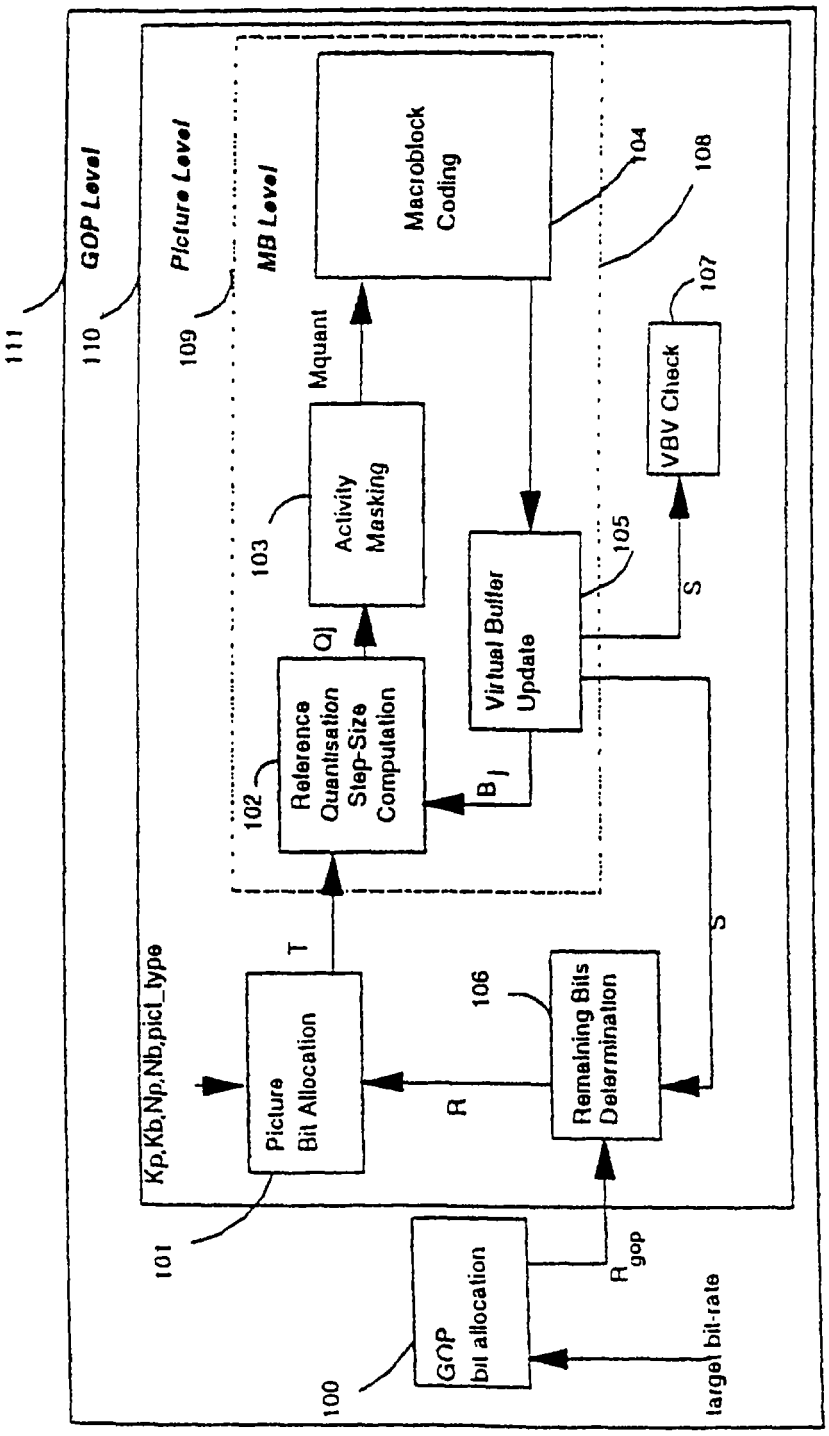

GOP Level
Picture Level
MB Level
111
110
109
100
101
102
103
104
105
106
107
108
GOP bit allocation
Picture Bit Allocation
Reference Quantisation Step-Size Computation
Activity Masking
Macroblock Coding
Virtual Buffer Update
Remaining Bits Determination
VBV Check
Kp,Kb,Np,Nb,pict_type
T
Q
Mquant
B
R
S
S
R gop
target bit-rate

