1194	3688	1802	2192	10292	7588	196	501	27453		
9.48	28.60	33.96	34.07	28.46	427	253	53	53	17	15	249	729	25	22	26	33	34	35	23	34	1194	4006	1856	2384	11172	8173	131	434	29350		
8.89	29.16	33.68	33.95	10.44	473	1342	197	613	144	126	132	138	0	0	0	0	0	0	0	0	1190	4454	10744	16464	12246	101334	5334	6583	158349		
9.51	28.48	33.43	33.54	21.99	437	472	13	25	111	123	176	554	23	59	27	38	43	60	44	54	1194	4656	2294	4015	10874	12473	246	720	36472		
9.37	28.69	33.41	33.56	22.26	441	364	4	19	160	352	156	316	25	72	34	53	29	42	33	55	1194	4916	2078	3304	9928	10502	226	427	32575		
8.83	29.21	33.61	33.75	10.49	663	1297	415	484	181	110	65	93	2	0	0	0	0	0	0	0	1190	4082	10429	15906	11353	88140	5249	6926	143275		
9.22	28.84	33.31	33.43	22.15	462	362	33	61	96	196	158	365	34	64	37	54	42	59	62	89	1194	4368	1920	2567	9967	8371	206	436	29079		
9.17	28.88	33.49	33.66	22.74	476	285	17	33	98	124	239	552	40	60	26	31	34	41	22	33	1194	4588	2058	3077	10328	10138	358	820	33061		
9.19	28.86	33.23	33.41	10.61	796	1310	460	228	195	67	138	257	3	2	0	0	0	0	0	0	64	1194	5088	2058	3077	10328	10138	358	820	33061	
9.60	28.49	33.37	33.46	22.71	553	354	23	22	142	208	216	326	49	64	39	57	34	56	50	64	1194	4446	1828	2264	9571	8417	303	744	28767		
9.39	28.67	33.23	33.30	23.56	558	239	32	25	89	129	304	469	37	51	35	38	26	33	35	47	1194	4446	1828	2264	9571	8417	303	744	28767		
8.78	28.26	33.25	33.62	13.90	1222	1350	1222	128	0	0	0	0	0	0	0	0	0	0	0	0	1245	1478	9450	23034	0	425730	51751	54569	567257		
9.62	28.46	33.76	34.00	28.25	574	221	21	24	27	79	432	539	27	17	24	26	6	20	37	71	1194	4000	1792	2045	9850	7508	188	420	26997		
9.32	28.75	33.66	33.95	28.40	438	166	22	27	26	43	324	776	26	17	24	13	7	17	8	19	1194	3469	1682	1605	9135	6492	141	296	24014		
8.97	29.07	32.99	33.28	10.45	513	1341	318	697	140	75	54	65	1	0	0	0	0	0	0	0	1190	4378	10737	16440	9659	102322	6720	7964	159410		
9.46	28.62	33.11	33.37	23.10	595	263	17	16	270	349	143	194	55	62	50	65	32	27	28	42	1194	5047	1876	2375	8608	10946	238	402	30686		
9.66	28.43	33.18	33.51	23.26	570	280	11	42	205	185	244	419	39	43	30	39	22	22	19	30	1194	4327	1910	2493	8943	11343	328	531	31069		
Total bits for each 0.4-second OCP																															
OCP # 0: Total Bits: 1633057																															
OCP # 1: Total Bits: 1435037																															
OCP # 2: Total Bits: 1315068																															
OCP # 3: Total Bits: 1402366																															
OCP # 4: Total Bits: 1431584																															
OCP # 5: Total Bits: 1508173																															
OCP # 6: Total Bits: 1529341																															
OCP # 7: Total Bits: 1427129																															
OCP # 8: Total Bits: 1396886																															
OCP # 9: Total Bits: 1399296																															
OCP # 10: Total Bits: 1351699																															
