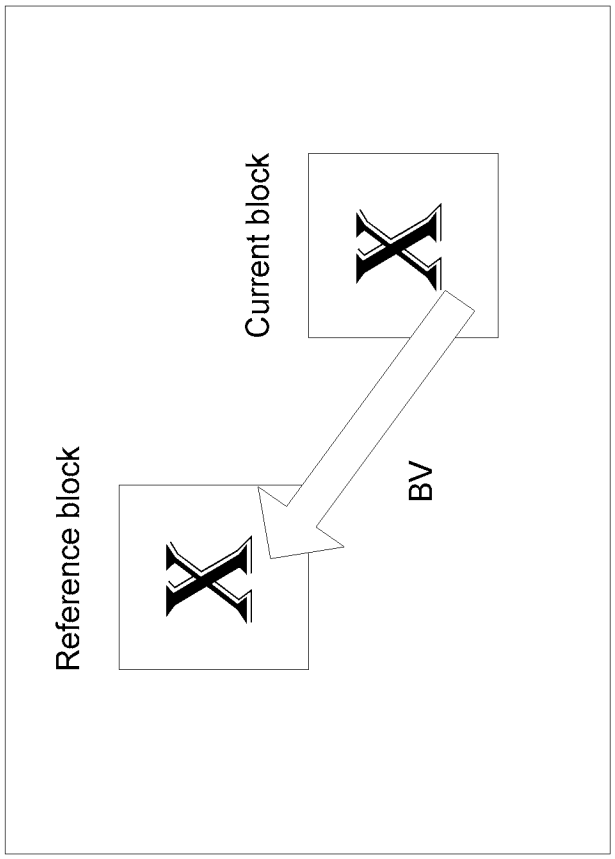


FIG. 1

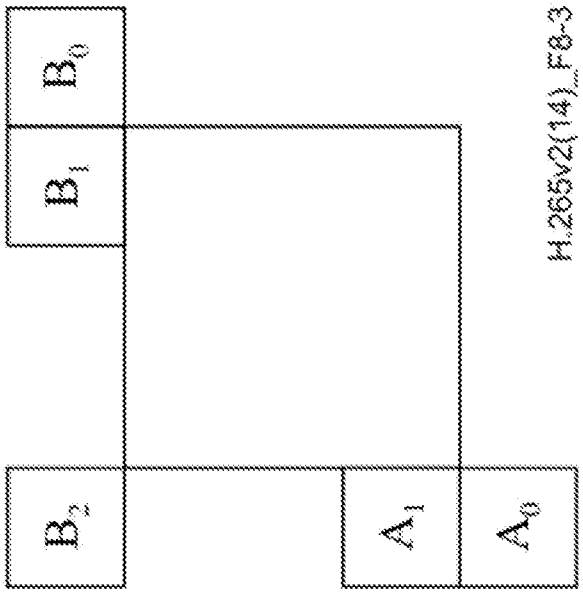


FIG. 2

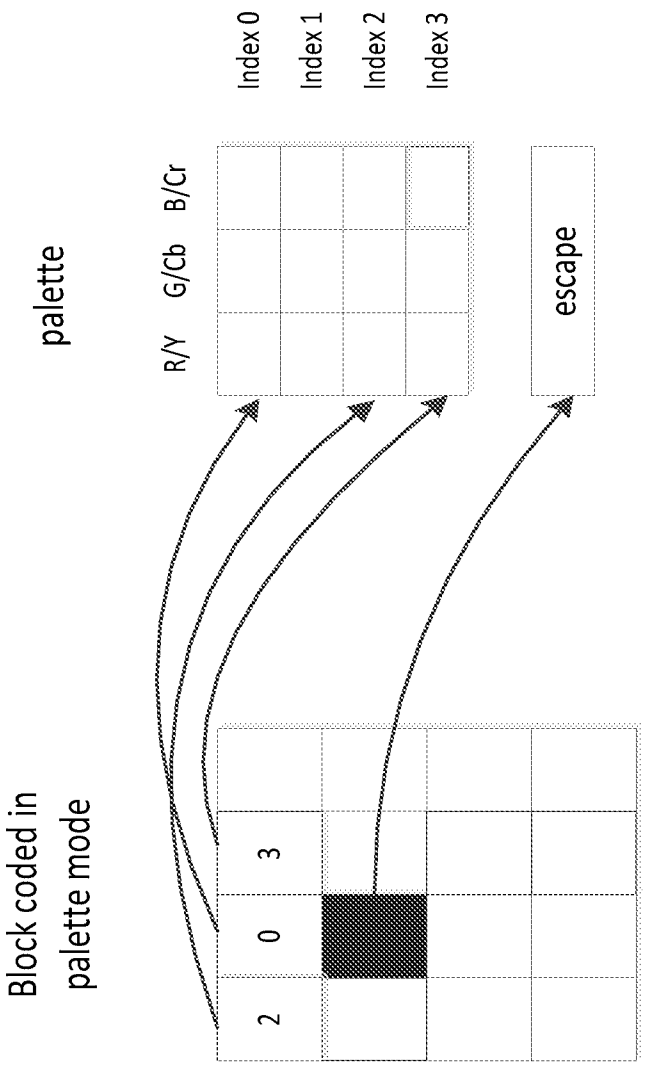

Block coded in palette mode
palette
R/Y G/Cb B/Cr
Index 0
Index 1
Index 2
Index 3
escape
2
0
3

FIG. 3

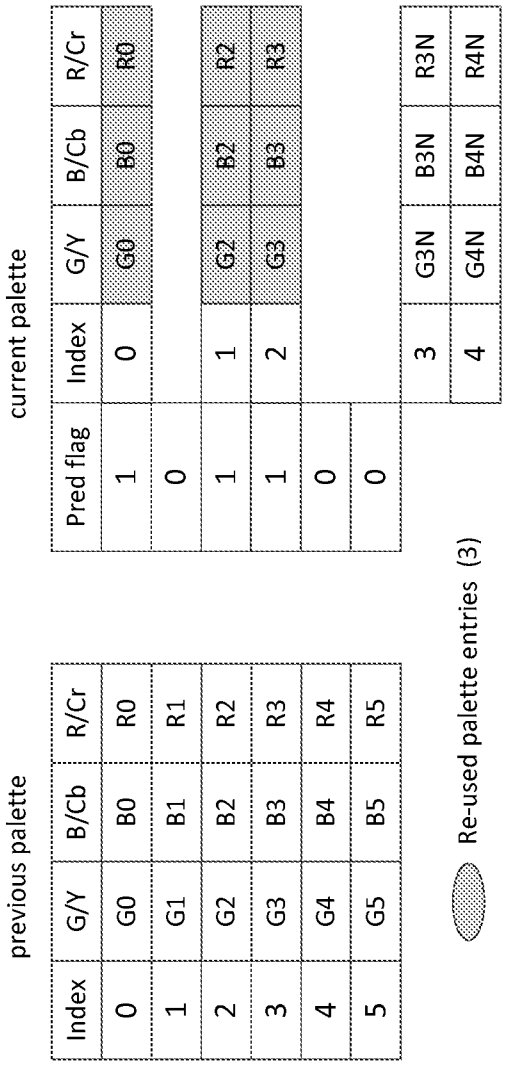

previous palette
Index G/Y B/Cb R/Cr
0 G0 B0 R0
1 G1 B1 R1
2 G2 B2 R2
3 G3 B3 R3
4 G4 B4 R4
5 G5 B5 R5
current palette
Pred flag Index G/Y B/Cb R/Cr
1 0 G0 B0 R0
0
1 1 G2 B2 R2
1 2 G3 B3 R3
0
0
3 G3N B3N R3N
4 G4N B4N R4N
Re-used palette entries (3)
New palette entries (2), signalled

