FIG. 1

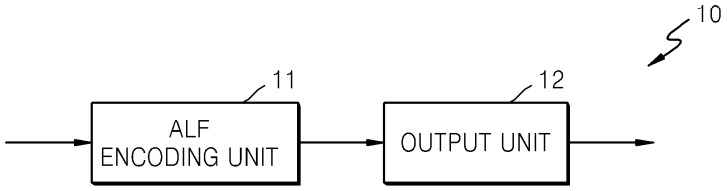

10
11
12
ALF
ENCODING UNIT
OUTPUT UNIT

FIG. 2

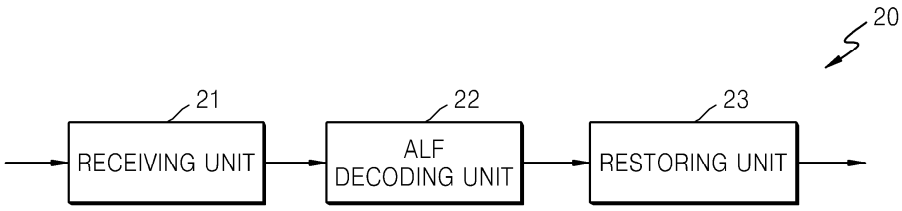

20
21
22
23
RECEIVING UNIT
ALF
DECODING UNIT
RESTORING UNIT

FIG. 3

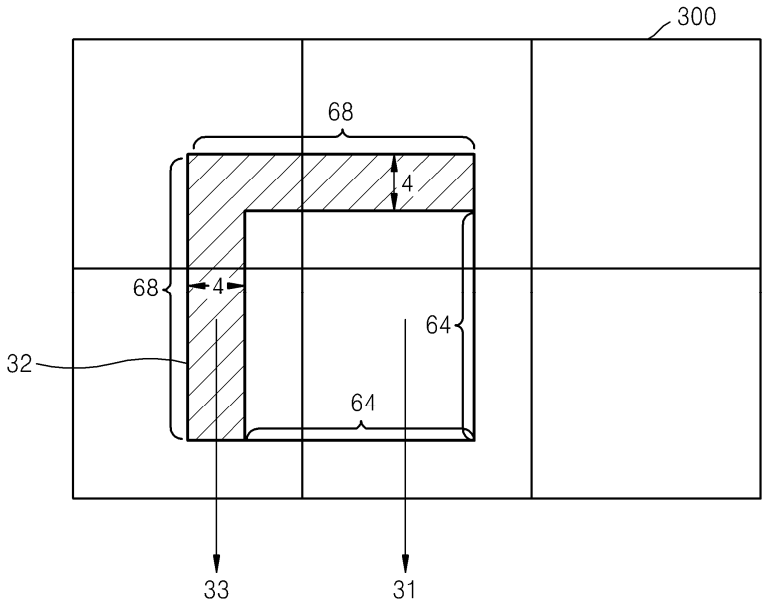


FIG. 4

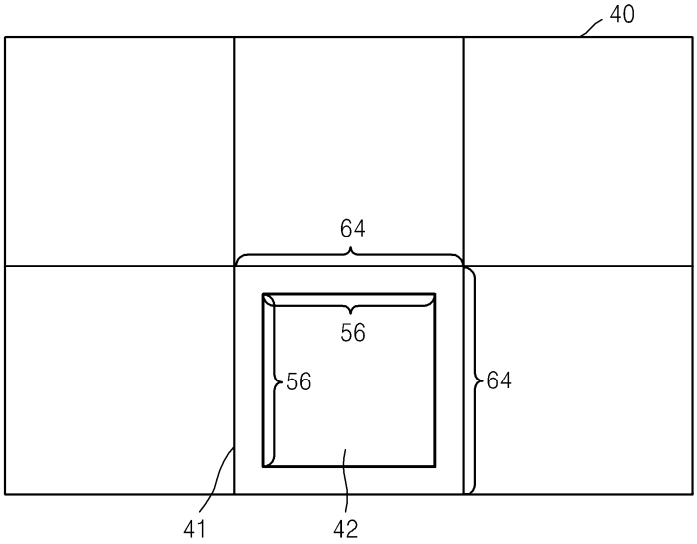


FIG. 5

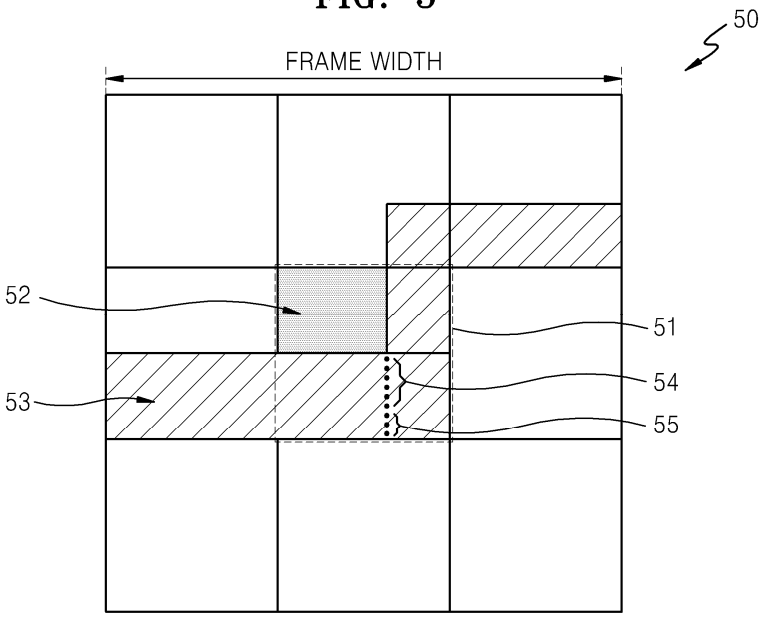