Figure 1

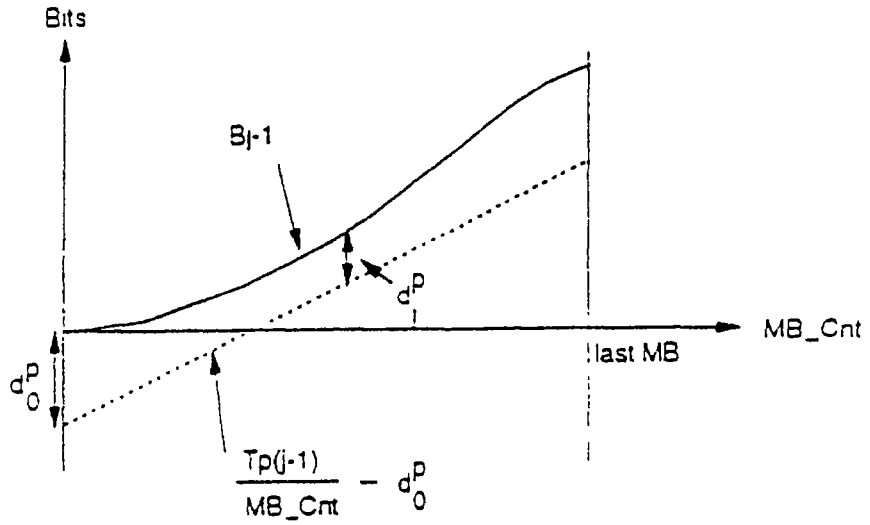


Figure 2

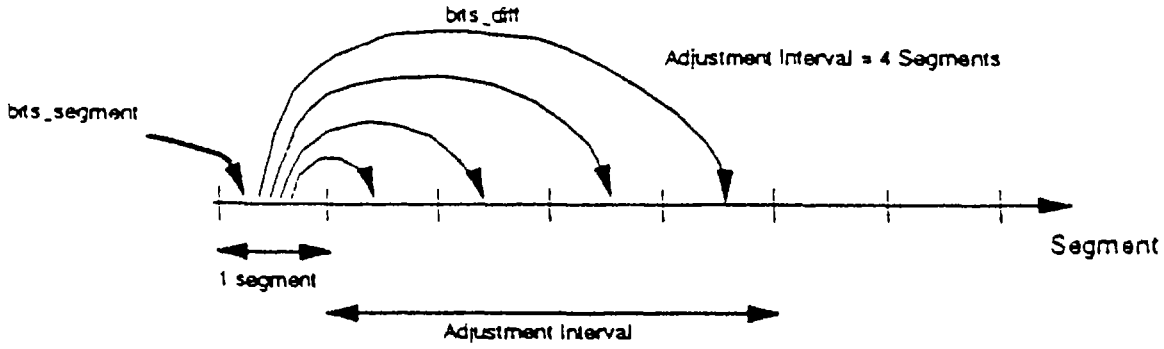


Figure 5

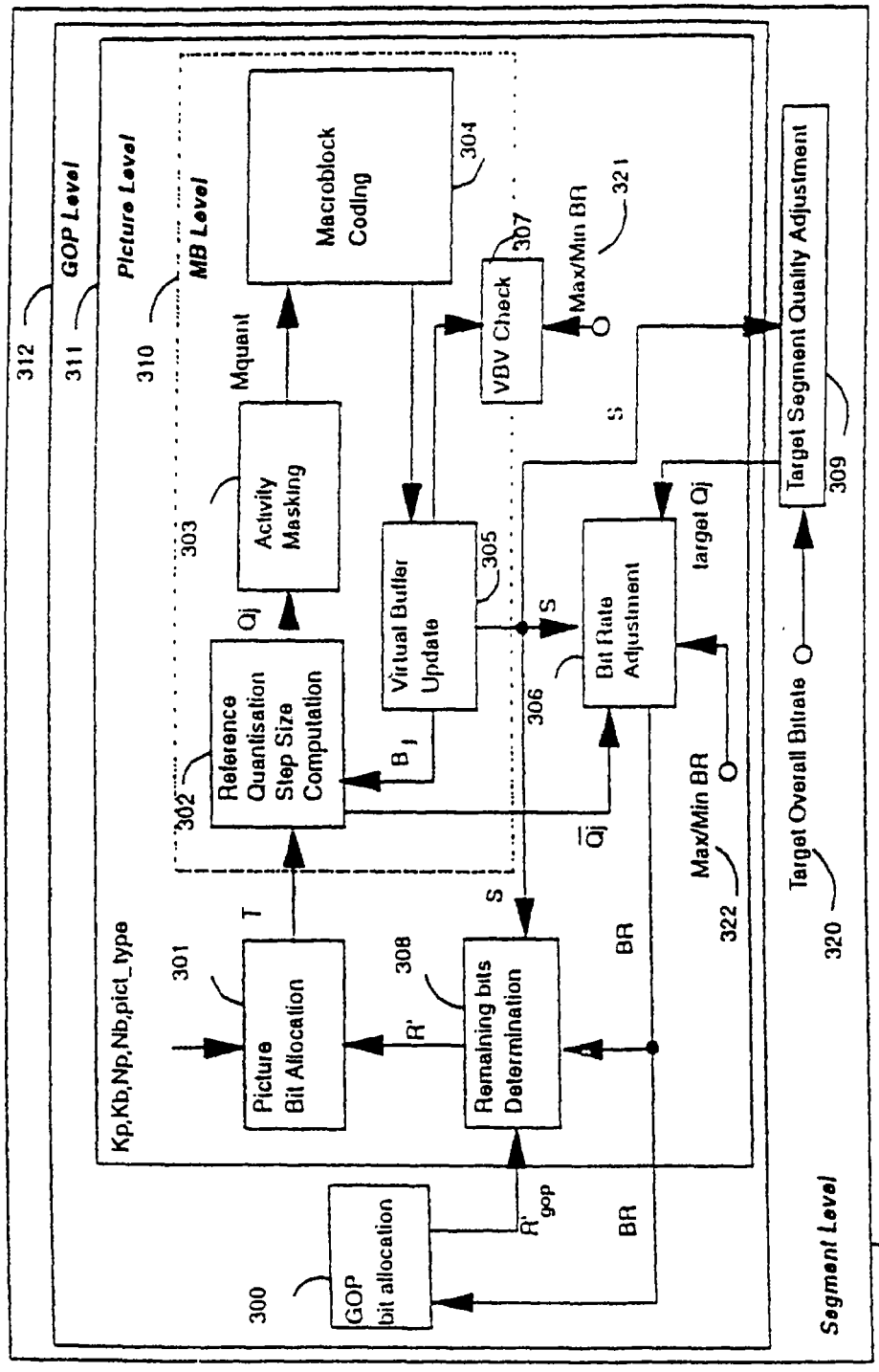

GOP Level
Picture Level
MB Level
Segment Level
312
311
310
313
Kp,Kb,Np,Nb,pict_type
GOP bit allocation
300
Picture Bit Allocation
301
Reference Quantisation Step Size Computation
302
Activity Masking
303
Macroblock Coding
304
Virtual Buffer Update
305
Bit Rate Adjustment
306
VBV Check
307
Remaining bits Determination
308
Target Segment Quality Adjustment
309
Target Overall Bitrate
320
Max/Min BR
322
Max/Min BR
321
Mquant
Qj
target Qj
T
S
BR
R'gop
R'
Bj