FIG. 4

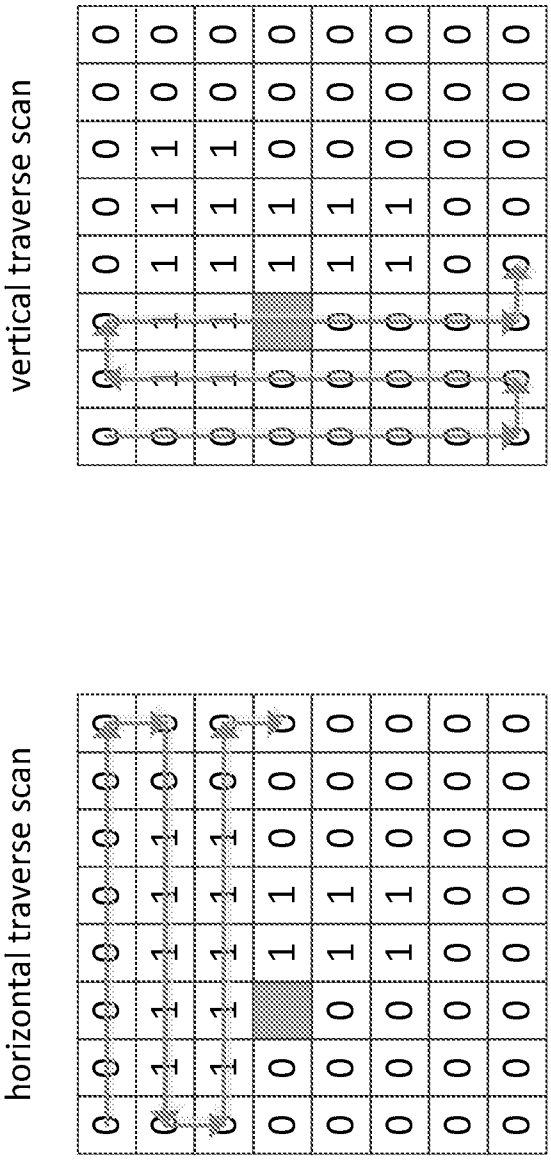


FIG. 5

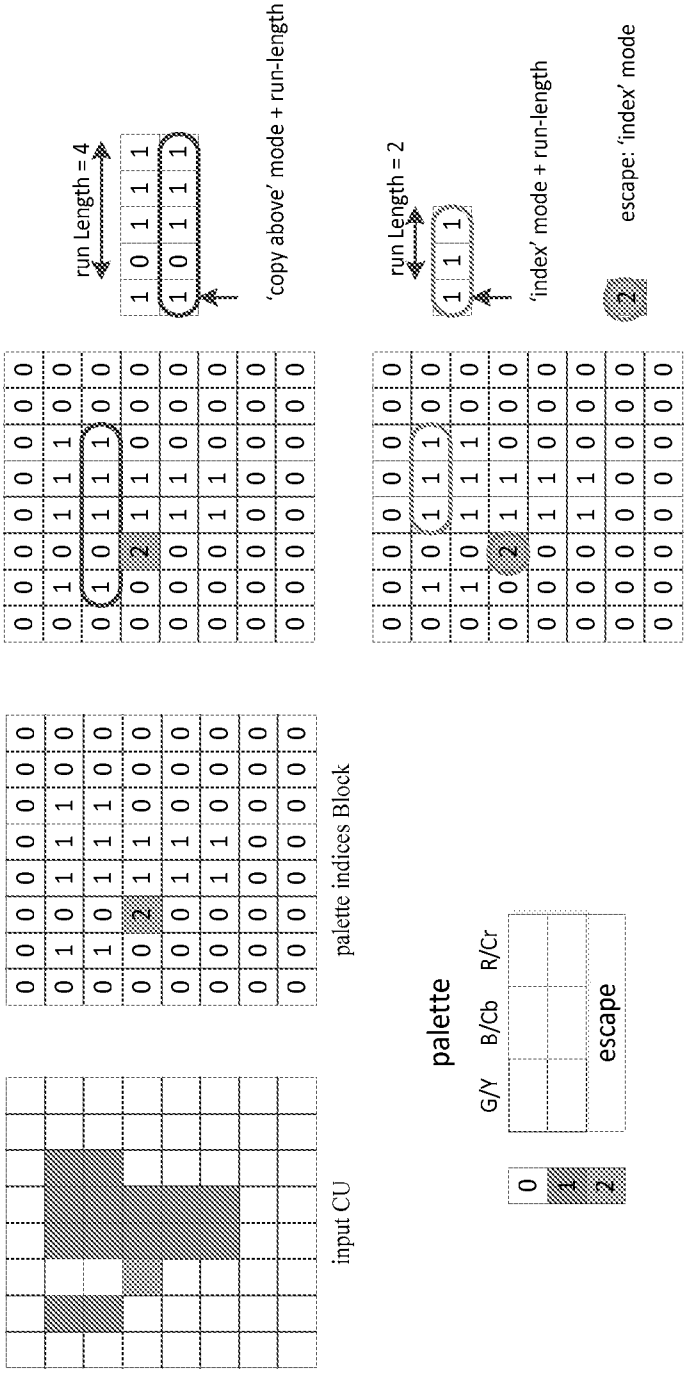

input CU
palette indices Block
palette
G/Y
B/Cb
R/Cr
escape
0
1
2
run Length = 4
'copy above' mode + run-length
run Length = 2
'index' mode + run-length
escape: 'index' mode

FIG. 6

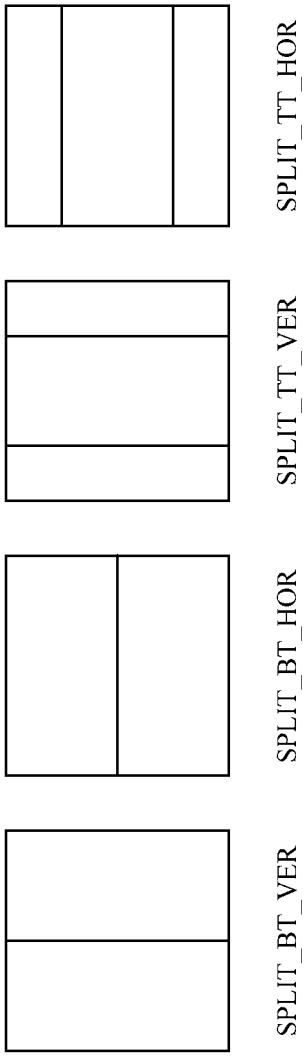


FIG. 7

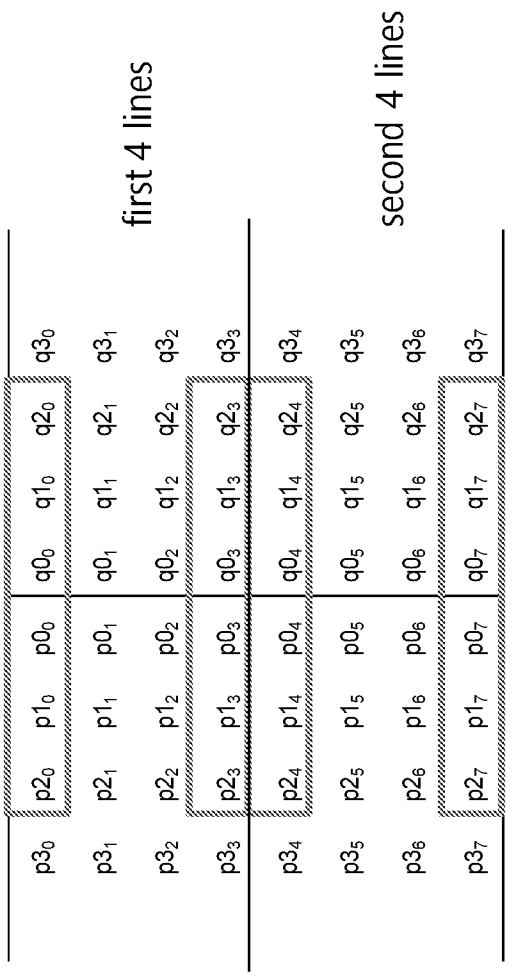

first 4 lines
second 4 lines
p3$_0$ p2$_0$ p1$_0$ p0$_0$ q0$_0$ q1$_0$ q2$_0$ q3$_0$
p3$_1$ p2$_1$ p1$_1$ p0$_1$ q0$_1$ q1$_1$ q2$_1$ q3$_1$
p3$_2$ p2$_2$ p1$_2$ p0$_2$ q0$_2$ q1$_2$ q2$_2$ q3$_2$
p3$_3$ p2$_3$ p1$_3$ p0$_3$ q0$_3$ q1$_3$ q2$_3$ q3$_3$
p3$_4$ p2$_4$ p1$_4$ p0$_4$ q0$_4$ q1$_4$ q2$_4$ q3$_4$
p3$_5$ p2$_5$ p1$_5$ p0$_5$ q0$_5$ q1$_5$ q2$_5$ q3$_5$
p3$_6$ p2$_6$ p1$_6$ p0$_6$ q0$_6$ q1$_6$ q2$_6$ q3$_6$
p3$_7$ p2$_7$ p1$_7$ p0$_7$ q0$_7$ q1$_7$ q2$_7$ q3$_7$