FIG. 6

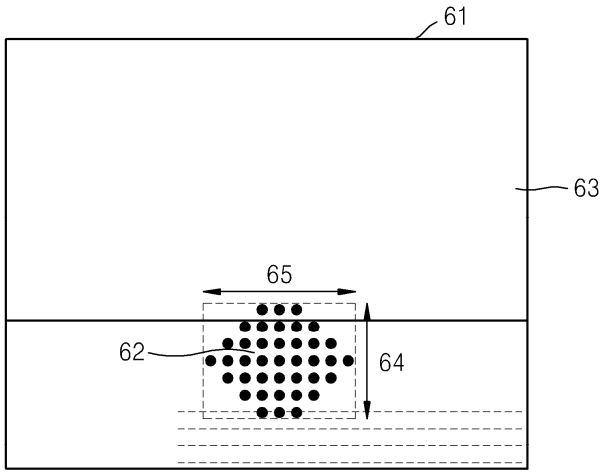


FIG. 7

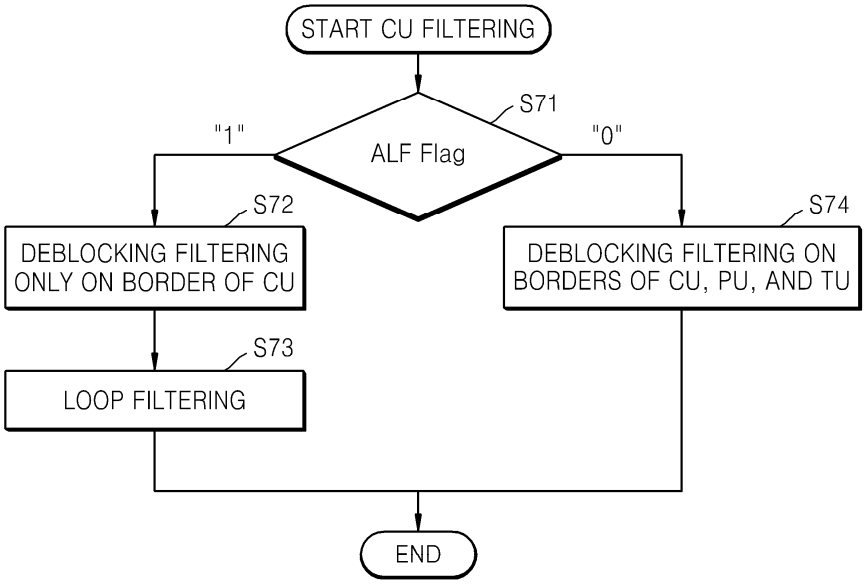
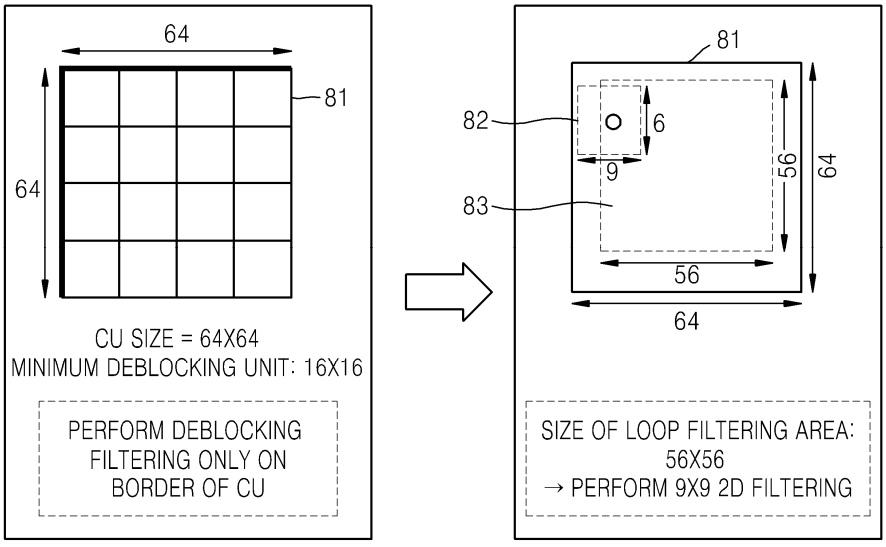
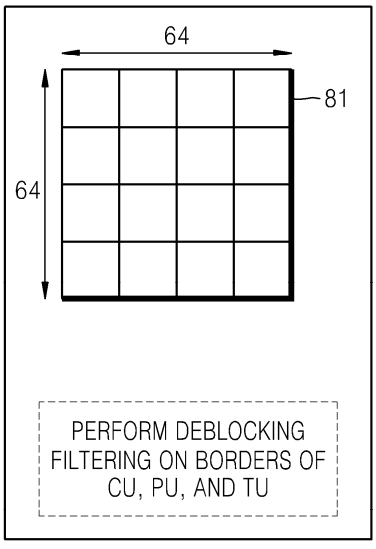

START CU FILTERING
S71
ALF Flag
"1"
"0"
S72
DEBLOCKING FILTERING ONLY ON BORDER OF CU
S73
LOOP FILTERING
S74
DEBLOCKING FILTERING ON BORDERS OF CU, PU, AND TU
END