OCP # 11: Total Bits: 1261382																															

Total number of bits for 148 frames: 17879440

[illegible]

Statistics for FLOWERGARDEN coded nominally at 9.0 Mb/s

SNR										MV bits										Tot. bits											
3.17	38.10	40.28	40.15	6.02	891	1350	891	459	0	0	0	0	0	0	0	0	0	0	0	0	0	3446	1809	9450	25200	0	653976	71151	60891	825923	
3.31	37.73	39.98	39.80	4.69	877	1350	259	134	162	298	173	0	0	0	0	0	0	0	0	0	0	0	1190	3658	10800	20406	22136	363712	29106	24456	475464
4.60	34.88	38.62	39.00	10.66	769	1086	117	124	156	210	138	60	31	57	37	78	59	34	36	1194	5211	3526	12068	14793	68400	2701	1608	109501	1508	105114	
4.65	34.79	38.66	38.96	10.75	727	1046	57	51	260	162	228	249	51	31	44	29	49	53	38	48	1194	4857	3442	11171	14806	65555	2528	1561	105114	105114	
3.61	36.97	39.00	38.75	5.04	887	1343	173	134	242	157	471	169	1	0	0	0	0	0	0	0	1190	3633	10751	19854	23738	413695	34483	27077	534421	34483	
4.77	34.56	38.76	38.91	11.96	717	899	253	191	70	46	230	248	38	22	42	31	44	43	40	52	1194	5088	3148	9381	14453	50295	1851	1080	86490	86490	
4.98	34.19	38.61	38.73	11.86	739	961	77	70	116	73	374	343	29	15	52	26	37	34	54	50	1194	4472	3272	9922	15705	57001	1451	919	93936	93936	
3.47	37.28	39.26	38.30	4.77	857	1338	250	163	322	173	284	155	1	2	0	0	0	0	0	0	1190	3692	10716	20676	22768	384850	34069	30322	508283	30322	
4.59	34.94	38.33	38.31	11.16	640	815	64	62	84	64	314	469	42	33	50	24	35	25	51	33	1194	4368	2980	8489	15075	47934	2454	1412	83906	83906	
4.60	34.76	38.41	38.41	11.00	689	881	91	51	155	237	278	282	39	18	48	20	36	22	42	31	1194	4456	3112	9038	13428	48727	2094	987	83026	83026	
3.30	37.76	40.02	39.69	6.07	891	1350	891	459	0	0	0	0	0	0	0	0	0	0	0	0	1245	1809	9450	25686	0	704880	78034	68905	890009	890009	
5.60	33.16	37.63	37.95	13.25	844	977	349	118	38	24	295	262	37	16	48	20	36	22	42	31	1194	4811	3304	10396	14594	67590	1935	909	104733	104733	
5.94	32.65	38.18	38.43	13.76	886	1012	87	55	72	52	512	281	51	14	50	13	32	21	82	28	1194	4308	3374	10663	16310	85996	1682	842	124369	124369	
3.61	36.97	39.17	38.80	4.95	861	1350	203	160	287	160	367	167	4	2	0	0	0	0	0	0	28	1194	4308	3374	10663	16310	85996	1682	842	124369	124369
5.26	33.70	38.39	38.66	11.91	784	1116	87	63	40	313	234	184	228	21	20	34	22	60	44	44	45	1194	4711	3480	10822	13071	57082	1479	812	92651	92651
5.03	34.09	38.48	38.43	11.46	717	1065	61	40	313	234	184	228	21	20	34	22	60	44	44	45	1194	4711	3480	10822	13071	57082	1479	812	92651	92651	
3.78	36.58	38.67	38.47	5.14	914	1344	294	92	59	40	242	375	37	17	38	24	49	26	26	31	1194	4622	3438	11229	14479	77905	2698	1020	151977	151977	
5.07	32.51	37.53	37.82	12.22	776	1093	78	72	83	63	345	333	36	25	43	28	75	23	116	30	1194	4693	3536	12148	16849	113463	2216	1008	155107	155107	
3.78	36.58	38.52	38.02	5.04	792	1342	170	183	253	205	368	169	1	1	0	0	0	0	0	0	31	1194	4505	3330	9903	12926	51167	1438	777	85040	85040