FIG. 8

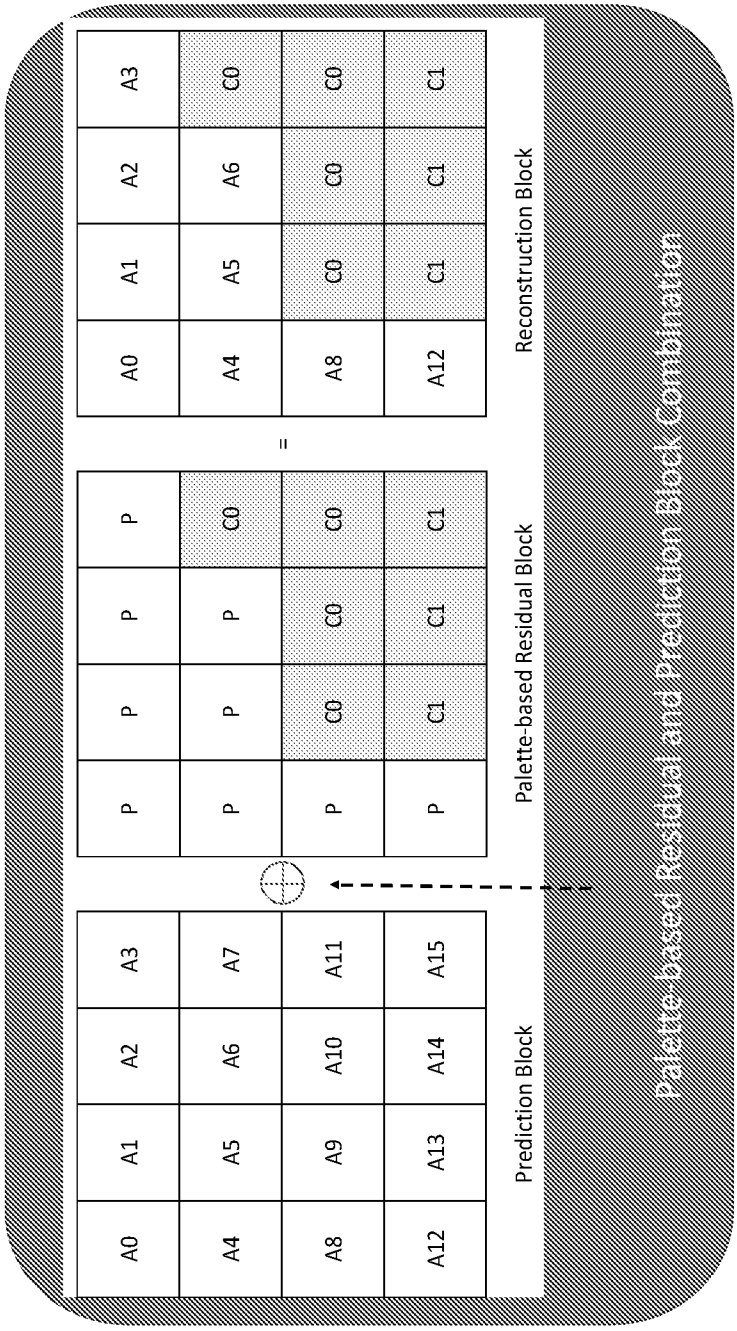

Palette-based Residual and Prediction Block Combination
Prediction Block
A0 A1 A2 A3
A4 A5 A6 A7
A8 A9 A10 A11
A12 A13 A14 A15
Palette-based Residual Block
P P P P
P P P P
P C0 C0 C0
P C1 C1 C1
=
Reconstruction Block
A0 A1 A2 A3
A4 A5 A6 C0
A8 C0 C0 C0
A12 C1 C1 C1

FIG. 9

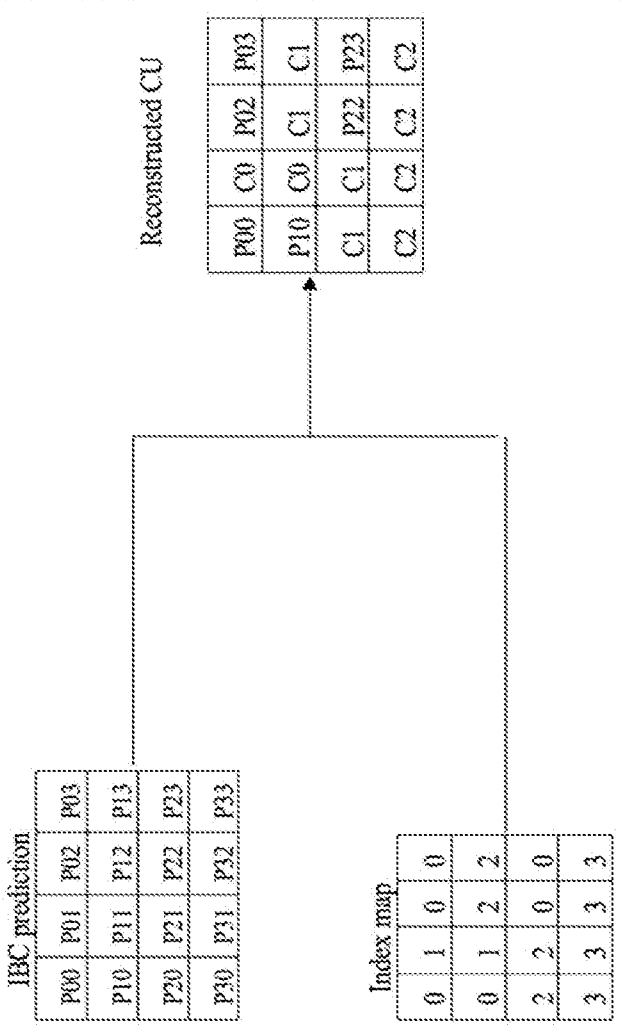

Reconstructed CU
P00 C0 P02 P03
P10 C0 C1 C1
C1 C1 P22 P23
C2 C2 C2 C2
IBC prediction
P00 P01 P02 P03
P10 P11 P12 P13
P20 P21 P22 P23
P30 P31 P32 P33
Index map
0 1 0 0
0 1 2 2
2 2 0 0
3 3 3 3