FIG. 8



S72 : DEBLOCKING FILTERING

S73 : LOOP FILTERING



S74 : DEBLOCKING FILTERING

FIG. 9

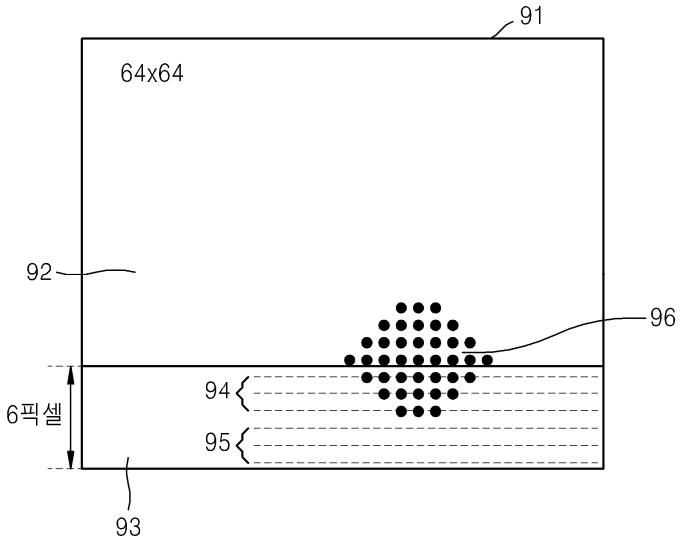


FIG. 10

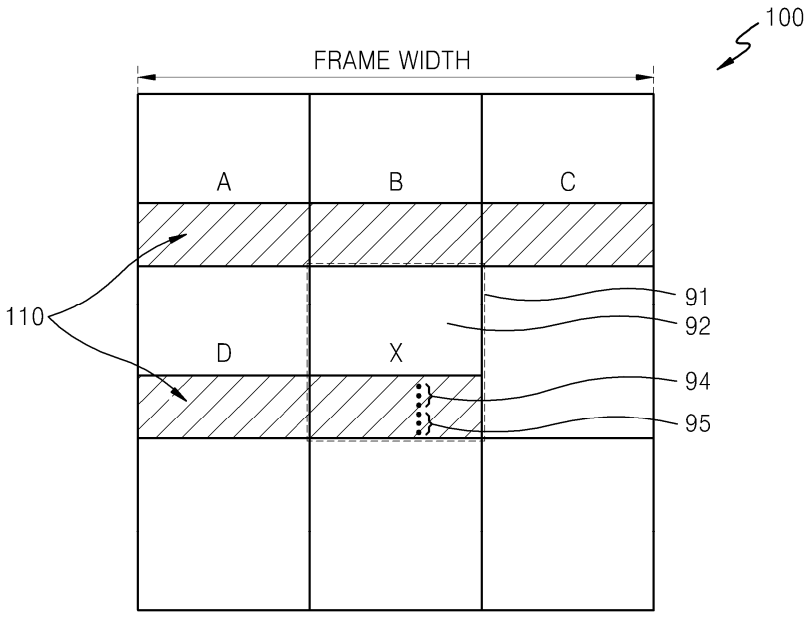


FIG. 11

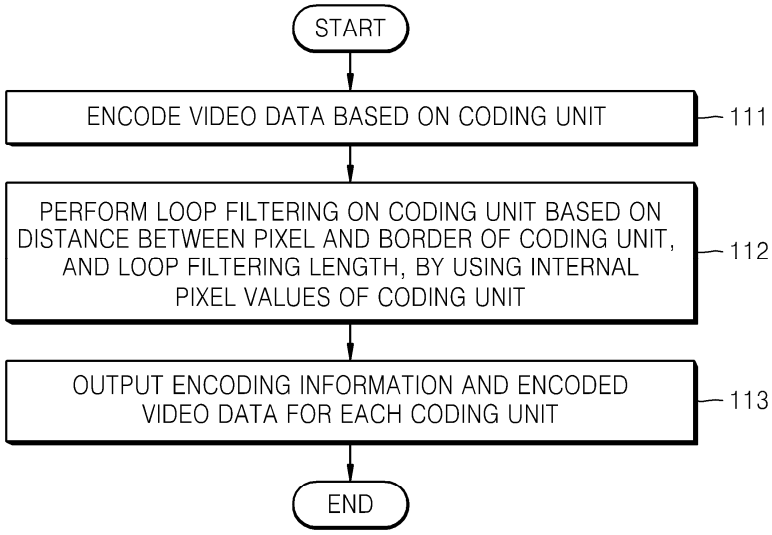

START
ENCODE VIDEO DATA BASED ON CODING UNIT
111
PERFORM LOOP FILTERING ON CODING UNIT BASED ON DISTANCE BETWEEN PIXEL AND BORDER OF CODING UNIT, AND LOOP FILTERING LENGTH, BY USING INTERNAL PIXEL VALUES OF CODING UNIT
112
OUTPUT ENCODING INFORMATION AND ENCODED VIDEO DATA FOR EACH CODING UNIT
113
END

FIG. 12

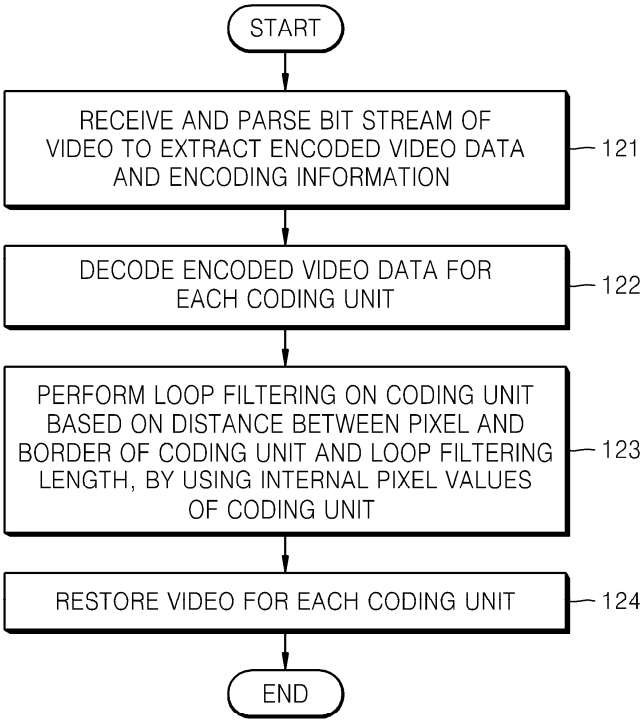

START
RECEIVE AND PARSE BIT STREAM OF VIDEO TO EXTRACT ENCODED VIDEO DATA AND ENCODING INFORMATION
121
DECODE ENCODED VIDEO DATA FOR EACH CODING UNIT
122
PERFORM LOOP FILTERING ON CODING UNIT BASED ON DISTANCE BETWEEN PIXEL AND BORDER OF CODING UNIT AND LOOP FILTERING LENGTH, BY USING INTERNAL PIXEL VALUES OF CODING UNIT
123
RESTORE VIDEO FOR EACH CODING UNIT
124
END