5.41	33.46	37.56	37.66	12.13	789	1037	73	63	224	136	332	247	43	31	33	27	48	26	36	31	1194	4305	3330	9903	12926	51167	1438	777	85040	85040	
5.22	33.78	37.72	37.62	12.06	750	990	64	44	313	175	232	307	38	17	34	16	37	20	32	21	1194	4305	3330	9903	12926	51167	1438	777	85040	85040	
3.36	37.60	39.91	39.43	6.11	951	1350	951	399	0	0	0	0	0	0	0	0	0	0	0	0	1245	1749	9450	25812	0	710881	79075	72001	900213	900213	
5.16	33.88	37.91	37.88	13.61	788	789	149	105	64	16	409	344	37	20	38	23	63	32	28	22	1194	4378	2928	7674	13704	35395	1151	607	67031	67031	
5.57	33.21	37.41	37.97	13.92	911	967	118	89	183	52	334	175	45	13	57	22	140	53	34	35	1194	4919	3284	9956	14036	35388	1447	696	88920	88920	
3.44	37.41	39.76	39.48	4.73	862	1350	203	121	290	133	368	233	1	1	0	0	0	0	0	0	1190	3681	10800	21036	20909	377426	27748	24992	487782	487782	
5.15	33.89	38.01	38.23	10.51	925	1171	37	44	200	126	285	279	42	13	33	26	55	104	53	53	1194	4878	3562	11865	13763	63883	1985	1360	102490	102490	
4.86	34.44	38.80	38.71	10.83	871	1106	188	161	321	152	361	166	1	0	0	0	0	0	0	0	1190	3662	10751	20622	22036	397454	31528	27389	514632	514632	
3.56	37.11	39.35	38.87	4.86	801	1343	188	161	321	152	361	166	1	0	0	0	0	0	0	0	31	1194	4568	3362	10797	14707	63827	1658	889	101065	101065
5.00	34.16	38.28	38.65	11.55	864	1006	91	76	149	124	426	184	46	19	51	27	52	29	49	20	1194	4568	3362	10797	14707	63827	1658	889	101065	101065	
5.05	34.07	38.26	38.39	11.55	796	1010	71	46	334	254	239	142	29	20	42	17	52	54	29	20	1194	4568	3362	10797	14707	63827	1658	889	101065	101065	
3.65	36.88	38.86	38.54	4.92	930	1336	192	119	246	100	492	201	32	27	24	19	100	73	43	32	1194	5308	3210	9731	13159	51571	1903	1032	87108	87108	
4.93	33.50	37.63	37.81	12.06	837	1053	263	149	131	31	186	144	31	26	47	24	124	106	55	33	1194	5547	3456	11304	14231	67464	1891	993	106080	106080	
5.30	32.51	37.84	38.12	13.82	810	1031	69	63	274	192	268	161	42	27	51	28	51	21	55	48	1194	4819	3412	10825	14624	64543	1741	678	101836	101836	
5.80	32.86	37.74	38.42	13.82	810	1031	69	63	274	192	268	161	42	27	51	28	51	21	55	48	1194	4819	3412	10825	14624	64543	1741	678	101836	101836	
5.06	34.05	38.41	38.63	13.25	823	854	60	42	277	469	151	120	25	21	49	20	30	18	31	37	1194	4649	3058	8006	11492	31232	1127	494	61252	61252	
3.62	36.95	39.21	38.85	4.82	895	1350	260	144	286	151	348	160	1	0	0	0	0	0	0	0	1190	3614	10800	21162	20176	400317	28792	24744	510795	510795	
4.75	34.60	38.94	38.85	11.01	820	1042	125	98	128	61	402	267	38	28	34	22	61	29	32	25	1194	4473	3434	10755	13758	48741	1471	689	84515	84515	
5.15	33.90	38.41	38.46	11.37	917	1116	94	65	229	95	409	160	30	23	34	29	74	29	47	32	1194	4594	3582	11875	13632	65069	1723	819	102488	102488	
3.77	36.59	38.71</																													

6.24 32.23 37.23 36.83 13.05 916 1060 61 33 36 35 689 291 33 17 30 19 16 18 41 21 1194 3836 3470 11196 14200 76819 1168 666 112549 643500