FIG. 10

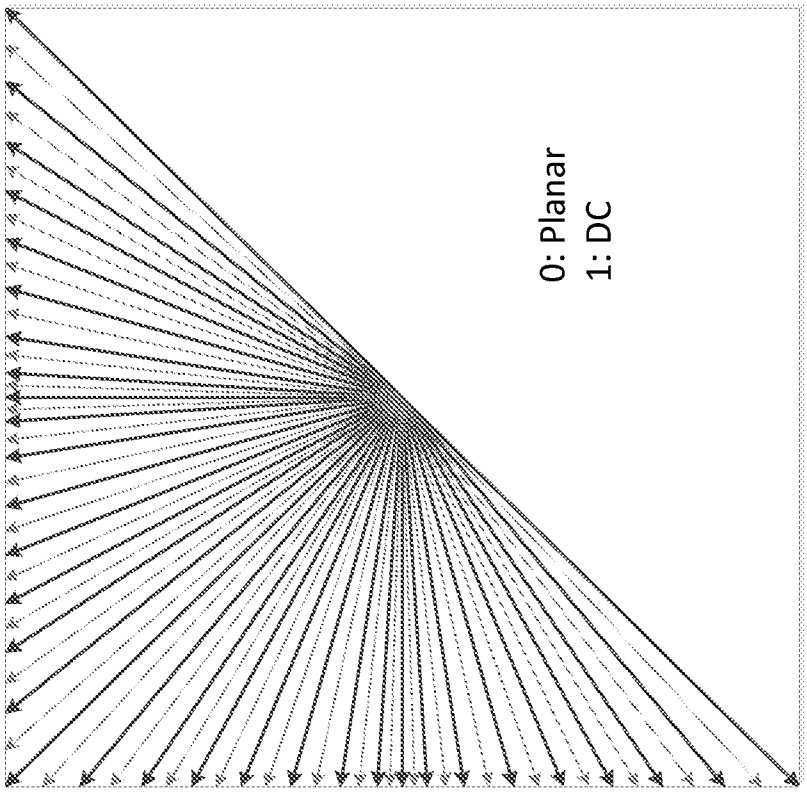


FIG. 11

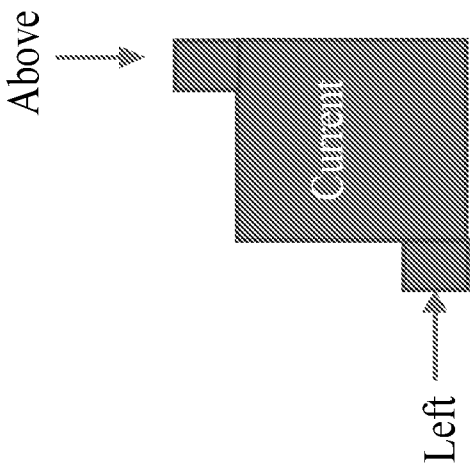


FIG. 12

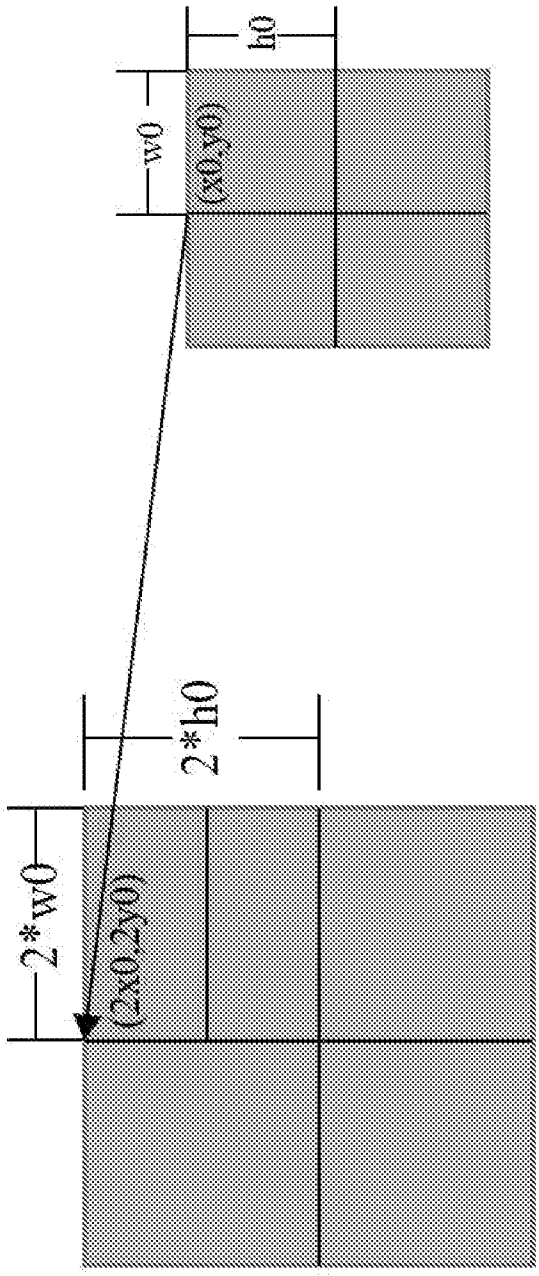
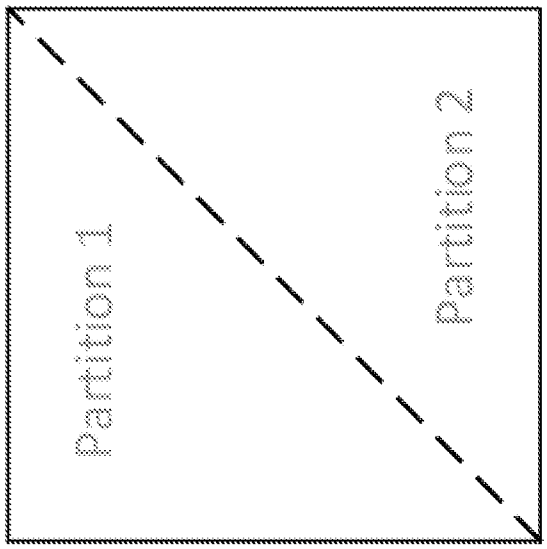


