FIG. 1

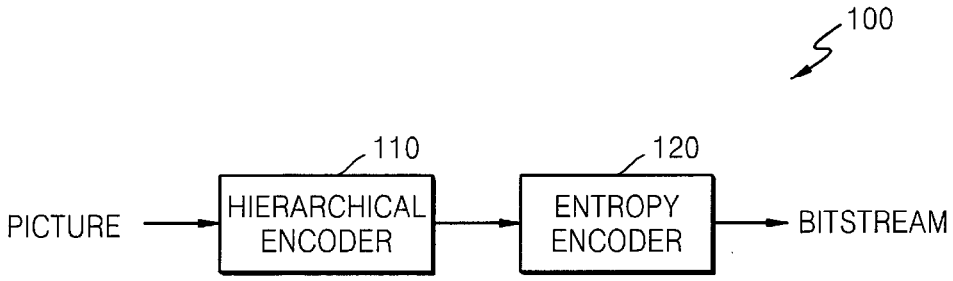

100
110
120
PICTURE
HIERARCHICAL ENCODER
ENTROPY ENCODER
BITSTREAM

FIG. 2

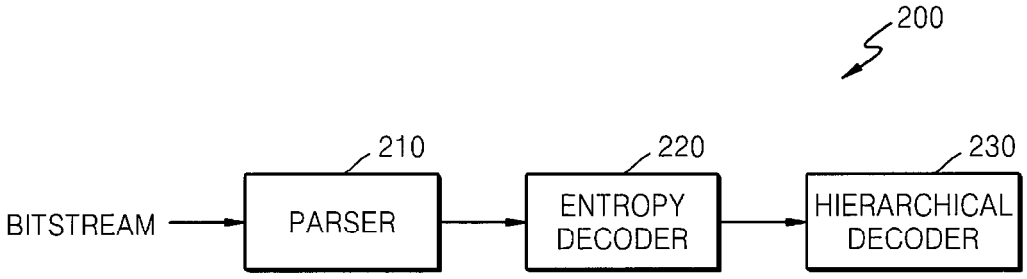

200
210
220
230
BITSTREAM
PARSER
ENTROPY DECODER
HIERARCHICAL DECODER

FIG. 3

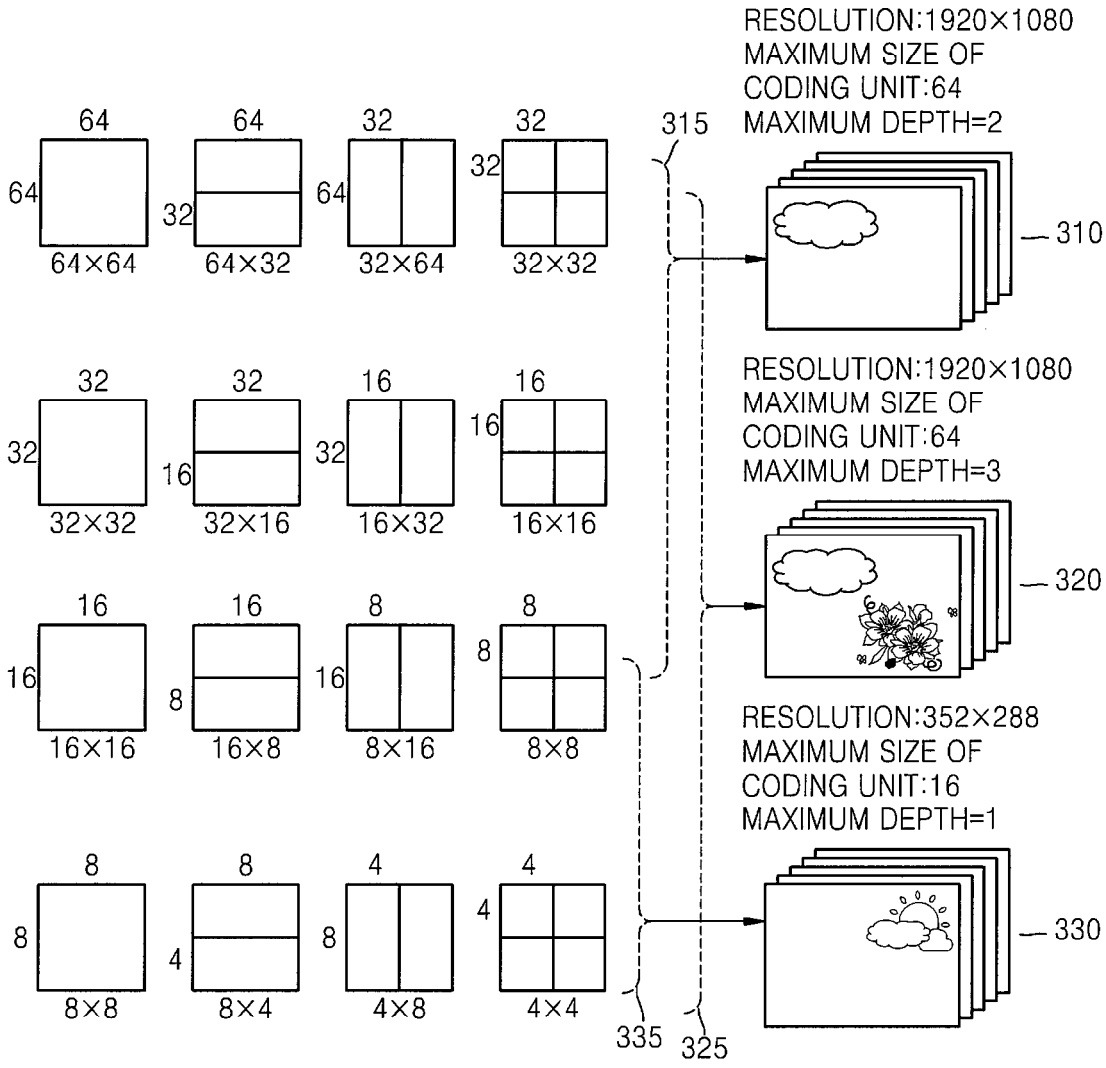

RESOLUTION:1920×1080
MAXIMUM SIZE OF
CODING UNIT:64
MAXIMUM DEPTH=2
315
64×64
64×32
32×64
32×32
310
RESOLUTION:1920×1080
MAXIMUM SIZE OF
CODING UNIT:64
MAXIMUM DEPTH=3
32×32
32×16
16×32
16×16
320
RESOLUTION:352×288
MAXIMUM SIZE OF
CODING UNIT:16
MAXIMUM DEPTH=1
16×16
16×8
8×16
8×8
330
8×8
8×4
4×8
4×4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

