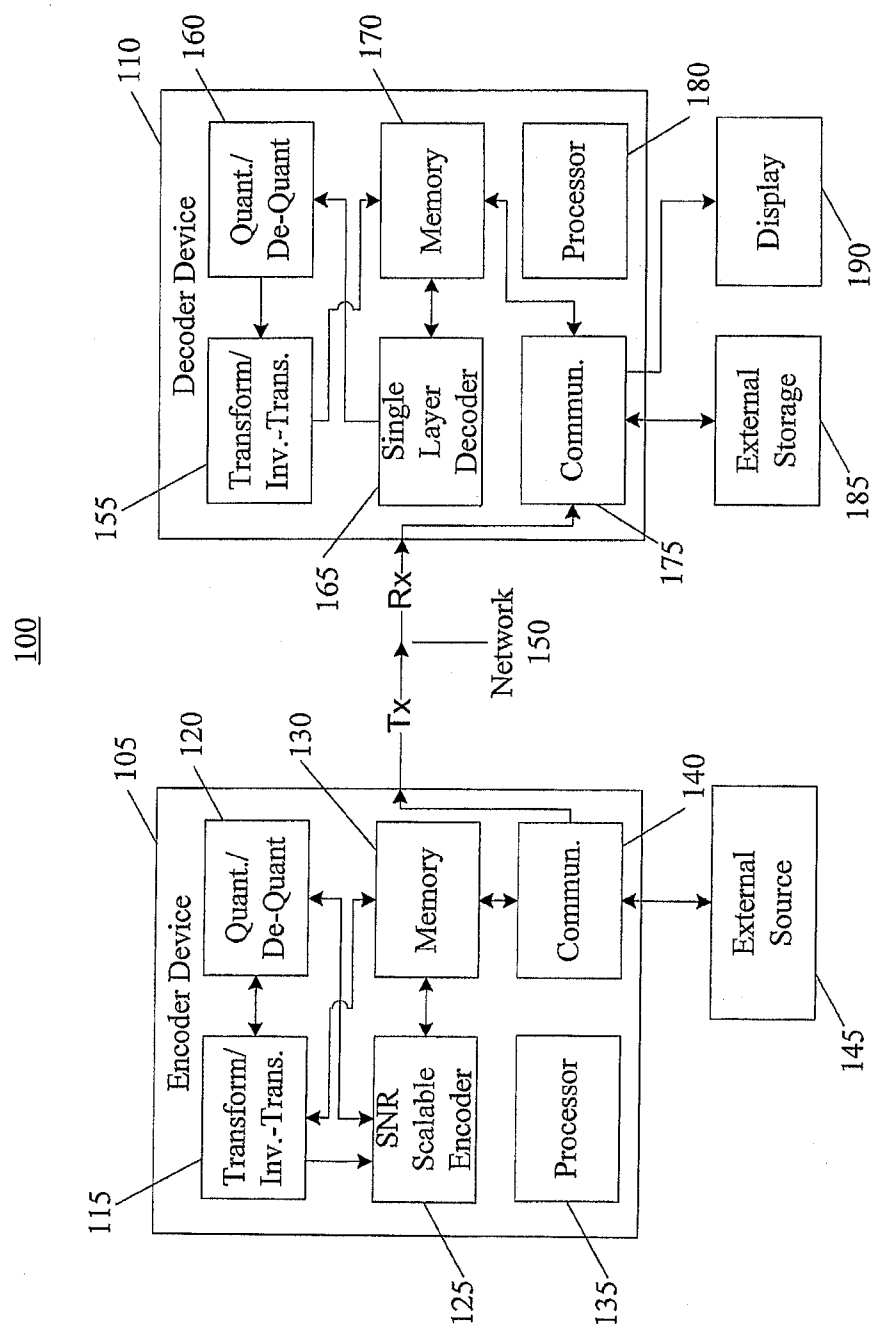

100
Decoder Device
110
Quant./ De-Quant
160
Memory
170
Processor
180
Display
190
Transform/ Inv.-Trans.
155
Single Layer Decoder
165
Commun.
175
External Storage
185
Rx
Network 150
Tx
Encoder Device
105
Quant./ De-Quant
120
Memory
130
Commun.
140
External Source
145
Transform/ Inv.-Trans.
115
SNR Scalable Encoder
125
Processor
135