FIG. 13



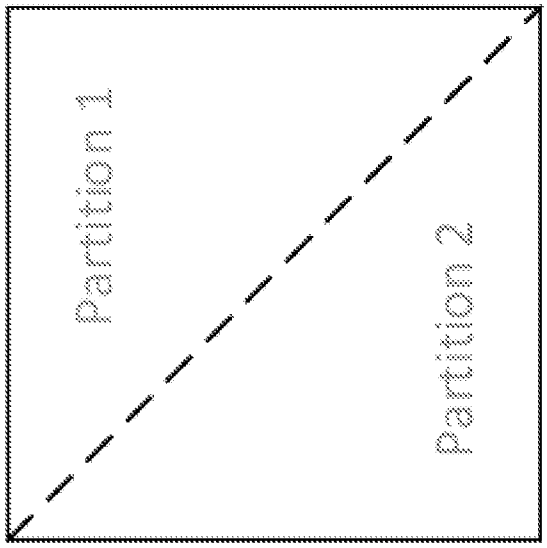


FIG. 14

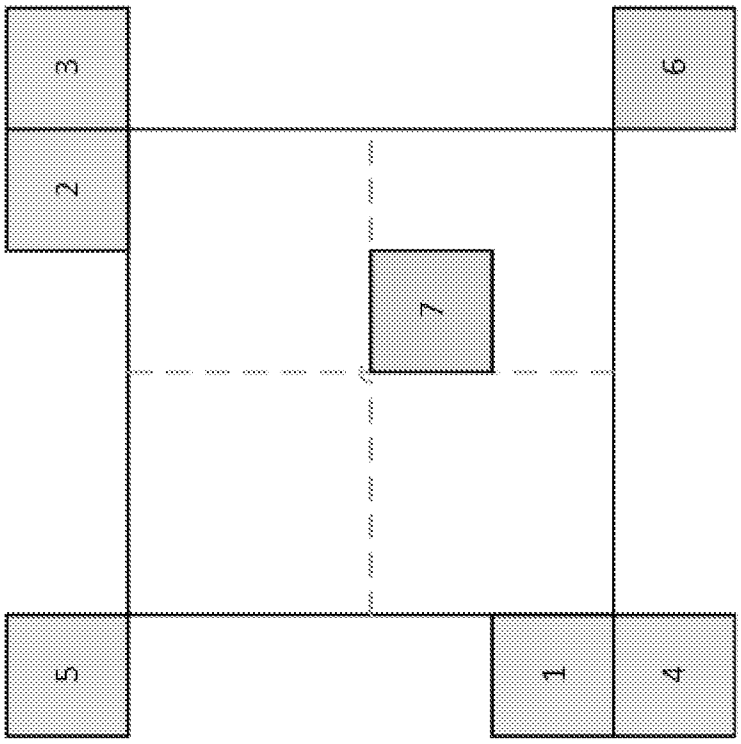


FIG. 15

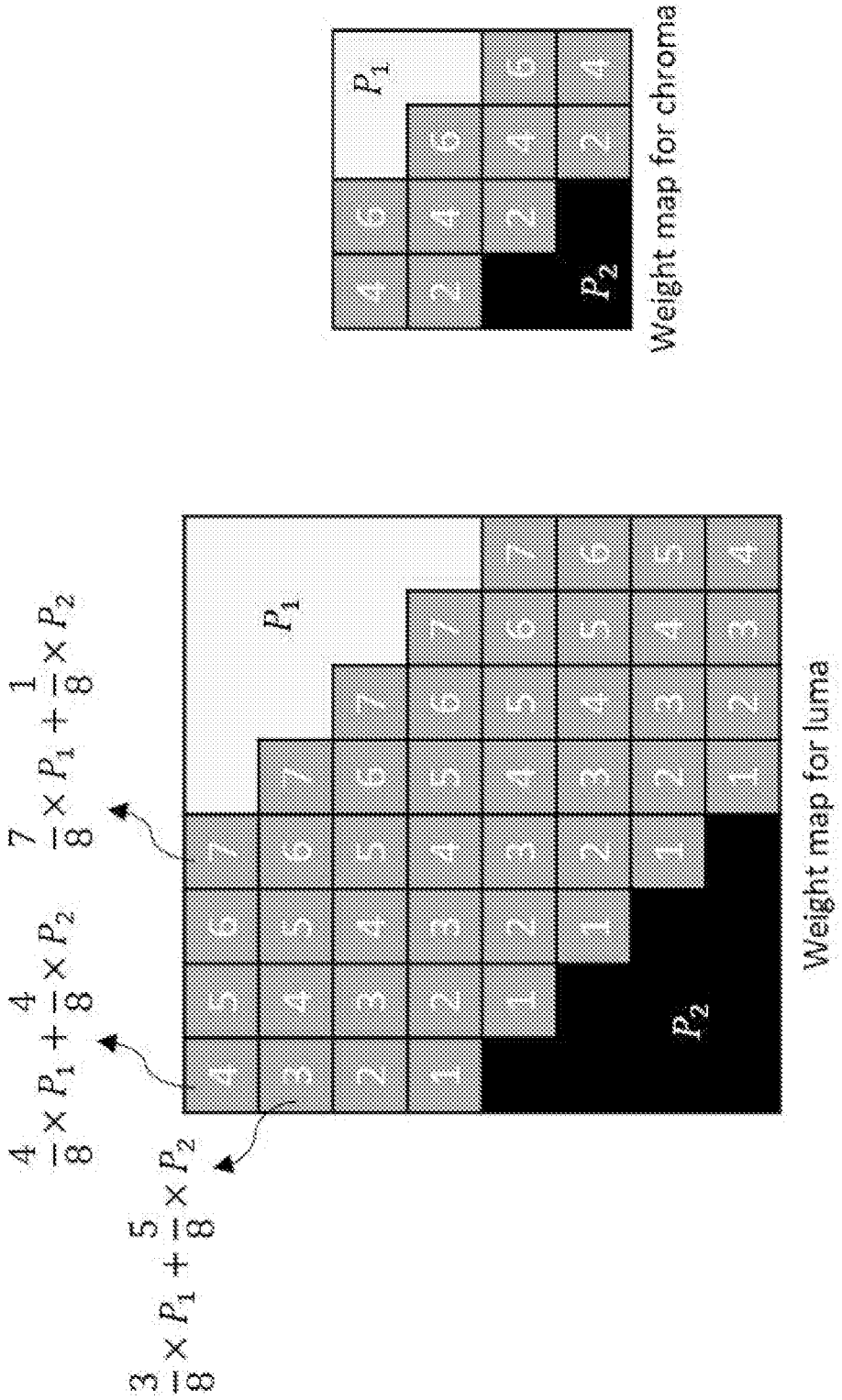

P_1
P_2
Weight map for chroma
P_1
P_2
Weight map for luma
$\frac{7}{8} \times P_1 + \frac{1}{8} \times P_2$
$\frac{4}{8} \times P_1 + \frac{4}{8} \times P_2$
$\frac{3}{8} \times P_1 + \frac{5}{8} \times P_2$

FIG. 16

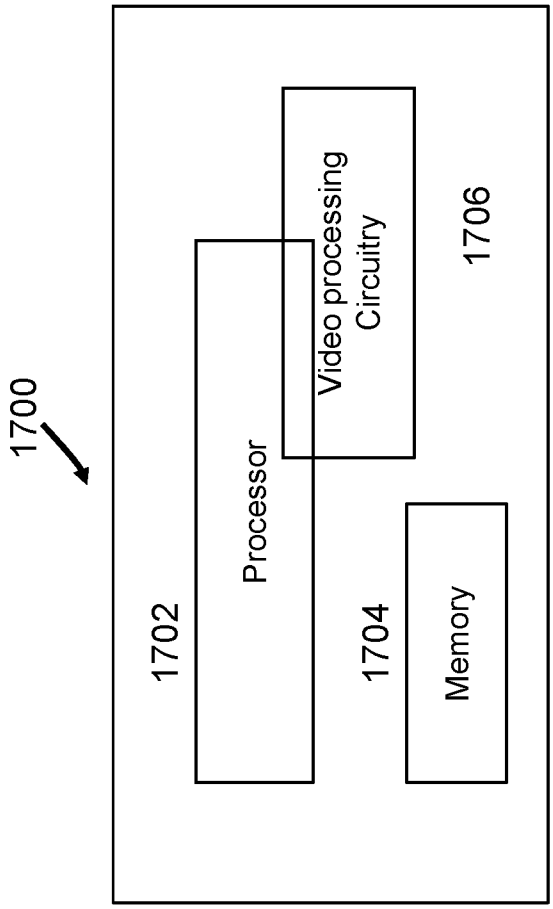

1700
1702
Processor
Video processing
Circuitry
1706
1704
Memory

FIG. 17A

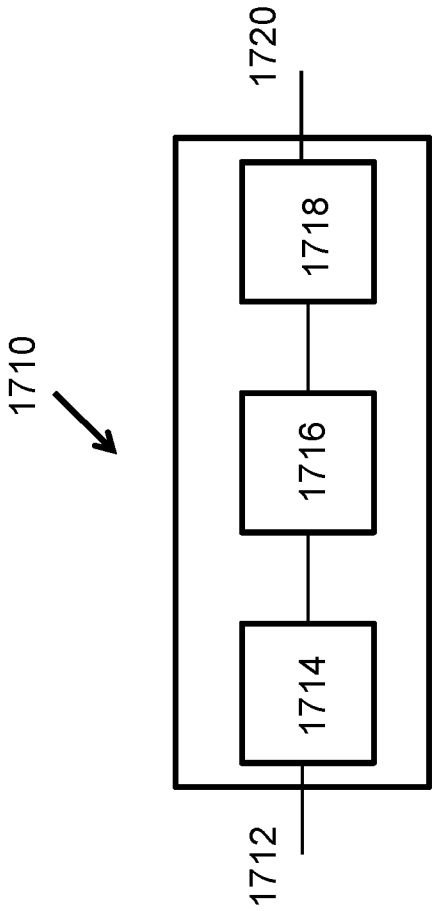


FIG. 17B

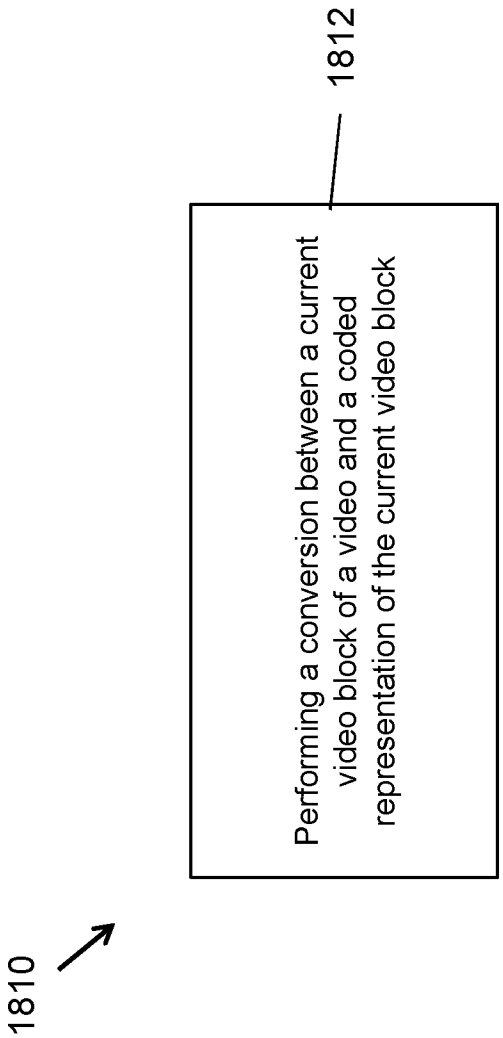

1810
1812
Performing a conversion between a current video block of a video and a coded representation of the current video block