3.93 32.67 37.17 38.84 38.40 6.36 1179 1350 1179 171 0 0 0 0 0 0 0 0 0 19 1194 4019 3384 10448 10297 55791 1124 779 87036
5.17 33.85 37.92 37.41 14.04 599 569 88 33 18 20 408 650 34 15 29 11 6 10 16 12 1194 3552 2488 4895 10981 17374 354 323 41161 90792 107537
5.24 33.75 37.96 37.66 14.17 728 632 71 22 34 28 512 515 38 15 44 18 12 9 17 15 1194 3651 2614 5430 10661 18122 378 283 42533 90792 107537
3.93 36.24 38.20 37.83 5.07 944 1350 234 191 315 127 394 88 1 0 0 0 0 0 0 0 1190 3516 10800 21618 17391 454666 35107 28088 572376 41836 36933 643500
5.28 33.68 38.04 37.89 11.80 608 1086 153 140 98 52 269 486 26 10 16 16 20 25 18 1194 4099 3522 10762 10232 44360 1235 785 76189 572376
5.18 33.84 38.00 37.83 11.69 707 1007 32 16 195 121 402 453 19 14 28 11 11 17 20 11 1194 3675 3364 9580 10431 39549 855 588 69236 76189 572376
3.74 36.67 38.53 38.04 4.70 1058 1346 474 141 435 87 148 64 1 0 0 0 0 0 0 0 1190 3288 10772 22512 13993 401578 35141 33109 521583 76189 572376
5.01 34.13 37.86 37.66 11.07 645 997 86 56 74 76 326 439 33 17 35 22 35 41 56 54 1194 4441 3344 10121 16691 44249 1286 1100 76426 76189 572376
4.87 34.38 38.19 37.85 11.00 821 921 81 23 226 135 422 326 32 13 28 20 4 12 8 1194 3835 3192 9053 9420 36942 997 710 65343 76189 572376
3.78 36.59 38.36 37.86 4.81 969 1346 363 154 401 123 205 104 0 0 0 0 0 0 0 0 1190 3462 10772 22266 14979 408079 36515 32160 529423 76189 572376
5.26 33.72 37.35 37.39 11.48 1094 1019 87 26 234 96 515 129 51 16 38 14 33 21 46 44 1194 4392 3388 10578 10088 54829 1166 721 86356 76189 572376
5.28 33.69 37.59 37.50 11.48 878 1031 64 24 479 231 257 174 29 12 18 9 15 13 16 9 1194 4101 3412 10730 8829 55880 1242 929 86317 76189 572376
3.65 36.89 38.80 38.32 6.36 1175 1350 1175 175 0 0 0 0 0 0 0 0 0 0 0 1245 1525 9450 26526 0 798999 98281 92367 1028393 76189 572376
4.92 34.29 38.38 38.02 14.32 515 612 74 49 29 22 314 673 28 19 28 13 19 24 23 35 1194 3851 2574 5161 10070 14814 518 304 38486 76189 572376
4.97 34.20 38.25 38.00 13.97 634 691 91 42 65 71 374 516 39 29 28 19 17 20 20 19 1194 3956 2732 5973 9815 16607 533 492 41302 76189 572376
4.07 35.95 37.48 36.98 5.14 1003 1349 437 161 297 134 269 52 0 0 0 0 0 0 0 0 1190 3394 10793 21708 15389 500561 44666 38622 636323 76189 572376
5.58 33.20 38.02 37.60 11.88 738 1125 144 47 100 45 419 459 15 10 12 12 12 29 27 10 1194 3819 3600 11264 10631 56767 835 651 88761 76189 572376
5.90 32.71 37.55 37.13 12.00 627 1110 49 27 121 53 354 578 29 10 20 8 20 13 34 34 1194 3767 3570 11240 11675 70144 788 473 102851 76189 572376

Overall Average Statistics																													
4.84	34.60	38.29	38.09	10.01	813.23	1110.01	207	106	162	103	343	263	23	14	25	15	27	18	26	17	1212	3898	5728	14216	13682	216225	17040	14757	286758
Average Statistics for I-Pictures																													