FIG. 13

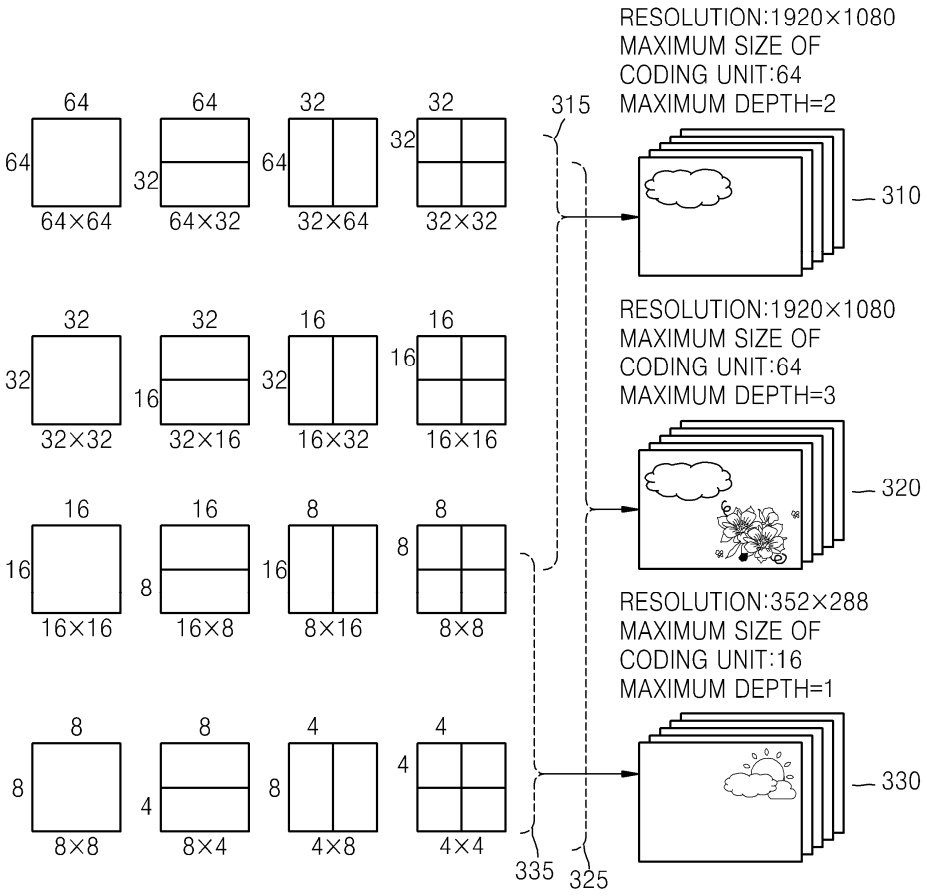

RESOLUTION:1920×1080
MAXIMUM SIZE OF
CODING UNIT:64
MAXIMUM DEPTH=2
315
64
64
64×64
64
32
64×32
32
64
32×64
32
32
32×32
310
RESOLUTION:1920×1080
MAXIMUM SIZE OF
CODING UNIT:64
MAXIMUM DEPTH=3
32
32
32×32
32
16
32×16
16
32
16×32
16
16
16×16
320
RESOLUTION:352×288
MAXIMUM SIZE OF
CODING UNIT:16
MAXIMUM DEPTH=1
16
16
16×16
16
8
16×8
8
16
8×16
8
8
8×8
330
8
8
8×8
8
4
8×4
4
8
4×8
4
4
4×4
335
325