Figure 3

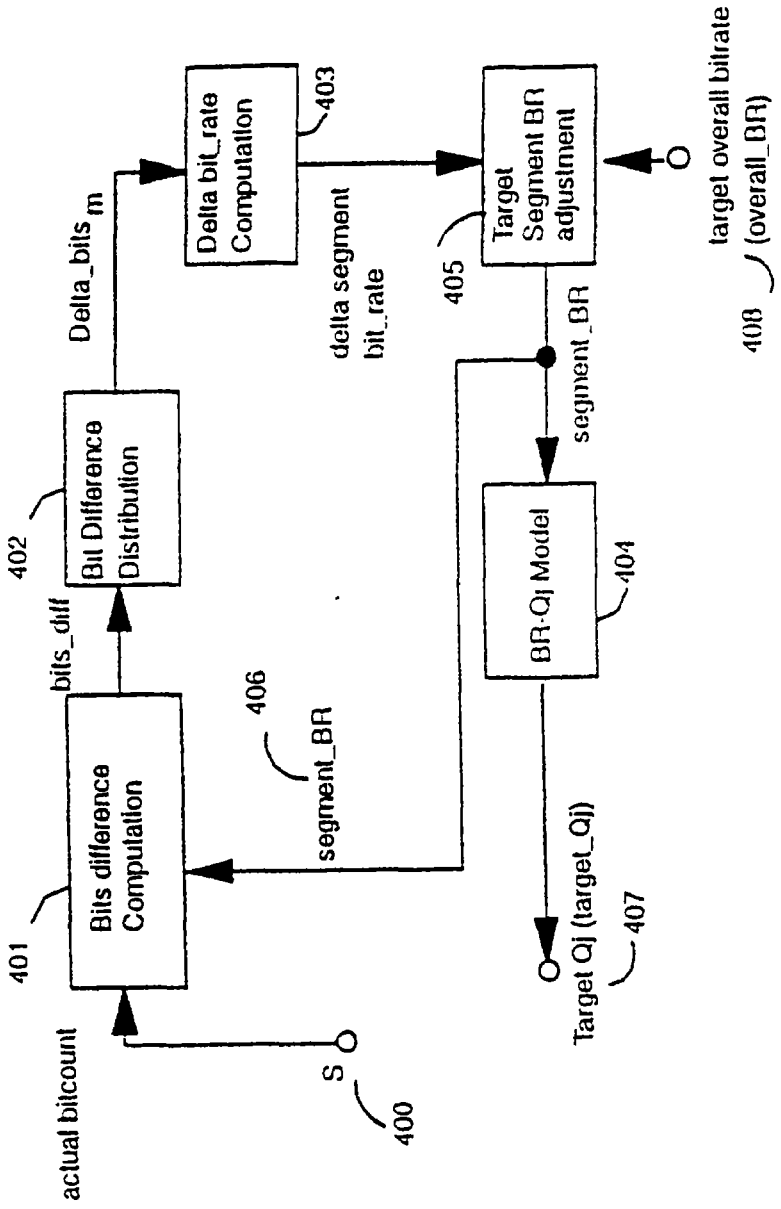

Bits difference Computation
401
Bit Difference Distribution
402
Delta bit_rate Computation
403
Target Segment BR adjustment
405
BR-Qj Model
404
bits_diff
Delta_bits m
delta segment bit_rate
segment_BR
406
segment_BR
target overall bitrate
(overall_BR)
408
Target Qj (target_Qj)
407
actual bitcount
S
400