3.46	37.37	39.53	39.15	6.24	1013	1350	1013	337	0	0	0	0	0	0	0	0	0	0	0	1414	1687	9450	26115	0	747579	85590	77653	949489	
Average Statistics for P-Pictures																													
3.80	36.54	38.58	38.14	5.06	913	1347	221	147	271	158	419	132	1	1	0	0	0	0	0	1190	3578	10778	20823	20042	444788	34739	29804	565742	
Average Statistics for B-Pictures																													
5.41	33.50	38.01	37.93	12.38	749	989	95	60	141	96	360	348	35	21	38	22	41	28	39	26	1194	4312	3328	10143	13096	59445	1264	733	93515
Total bits for each 0.4-second GOP:																													
GOP # 0: Total Bits: 3135166																													
GOP # 1: Total Bits: 3370089																													
GOP # 2: Total Bits: 3232836																													
GOP # 3: Total Bits: 3297215																													
GOP # 4: Total Bits: 3479695																													
GOP # 5: Total Bits: 3279561																													
GOP # 6: Total Bits: 3300037																													
GOP # 7: Total Bits: 3111709																													
GOP # 8: Total Bits: 4019618																													
GOP # 9: Total Bits: 3698832																													
GOP # 10: Total Bits: 3468588																													
GOP # 11: Total Bits: 3190574																													

Total bits for each 0.4-second GOP:
GOP # 0: Total Bits: 3135166
GOP # 1: Total Bits: 3370089
GOP # 2: Total Bits: 3232836
GOP # 3: Total Bits: 3297215
GOP # 4: Total Bits: 3479695
GOP # 5: Total Bits: 3279561
GOP # 6: Total Bits: 3300037
GOP # 7: Total Bits: 3111709
GOP # 8: Total Bits: 4019618
GOP # 9: Total Bits: 3698832
GOP # 10: Total Bits: 3468588
GOP # 11: Total Bits: 3190574

Total number of bits for 148 frames: 42440248

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Statistics for POPPLE coded nominally at 9.0 Mb/s

SNR										MV bits										Tot. bits																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
3.95	36.19	40.16	40.50	6.08	784	1350	784	566	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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

5.36	33.54	38.90	39.30	9.87	641	1040	36	62	58	48	209	197	70	89	92	77	94	111	82	124	1194	6393	3430	11870	38833	58031	10209	9406	13936G		
5.41	33.47	38.64	39.20	9.92	651	1045	48	62	34	38	213	225	86	59	76	70	92	112	102	131	1194	6312	3440	12001	39530	61599	10491	9661	144228		
4.48	35.11	39.43	39.93	5.05	628	1350	142	131	205	241	281	347	0	3	66	111	85	120	89	131	1194	6437	10800	9885	39886	64792	11355	10065	146714		
5.76	32.92	38.29	38.96	10.34	577	875	38	41	35	51	197	240	67	78	80	77	76	133	93	114	1194	6310	3092	9980	39810	69695	10920	9478	150478		
5.86	32.77	38.31	38.97	10.38	599	871	41	73	44	47	185	241	80	65	80	77	76	133	93	114	1194	6310	3092	9980	39810	69695	10920	9478	150478		
4.49	35.09	39.43	39.97	5.06	614	1350	138	123	195	214	281	399	0	72	78	88	81	133	110	114	1194	6342	3124	10305	40931	68992	10687	9941	151516		