FIG. 4

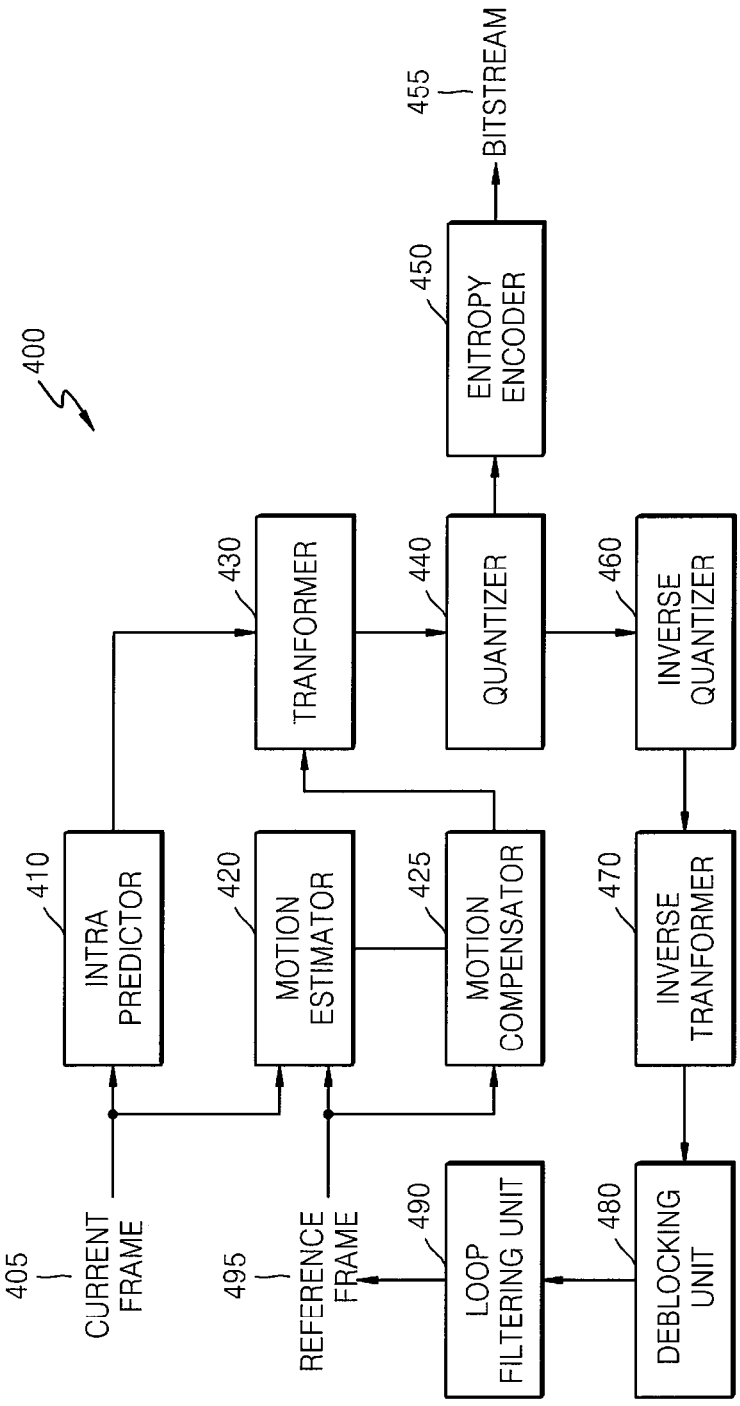

400
405
CURRENT FRAME
410
INTRA PREDICTOR
420
MOTION ESTIMATOR
425
MOTION COMPENSATOR
430
TRANFORMER
440
QUANTIZER
450
ENTROPY ENCODER
455
BITSTREAM
460
INVERSE QUANTIZER
470
INVERSE TRANFORMER
480
DEBLOCKING UNIT
490
LOOP FILTERING UNIT
495
REFERENCE FRAME