FIG. 18A

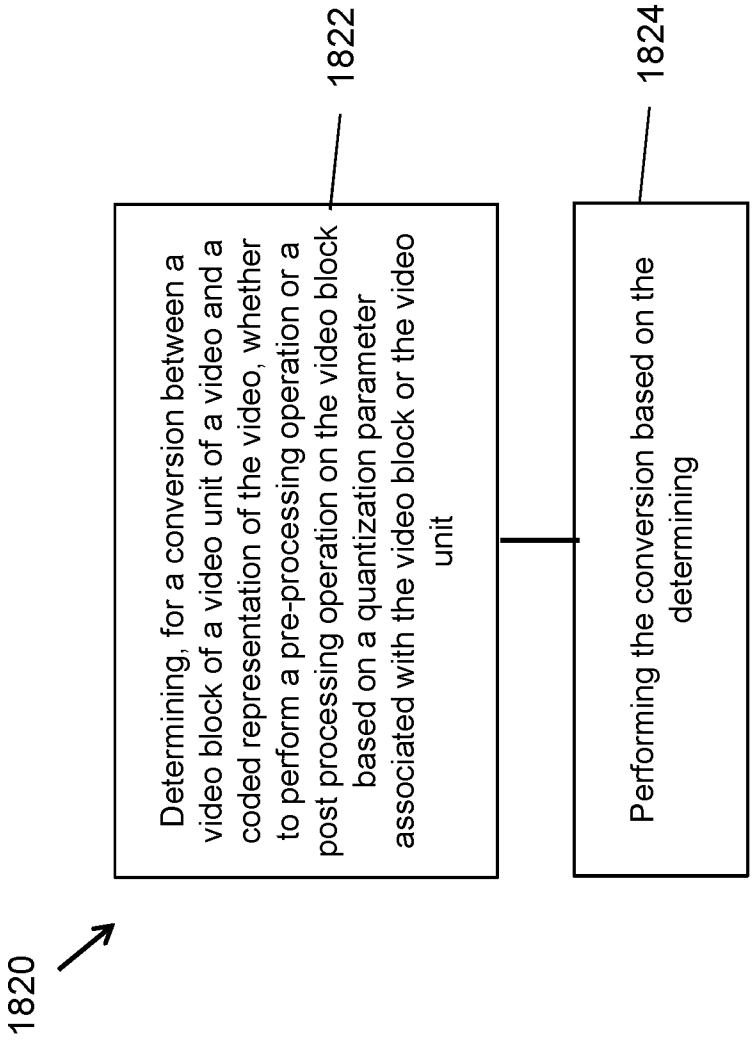

1820
1822
Determining, for a conversion between a video block of a video unit of a video and a coded representation of the video, whether to perform a pre-processing operation or a post processing operation on the video block based on a quantization parameter associated with the video block or the video unit
1824
Performing the conversion based on the determining

FIG. 18B

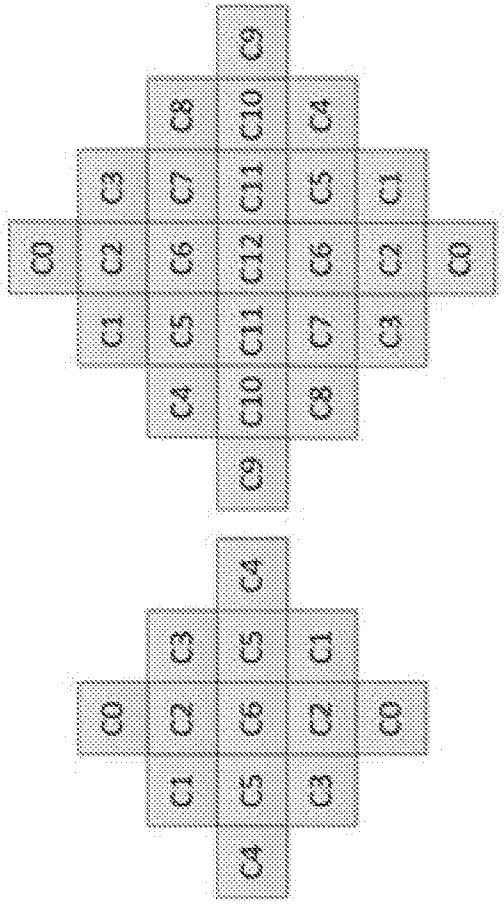
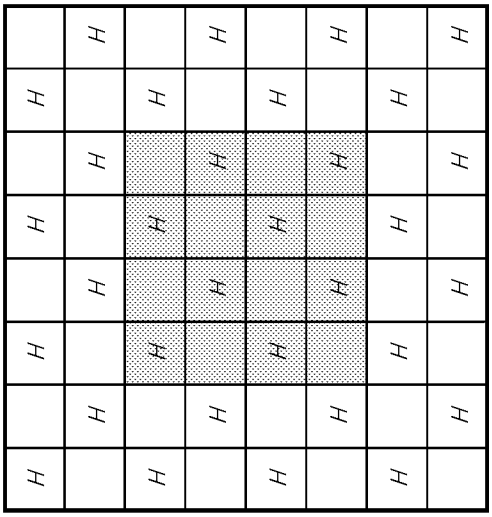
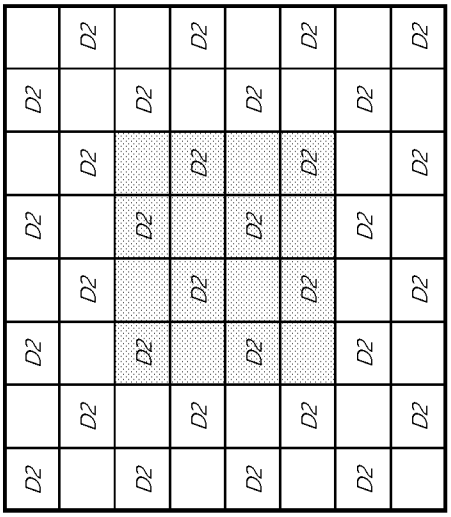
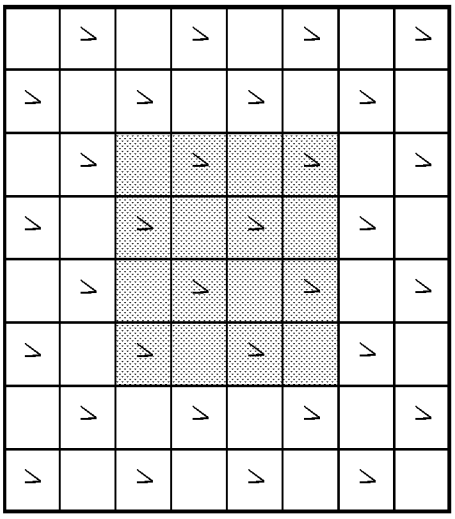