FIG. 14

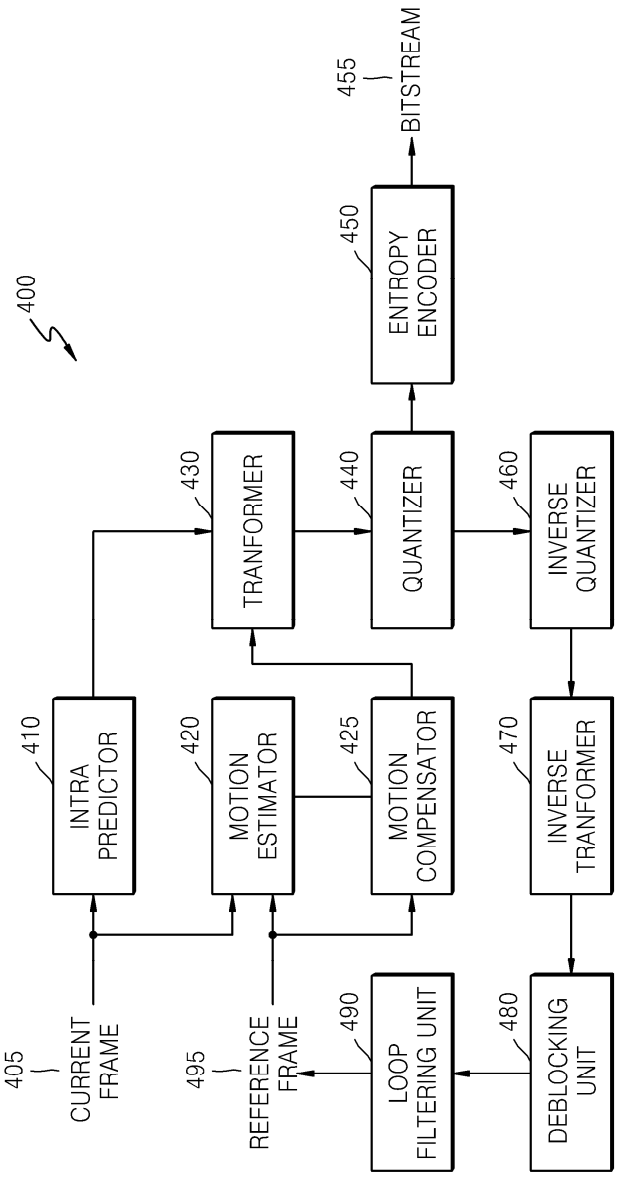

400
405
CURRENT FRAME
410
INTRA PREDICTOR
420
MOTION ESTIMATOR
425
MOTION COMPENSATOR
430
TRANFORMER
440
QUANTIZER
450
ENTROPY ENCODER
455
BITSTREAM
460
INVERSE QUANTIZER
470
INVERSE TRANFORMER
480
DEBLOCKING UNIT
490
LOOP FILTERING UNIT
495
REFERENCE FRAME

FIG. 15

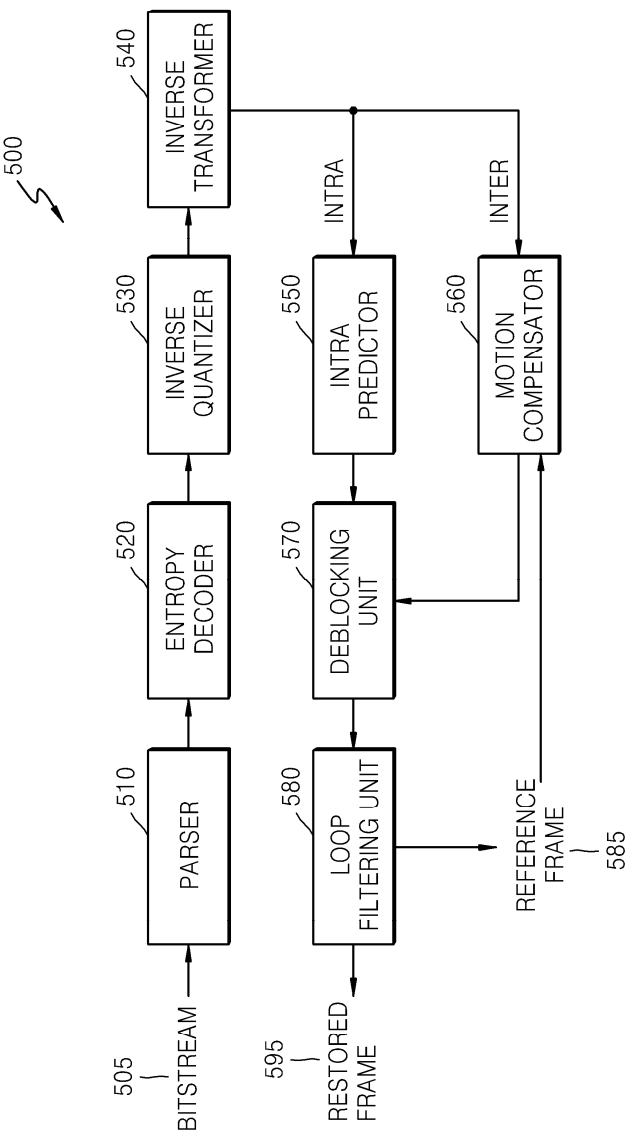

500
505
BITSTREAM
510
PARSER
520
ENTROPY DECODER
530
INVERSE QUANTIZER
540
INVERSE TRANSFORMER
INTRA
550
INTRA PREDICTOR
INTER
560
MOTION COMPENSATOR
570
DEBLOCKING UNIT
580
LOOP FILTERING UNIT
595
RESTORED FRAME
REFERENCE FRAME
585