5.89	32.72	38.05	38.88	10.37	641	887	39	38	35	23	225	241	73	70	83	88	98	119	79	139	1194	6280	3112	10035	40725	61882	10269	9187	142684		
5.68	33.05	38.19	38.89	10.42	660	881	29	42	27	27	270	215	74	60	83	88	98	119	79	139	1194	6280	3112	10035	40725	61882	10269	9187	142684		
3.75	32.94	38.41	39.11	5.85	579	1350	579	771	0	0	0	0	0	69	63	77	89	137	118	118	1194	6642	3310	10665	40548	54943	10653	9645	137178		
5.75	32.94	38.41	39.11	5.85	579	1350	579	771	0	0	0	0	0	69	63	77	89	137	118	118	1194	6642	3310	10665	40548	54943	10653	9645	137178		
5.61	33.16	38.54	39.26	10.67	617	980	44	65	22	26	187	204	76	65	83	76	92	158	113	138	1194	6642	3310	10665	40548	54943	10653	9645	137178		
4.09	35.89	40.66	41.12	4.90	513	1350	83	85	148	219	281	532	1	1	0	0	0	0	0	100	176	1194	6873	3486	12917	41131	63374	12179	11071	142444	
5.11	33.97	39.16	39.77	9.49	539	1068	34	51	37	55	132	206	52	78	80	77	104	167	100	176	1194	6873	3486	12917	41131	63374	12179	11071	142444		
5.09	34.00	39.03	39.70	9.64	522	1044	28	44	40	40	151	246	59	81	74	99	85	154	85	163	1194	6713	3438	12585	40380	62859	34865	32456	375854		
3.93	36.25	40.67	41.03	4.82	509	1350	133	107	157	208	219	525	0	0	0	0	0	0	0	0	1194	6713	3438	12585	40380	62859	34865	32456	375854		
4.77	34.57	39.06	39.67	9.47	548	914	25	44	44	49	171	273	61	70	76	65	80	158	91	142	1194	6401	3178	11107	42196	62575	13728	12569	155648		
4.75	34.60	39.14	39.74	9.51	550	937	116	99	160	226	245	502	0	2	0	0	0	0	0	123	1194	6244	3224	11321	41818	55618	13406	11803	144628		
3.87	36.37	40.66	40.80	4.80	521	1350	116	99	160	226	245	502	0	2	0	0	0	0	0	123	1194	6244	3224	11321	41818	55618	13406	11803	144628		
4.63	34.82	39.34	39.75	9.70	495	900	29	66	27	40	185	331	39	75	60	70	79	144	76	124	1194	6133	3150	10956	41913	52528	14755	13373	144002		
3.24	37.91	42.52	42.71	5.53	406	1350	406	944	0	0	0	0	0	0	0	0	0	0	0	0	1245	2294	9450	17940	0	373175	50680	44441	499225	141218	
4.61	34.85	38.93	39.33	10.42	468	933	31	60	31	48	139	319	57	69	51	83	77	144	82	159	1194	6404	3216	11937	42972	48348	14495	12702	141218		
4.62	34.85	38.94	39.51	10.20	525	994	45	48	29	50	179	284	72	77	59	71	105	155	86	137	1194	6524	3338	12618	43073	46619	16237	14506	144059		
3.70	36.76	41.72	41.74	4.71	427	1350	61	102	157	258	299	562	0	1	0	0	0	0	0	0	1194	6524	3338	12618	43073	46619	16237	14506	144059		
4.32	35.42	39.91	40.41	9.12	461	1075	24	57	53	68	92	264	68	82	74	83	79	160	71	175	1194	6755	3500	13891	43050	62166	20867	18934	170105		
4.39	35.28	39.84	40.21	9.14	440	1119	17	49	31	67	100	290	53	74	69	96	91	176	78	153	1194	6698	3588	14317	42845	61662	20867	18934	170105		
3.71	36.75	41.30	41.36	4.76	388	1350	97	103	138	250	152	601	1	8	0	0	0	0	0	0	1190	4636	10800	17724	46998	235018	49743	46650	512759	179710	
4.34	35.38	39.56	39.93	9.39	419	998	23	33	42	51	123	322	58	85	52	78	72	178	72	182	1194	6680	3462	13363	42560	67182	24623	22407	182357	4423390	