C9
C8
C10
C4
C3
C7
C11
C5
C1
C0
C2
C6
C12
C6
C2
C8
C1
C5
C11
C7
C3
C4
C10
C8
C9
C4
C3
C5
C1
C0
C2
C6
C2
C0
C1
C5
C3
C4

FIG. 19







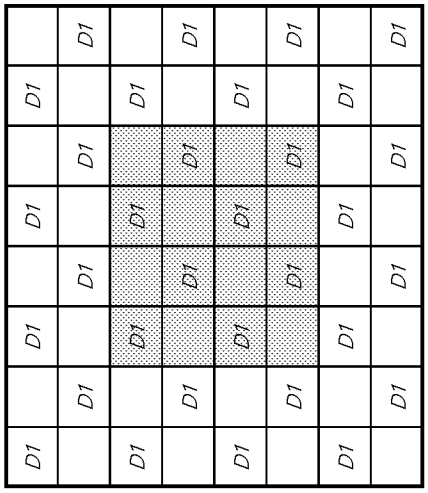


FIG. 20

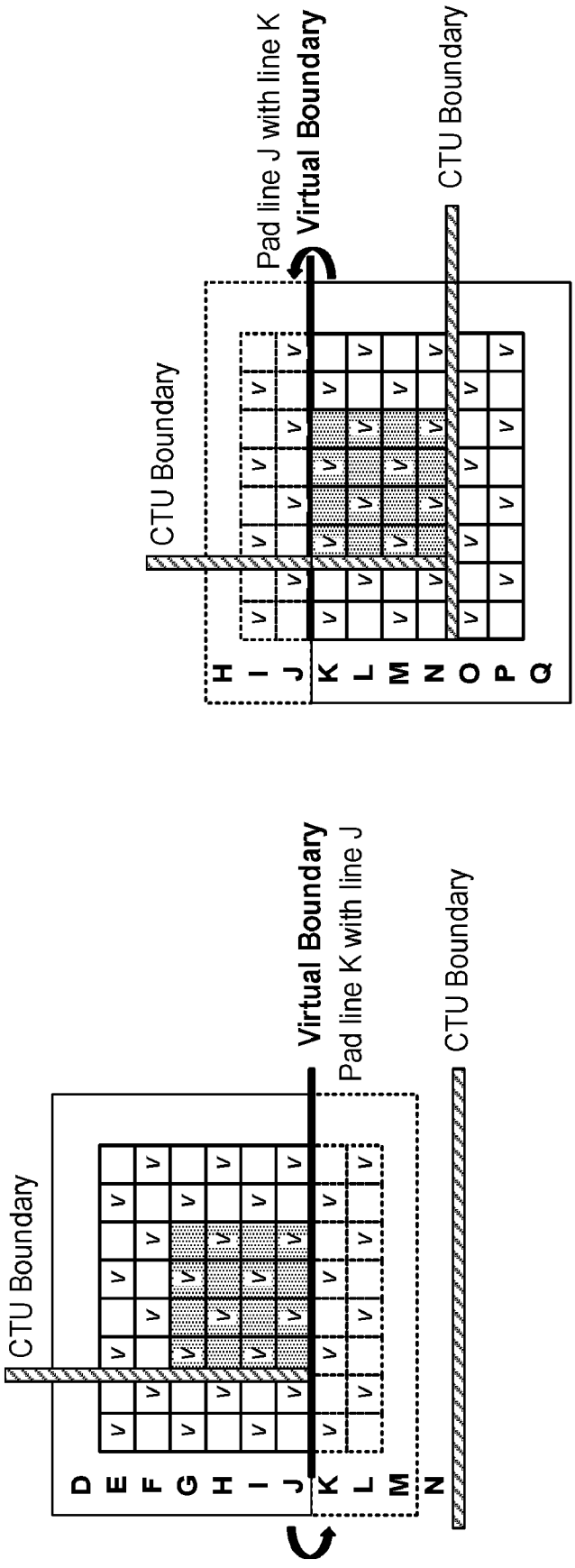

CTU Boundary
Pad line J with line K
Virtual Boundary
CTU Boundary
H I J K L M N O P Q
CTU Boundary
Virtual Boundary
Pad line K with line J
CTU Boundary
D E F G H I J K L M N

FIG. 21

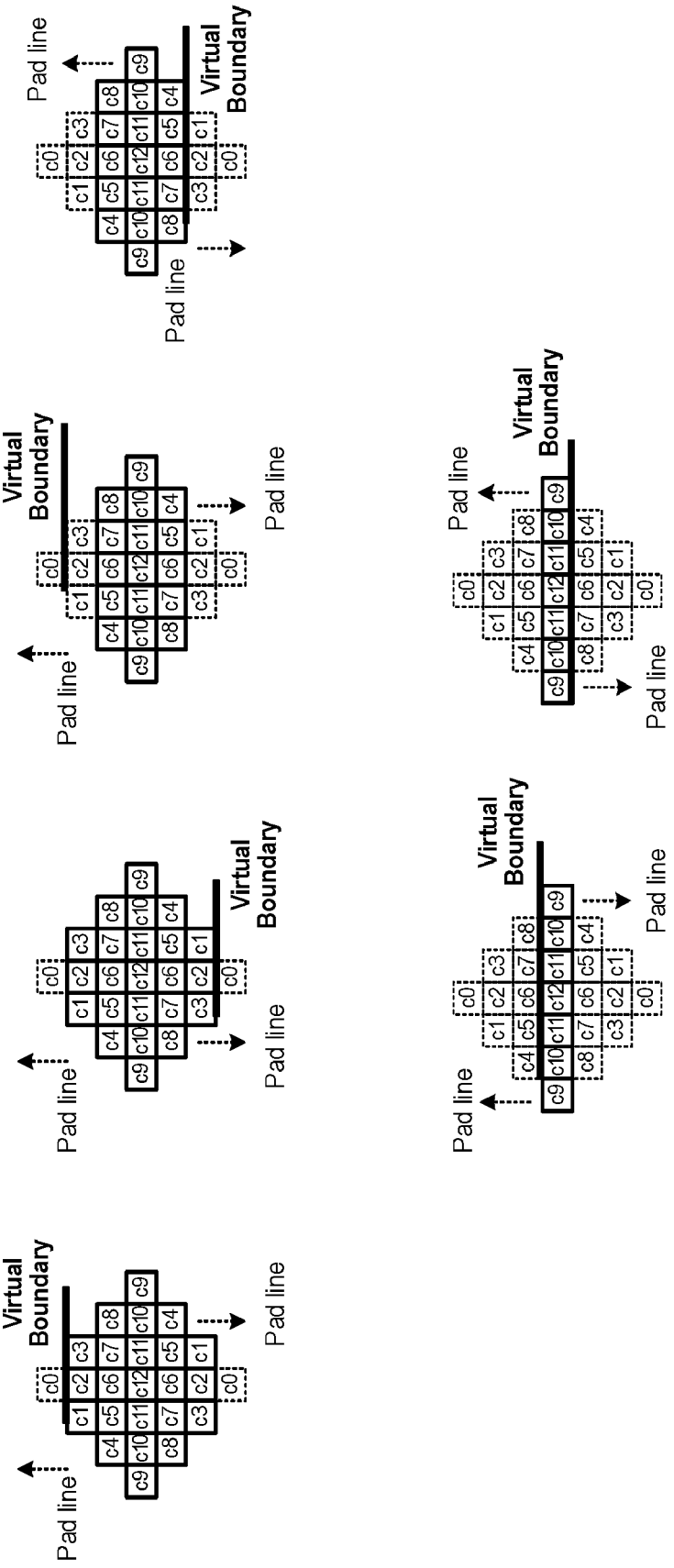

Virtual Boundary
Pad line
c0 c1 c2 c3
c4 c5 c6 c7 c8
c9 c10 c11 c12 c11 c10 c9
c8 c7 c6 c5 c4
c3 c2 c1
c0