FIG. 16

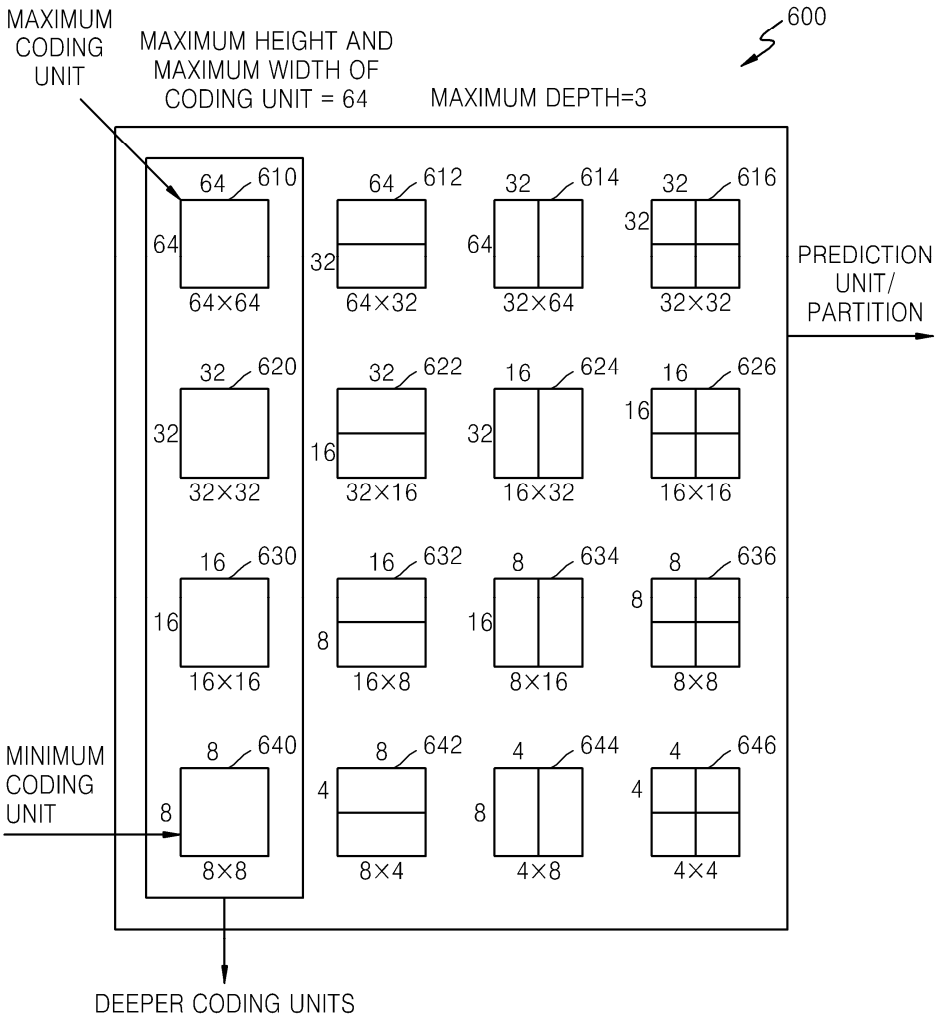

MAXIMUM CODING UNIT
MAXIMUM HEIGHT AND MAXIMUM WIDTH OF CODING UNIT = 64
MAXIMUM DEPTH=3
600
PREDICTION UNIT/ PARTITION
MINIMUM CODING UNIT
DEEPER CODING UNITS
64 610
64×64
64 612
64×32
32 614
32×64
32 616
32×32
32 620
32×32
32 622
32×16
16 624
16×32
16 626
16×16
16 630
16×16
16 632
16×8
8 634
8×16
8 636
8×8
8 640
8×8
8 642
8×4
4 644
4×8
4 646
4×4

FIG. 17

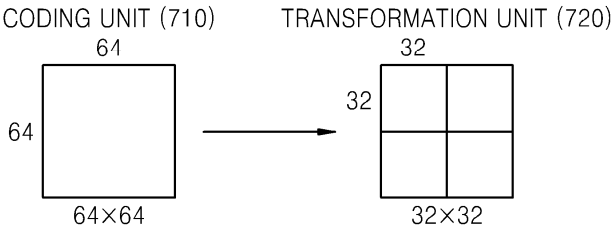

CODING UNIT (710)
TRANSFORMATION UNIT (720)
64
64
64×64
32
32
32×32

FIG. 18

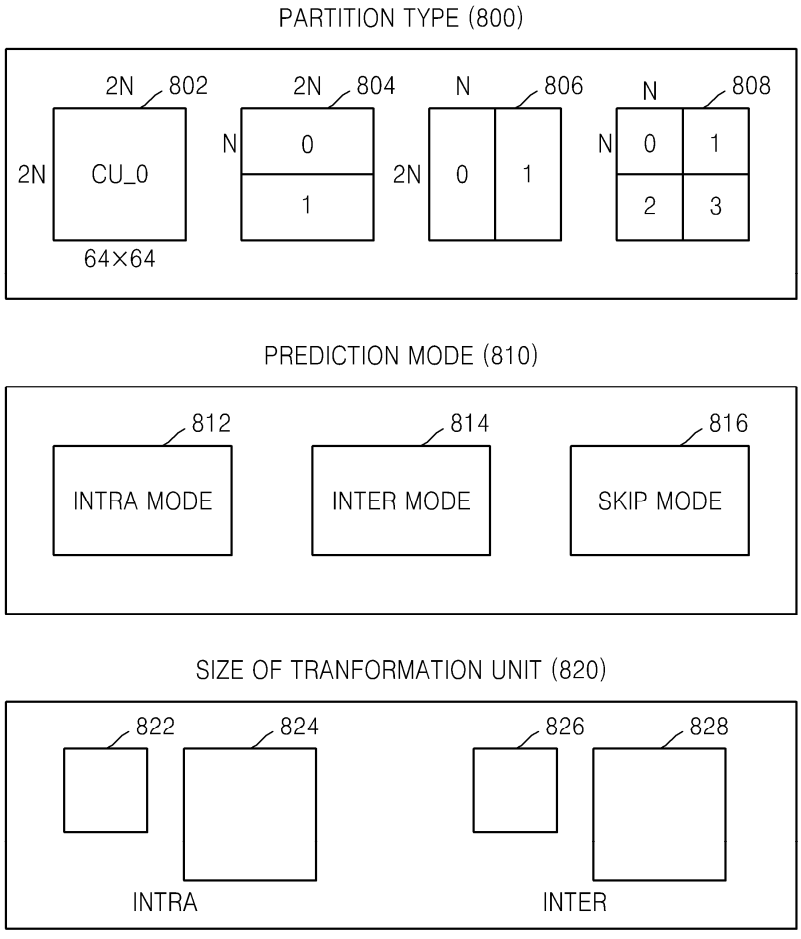

PARTITION TYPE (800)
2N
802
2N
CU_0
64×64
2N
804
N
0
1
N
806
2N
0
1
N
808
N
0
1
2
3
PREDICTION MODE (810)
812
INTRA MODE
814
INTER MODE
816
SKIP MODE
SIZE OF TRANFORMATION UNIT (820)
822
824
INTRA
826
828
INTER