Figure 1

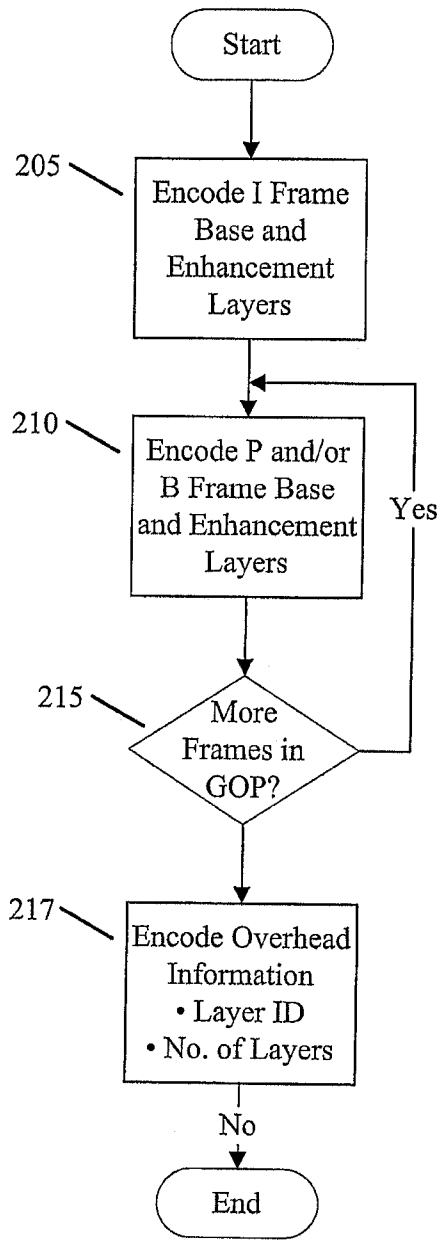

Start
205
Encode I Frame Base and Enhancement Layers
200
210
Encode P and/or B Frame Base and Enhancement Layers
Yes
215
More Frames in GOP?
217
Encode Overhead Information
• Layer ID
• No. of Layers
No
End