FIG. 22

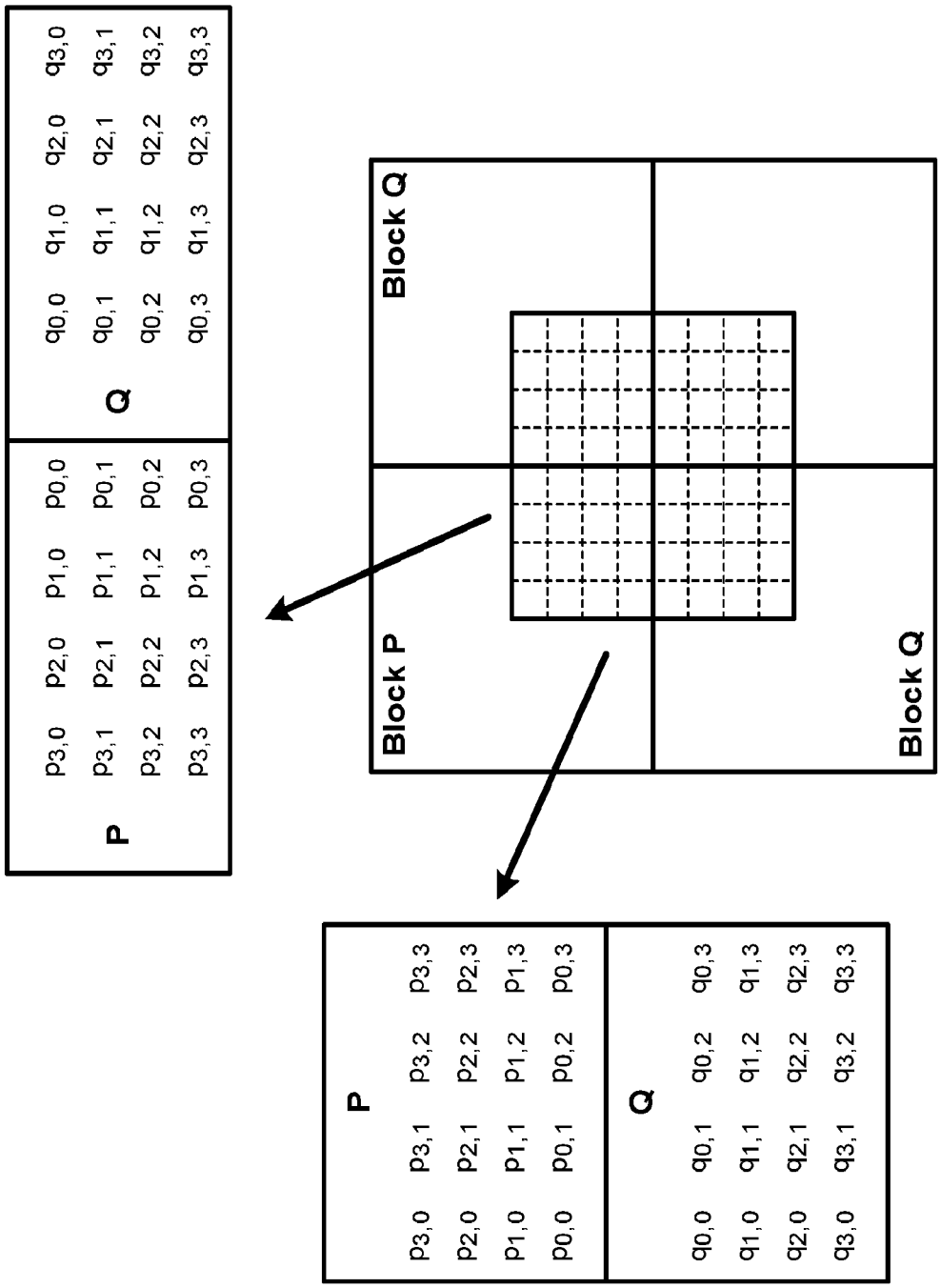


FIG. 23

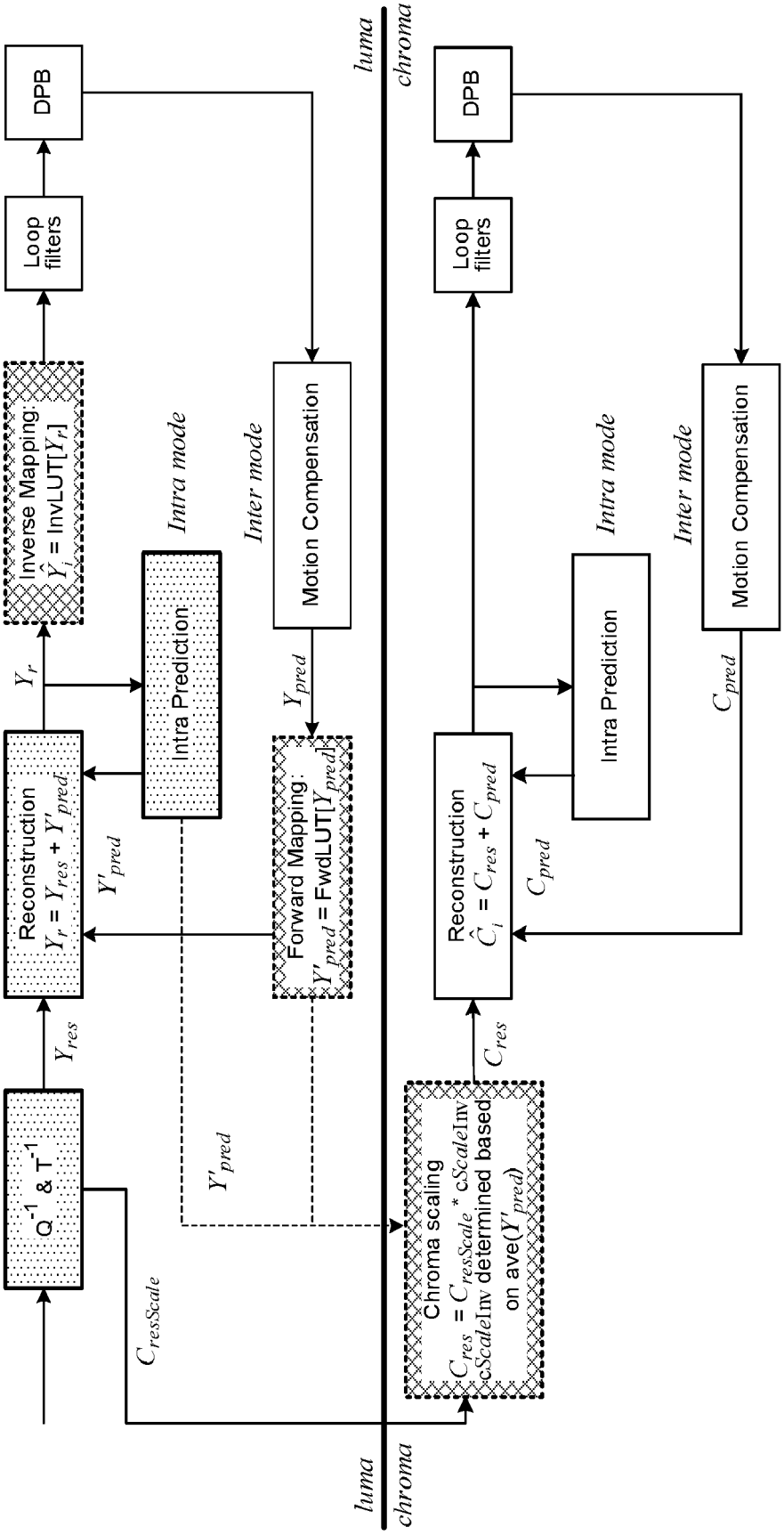

luma
chroma
DPB
Loop filters
Inverse Mapping:
$\hat{Y}_i$ = InvLUT[Y_r]
Y_r
Intra mode
Intra Prediction
Inter mode
Motion Compensation
Y_{pred}
Reconstruction
$Y_r = Y_{res} + Y'_{pred}$
Y'_{pred}
Forward Mapping:
Y'_{pred} = FwdLUT[Y_{pred}]
Y_{res}
Q^{-1} & T^{-1}
$C_{resScale}$
Y'_{pred}
Chroma scaling
$C_{res} = C_{resScale} * cScaleInv$
cScaleInv determined based on ave(Y'_{pred})
C_{res}
Reconstruction
$\hat{C}_i = C_{res} + C_{pred}$
C_{pred}
Intra Prediction
Intra mode
Motion Compensation
Inter mode
C_{pred}
DPB
Loop filters
luma
chroma

FIG. 24