FIG. 19

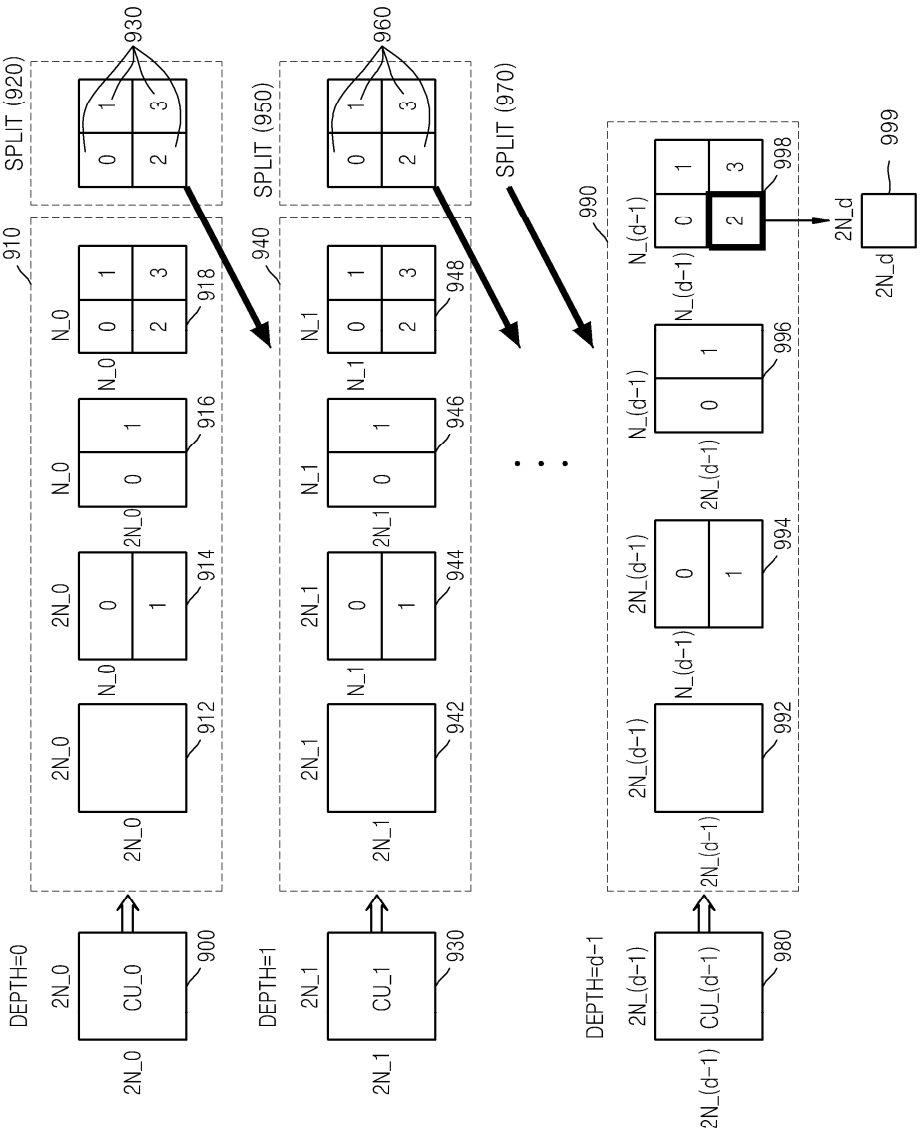
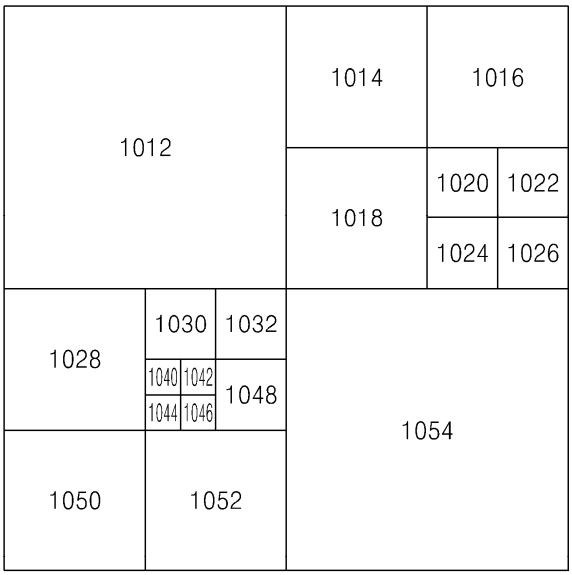

DEPTH=0
DEPTH=1
DEPTH=d-1
CU_0
CU_1
CU_(d-1)
SPLIT (920)
SPLIT (950)
SPLIT (970)
910
940
990
900
930
980
912
914
916
918
942
944
946
948
992
994
996
998
999
930
960
2N_0
2N_1
2N_(d-1)
N_0
N_1
N_(d-1)
2N_d

FIG. 20



CODING UNIT (1010)