Figure 2A

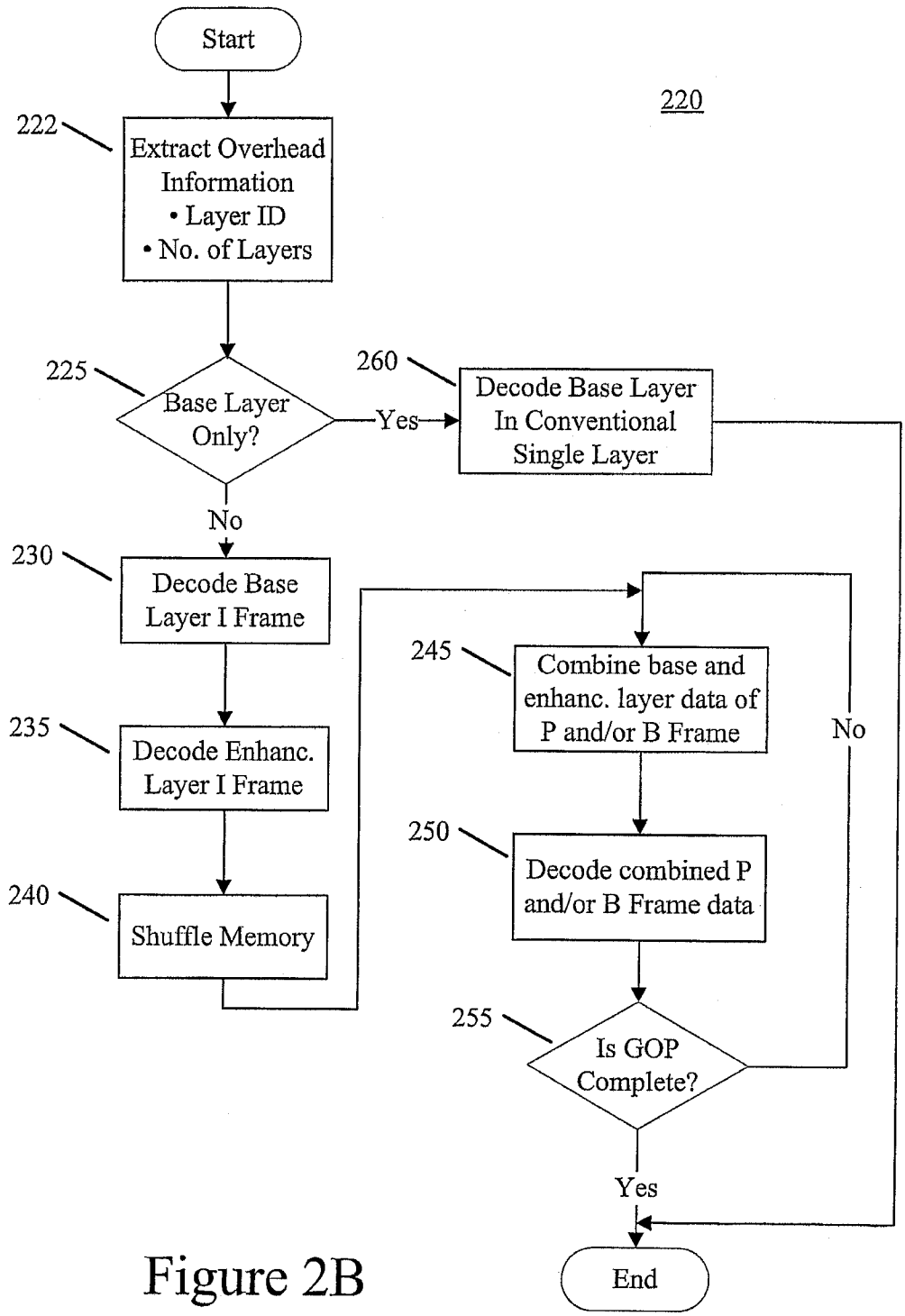

Start
220
222
Extract Overhead Information
• Layer ID
• No. of Layers
225
Base Layer Only?
Yes
260
Decode Base Layer In Conventional Single Layer
No
230
Decode Base Layer I Frame
235
Decode Enhanc. Layer I Frame
240
Shuffle Memory
245
Combine base and enhanc. layer data of P and/or B Frame
250
Decode combined P and/or B Frame data
255
Is GOP Complete?
No
Yes
End