FIG. 5

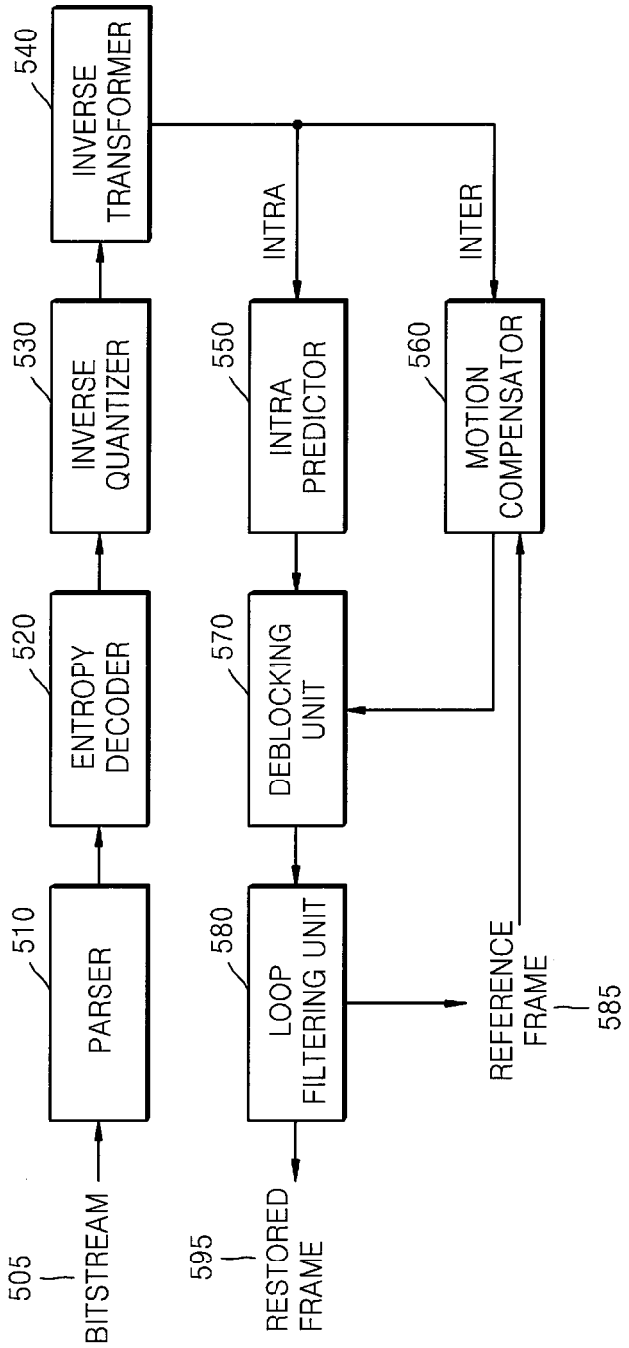

500
505
BITSTREAM
510
PARSER
520
ENTROPY DECODER
530
INVERSE QUANTIZER
540
INVERSE TRANSFORMER
INTRA
INTER
550
INTRA PREDICTOR
560
MOTION COMPENSATOR
570
DEBLOCKING UNIT
580
LOOP FILTERING UNIT
595
RESTORED FRAME
REFERENCE FRAME
585