FIG. 21

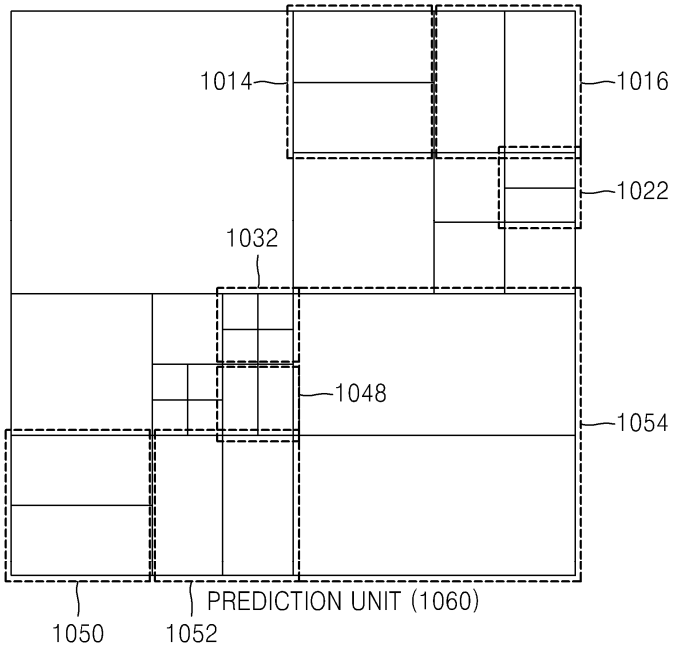

1014
1016
1022
1032
1048
1054
PREDICTION UNIT (1060)
1050
1052

FIG. 22

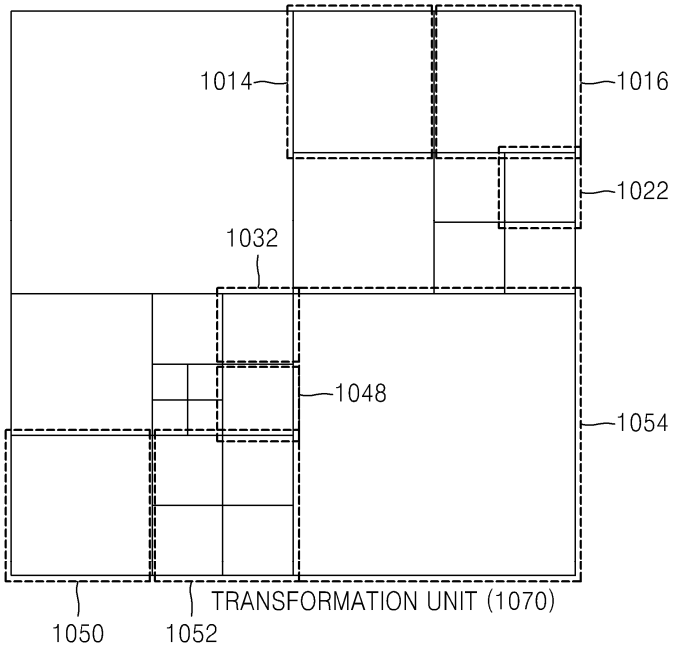
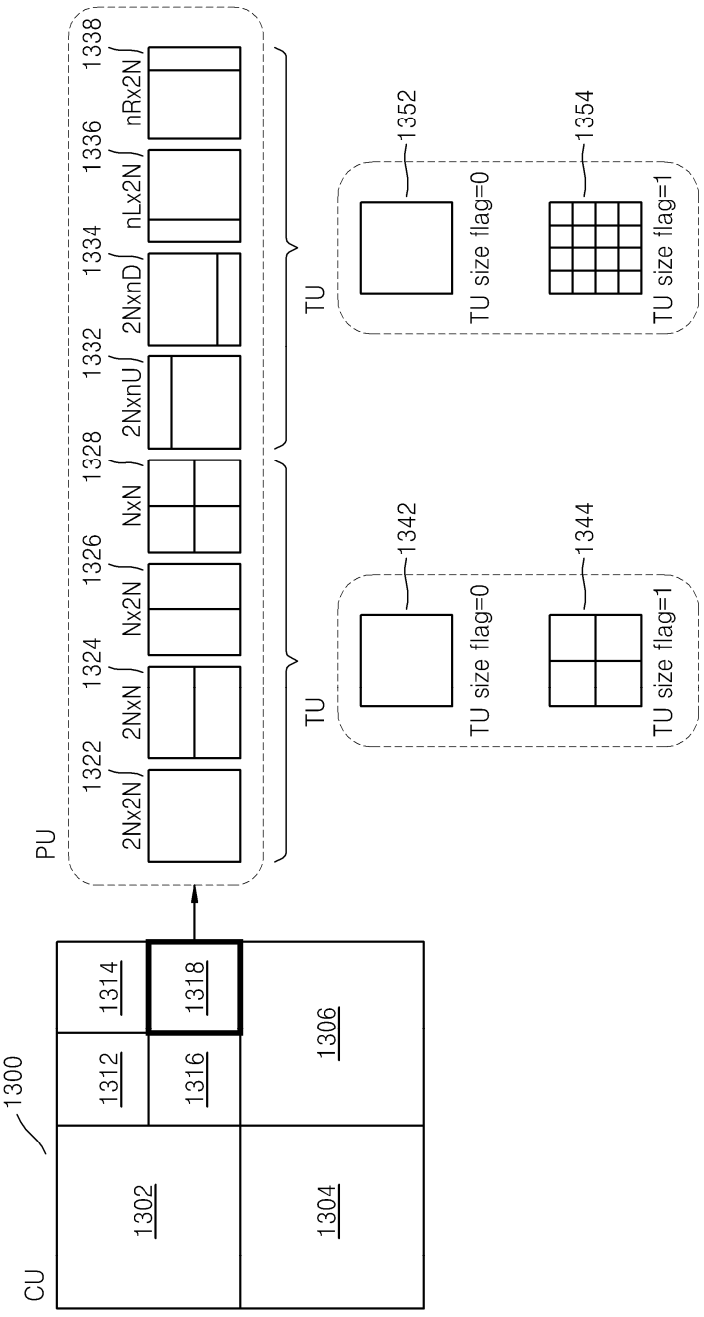

1014
1016
1022
1032
1048
1054
TRANSFORMATION UNIT (1070)
1050
1052

FIG. 23


CU
1300
1302
1304
1306
1312
1314
1316
1318
PU
1322
2Nx2N
1324
2NxN
1326
Nx2N
1328
NxN
1332
2NxnU
1334
2NxnD
1336
nLx2N
1338
nRx2N
TU
TU
1342
TU size flag=0
1344
TU size flag=1
1352
TU size flag=0
1354
TU size flag=1