Figure 2B

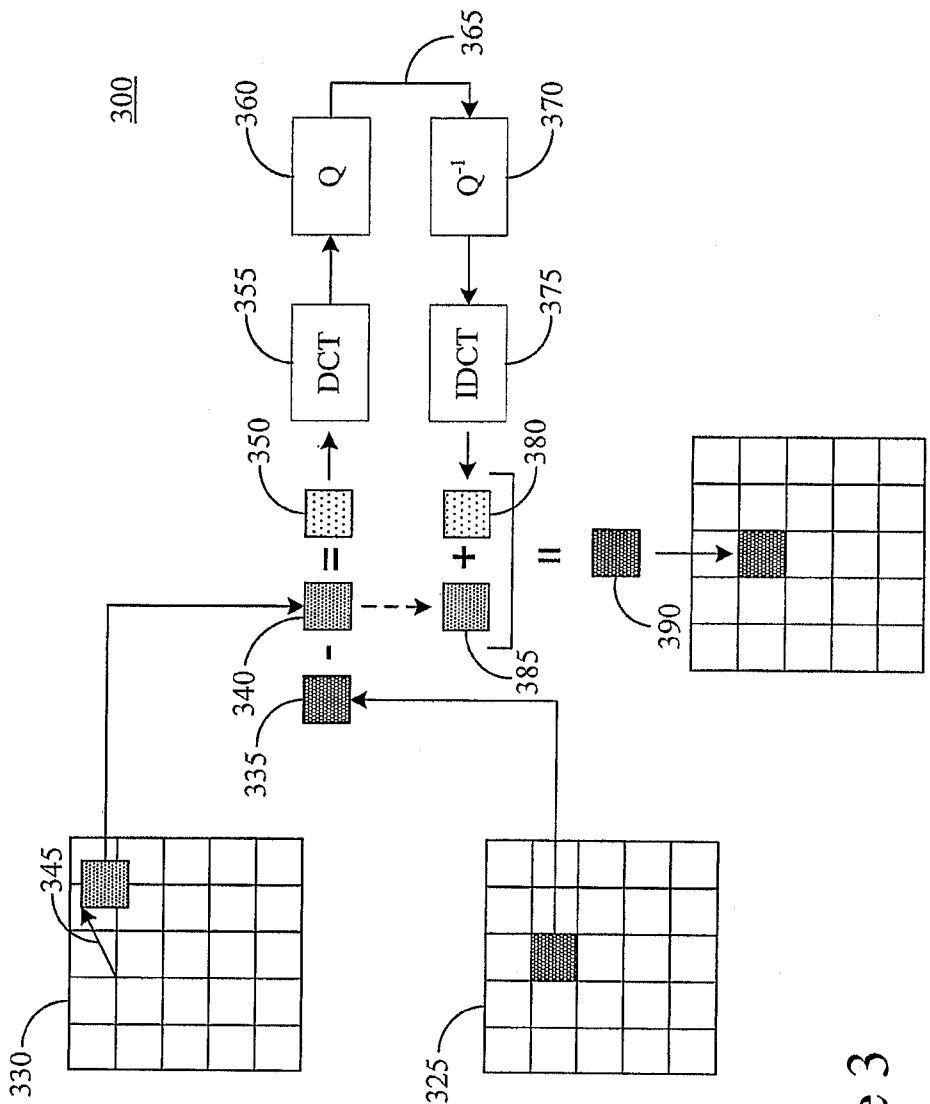

300
360
Q
365
370
Q^{-1}
355
DCT
375
IDCT
350
380
=
+
=
-
340
385
335
345
330
325
390

Figure 3

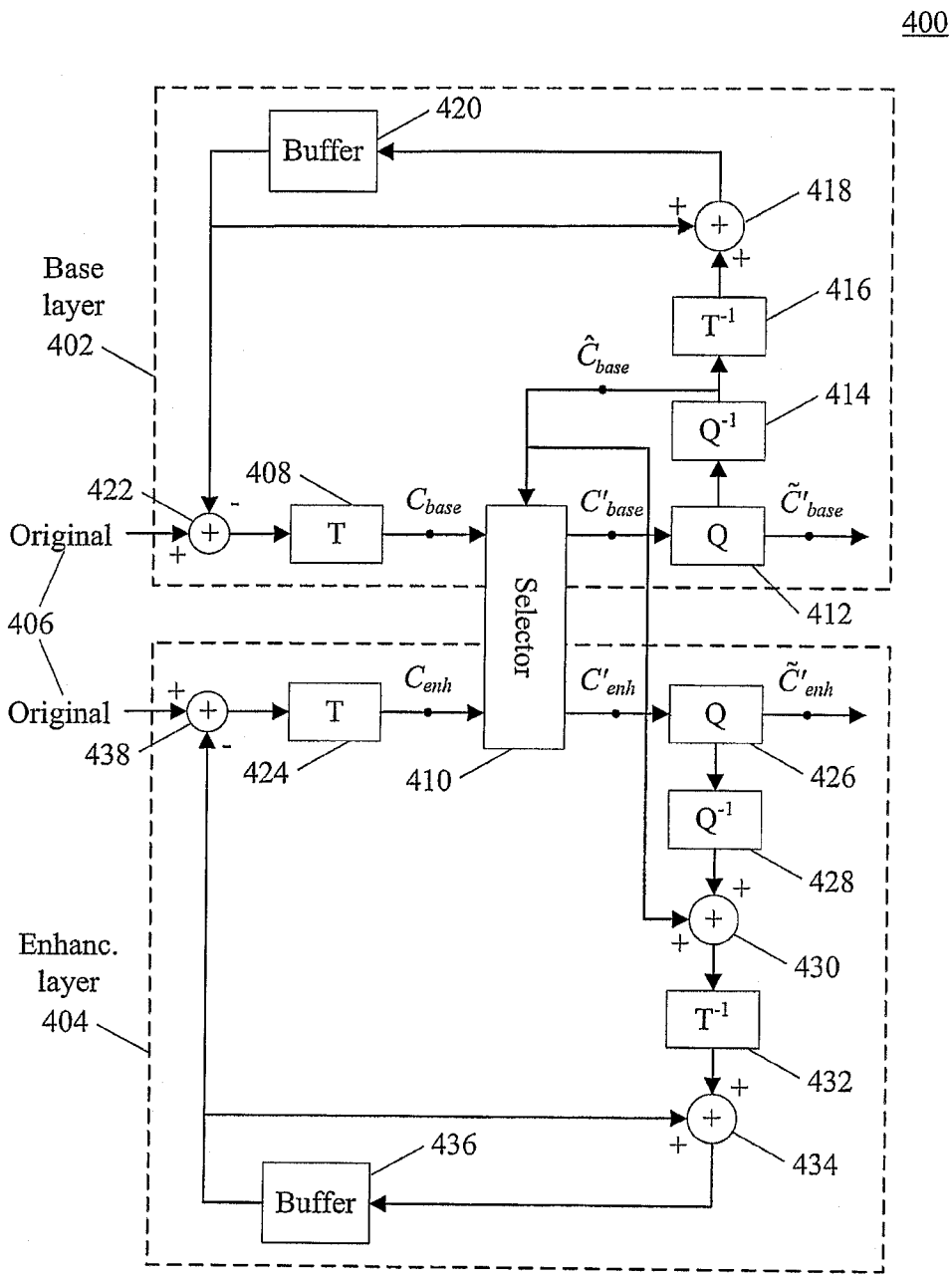

400
Buffer
420
418
416
T^{-1}
$\hat{C}_{base}$
414
Q^{-1}
Base layer 402
422
408
Original
406
T
C_{base}
Selector
C'_{base}
Q
$\tilde{C}'_{base}$
412
C_{enh}
C'_{enh}
$\tilde{C}'_{enh}$
Original
438
424
410
426
428
430
Enhanc. layer 404
432
434
436
Buffer