Figure 4

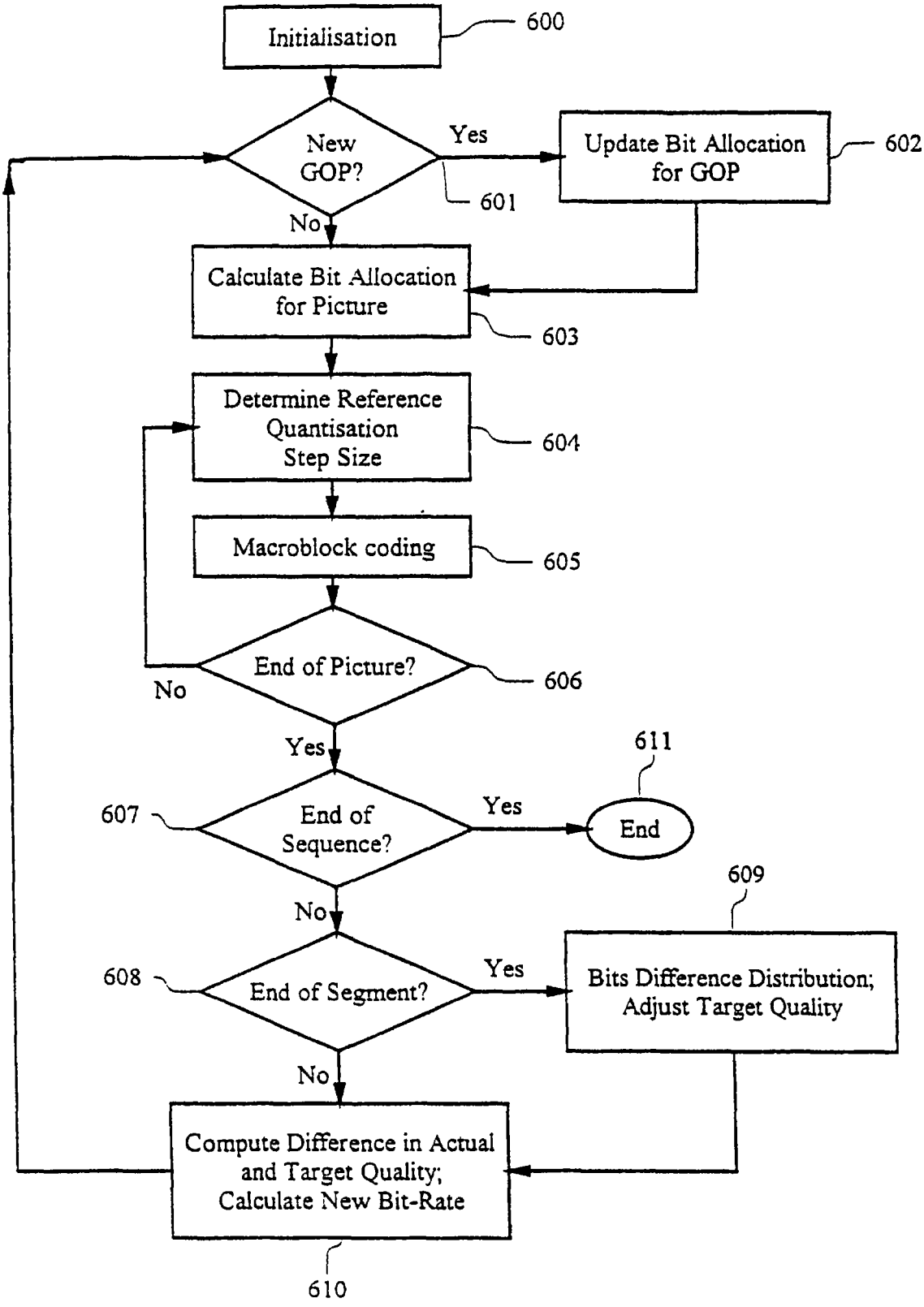

Initialisation
600
New GOP?
Yes
Update Bit Allocation for GOP
602
601
No
Calculate Bit Allocation for Picture
603
Determine Reference Quantisation Step Size
604
Macroblock coding
605
End of Picture?
606
No
Yes
611
607
End of Sequence?
Yes
End
609
No
608
End of Segment?
Yes
Bits Difference Distribution; Adjust Target Quality
No
Compute Difference in Actual and Target Quality; Calculate New Bit-Rate
610

Figure 6