4.42	35.23	39.44	39.81	9.40	394	1056	30	65	27	51	123	322	42	67	52	83	58	176	62	189	1194	6566	3462	13363	42560	67182	24623	22407	182357	4423390	
3.79	36.57	40.87	41.05	4.84	370	1350	82	89	142	234	146	650	0	7	0	0	0	0	0	0	1190	4667	10800	17754	47707	253502	55106	51664	4423390	25834	
4.44	35.19	39.39	39.72	9.56	381	1032	11	59	35	57	118	301	58	69	46	63	52	207	60	204	1194	6756	3414	14755	43152	79893	28615	25834	20360	210360	
4.55	34.97	39.33	39.73	9.53	348	1047	22	107	17	35	100	310	46	72	50	72	49	199	63	200	1194	6786	3444	15173	42356	84891	26628	26254	569811	569811	
3.49	37.27	42.27	42.64	6.07	319	1350	319	1031	0	0	0	0	0	0	0	0	0	0	0	0	1245	2381	9450	18198	0	406657	59626	62254	569811	569811	
4.81	34.49	38.53	39.12	11.19	340	1056	20	83	12	71	116	326	37	77	43	60	60	221	52	168	1194	6557	3462	16511	41773	78063	27136	24019	199117	507857	
5.04	34.49	38.53	39.12	11.19	340	1056	20	83	12	71	116	326	37	77	43	60	60	221	52	168	1194	6557	3462	16511	41773	78063	27136	24019	199117	507857	
5.23	33.76	38.79	39.35	9.95	330	1211	18	36	32	98	155	806	1	4	0	0	0	0	0	0	216	1194	6843	3772	17786	42830	104466	34271	31417	246990	246990
5.41	33.47	38.65	39.30	10.05	330	1211	12	78	32	62	95	292	38	56	41	78	49	240	63	207	1194	6865	3772	18097	42265	109109	34271	31417	246990	246990	
5.42	35.19	40.03	40.28	5.30	299	1350	59	61	131	292	108	693	1	5	0	0	0	0	0	0	1190	4811	10800	18750	48350	304818	3680	30349	33176	265073	265073
4.44	33.44	38.34	38.70	10.35	288	1169	25	73	22	99	95	360	42	77	29	71	42	176	33	199	1194	6470	3688	18599	41656	124460	3510	33176	265073	265073	
5.71	32.99	38.09	38.55	10.37	288	1169	17	78	23	45	108	343	32	83	33	74	42	210	33	214	1194	6750	3768	18599	41656	124460	3510	33176	265073	265073	
4.49	35.09	39.52	39.80	5.47	328	1350	37	56	147	240	141	722	3	4	0	0	0	0	0	0	1190	4760	10800	18744	49552	317372	69946	66228	538592	538592	
5.67	33.07	38.82	39.34	10.59	278	1200	16	54	29	119	98	322	32	84	30	56	32	197	41	232	1194	6683	3750	19081	40549	127933	37952	34907	272049	272049	
5.87	32.76	37.57	37.91	10.62	282	1224	12	68	28	61	107	345	40	69	37	80	21	201	35	213	1194	6751	3798	19475	40280	143261	41313	39287	295359	295359	
3.83	36.46	41.54	41.51	6.78	269	1350	269	1081	0	0	0	0	0	0	0	0	0	0	0	0	1245	2431	9450	19518	0	440020	87835	79717	640216	640216	
5.93	32.67	37.01	37.51	12.71	335	1183	25	35	19	118	139	292	43	73	32	75	42	194	34	221	1194	6652	3716	18664	41214	101035	35194	31196	238865	238865	
6.09	32.43	37.09	37.44	12.71	307	1213	12	78	28	49	113	317	48	78	40	72	36	229	30	204	1194	6806	3776	19361	41154	105910	37912	34200	250313	250313	
4.38	35.30	40.30	40.76	5.36	365	1350	58	60	36	120	66	277	45	89	53	64	51	180	32	239	1194	6920	3912	20775	39264	138607	48852	41460	298984	298984	
5.57	33.22	38.14	38.65	10.22	310	1281	26	60	36	120	66	277	45	89	53	64	51	180	32	239	1194	6920	3912	20775	39264	138607	48852	41460			

[illegible]