Figure 4

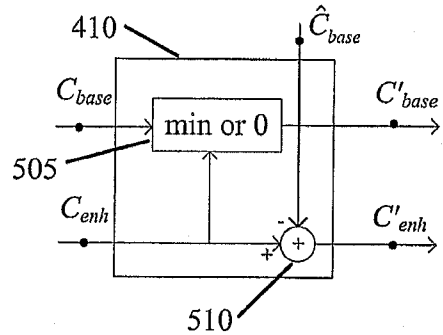


Figure 5

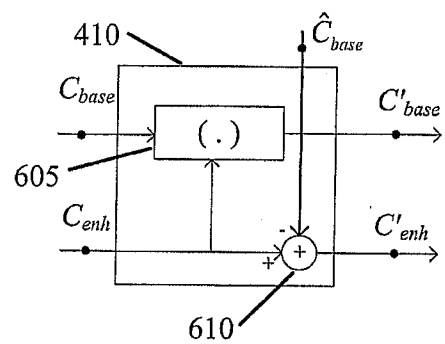


Figure 6

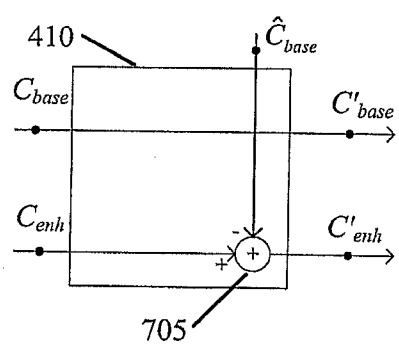


Figure 7

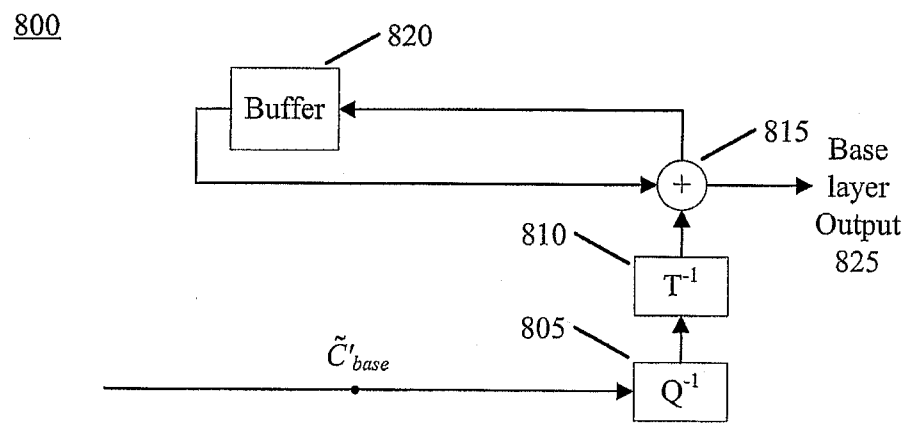

800
820
Buffer
815
Base
layer
Output
825
810
T-1
805
Q-1
$\tilde{C}'_{base}$

Figure 8

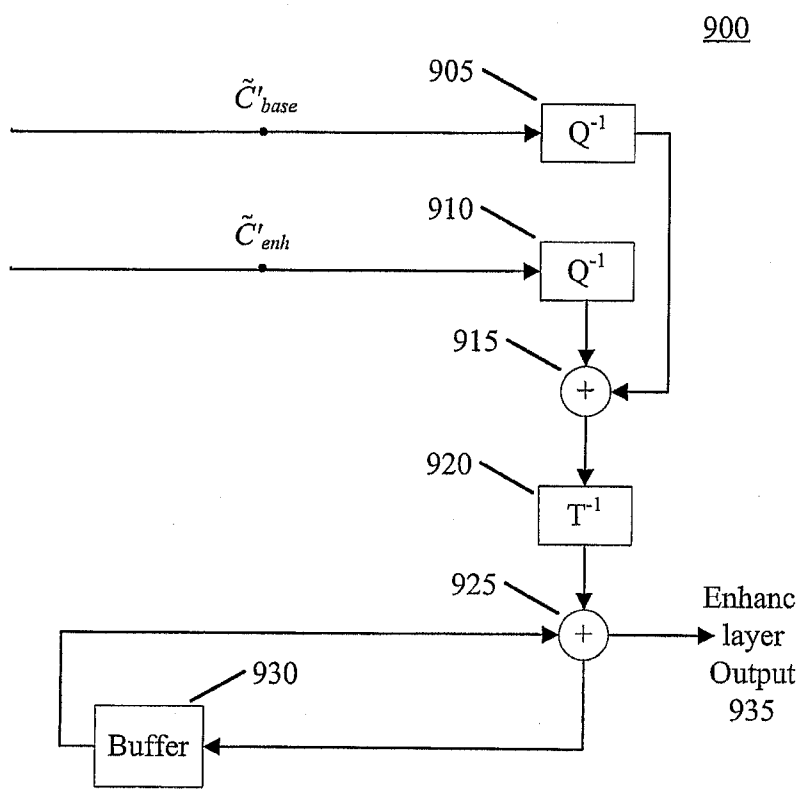

900
905
$\tilde{C}'_{base}$
Q^{-1}
910
$\tilde{C}'_{enh}$
Q^{-1}
915
+
920
T^{-1}
925
+
Enhanc.
layer
Output
935
930
Buffer

Figure 9

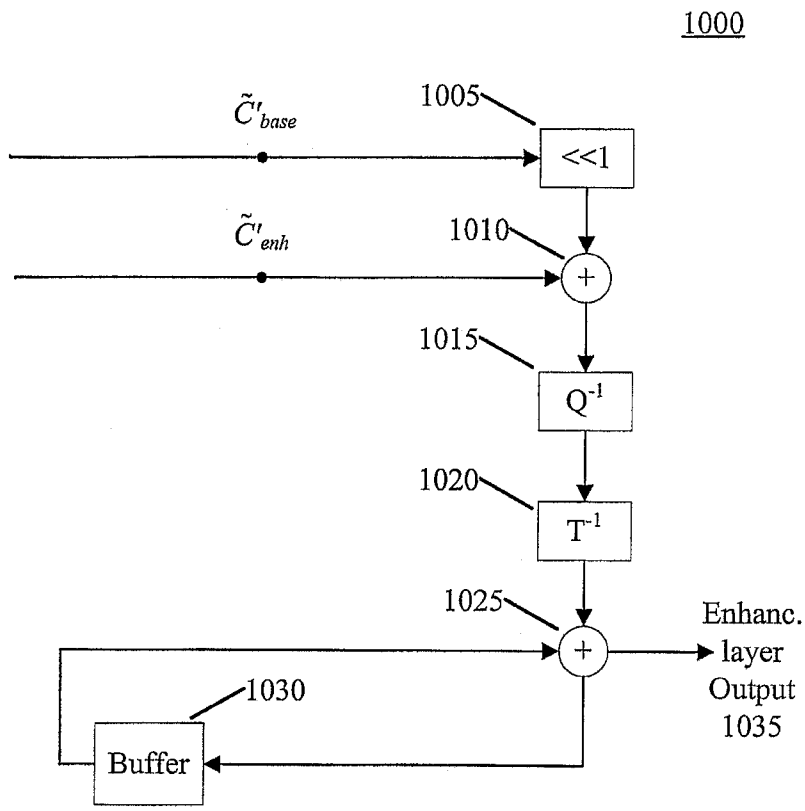

1000
$\tilde{C}'_{base}$
1005
<<1
$\tilde{C}'_{enh}$
1010
+
1015
Q^{-1}
1020
T^{-1}
1025
+
Enhanc. layer Output 1035
1030
Buffer

Figure 10