FIG. 6

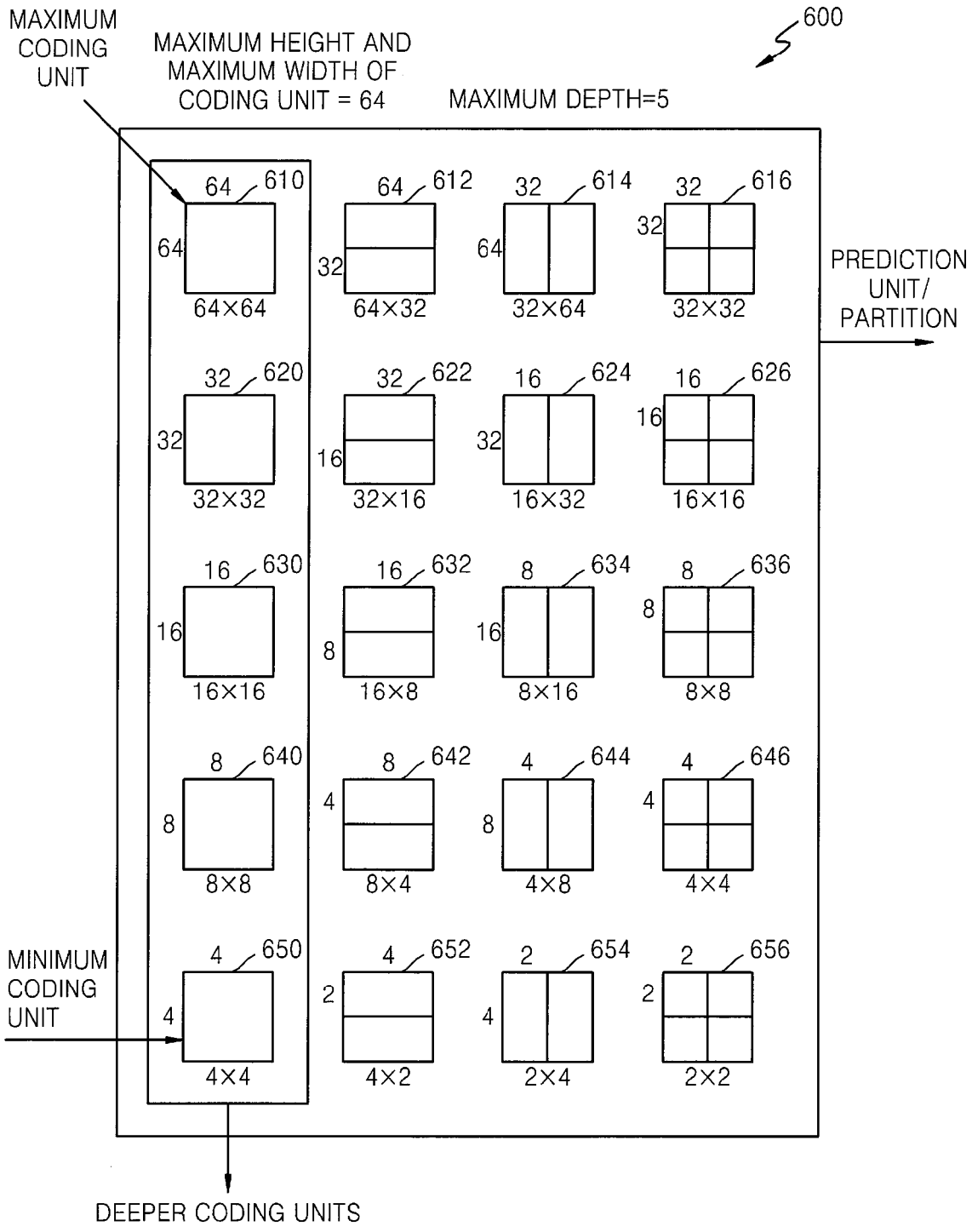

600
MAXIMUM CODING UNIT
MAXIMUM HEIGHT AND MAXIMUM WIDTH OF CODING UNIT = 64
MAXIMUM DEPTH=5
PREDICTION UNIT/ PARTITION
64 610
64
64×64
64 612
32
64×32
32 614
64
32×64
32 616
32
32×32
32 620
32
32×32
32 622
16
32×16
16 624
32
16×32
16 626
16
16×16
16 630
16
16×16
16 632
8
16×8
8 634
16
8×16
8 636
8
8×8
8 640
8
8×8
8 642
4
8×4
4 644
8
4×8
4 646
4
4×4
4 650
4
4×4
4 652
2
4×2
2 654
4
2×4
2 656
2
2×2
MINIMUM CODING UNIT
DEEPER CODING UNITS

FIG. 7

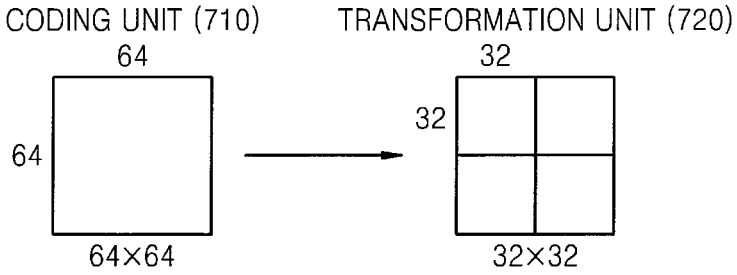

CODING UNIT (710)
TRANSFORMATION UNIT (720)
64
64
64×64
32
32
32×32

FIG. 8

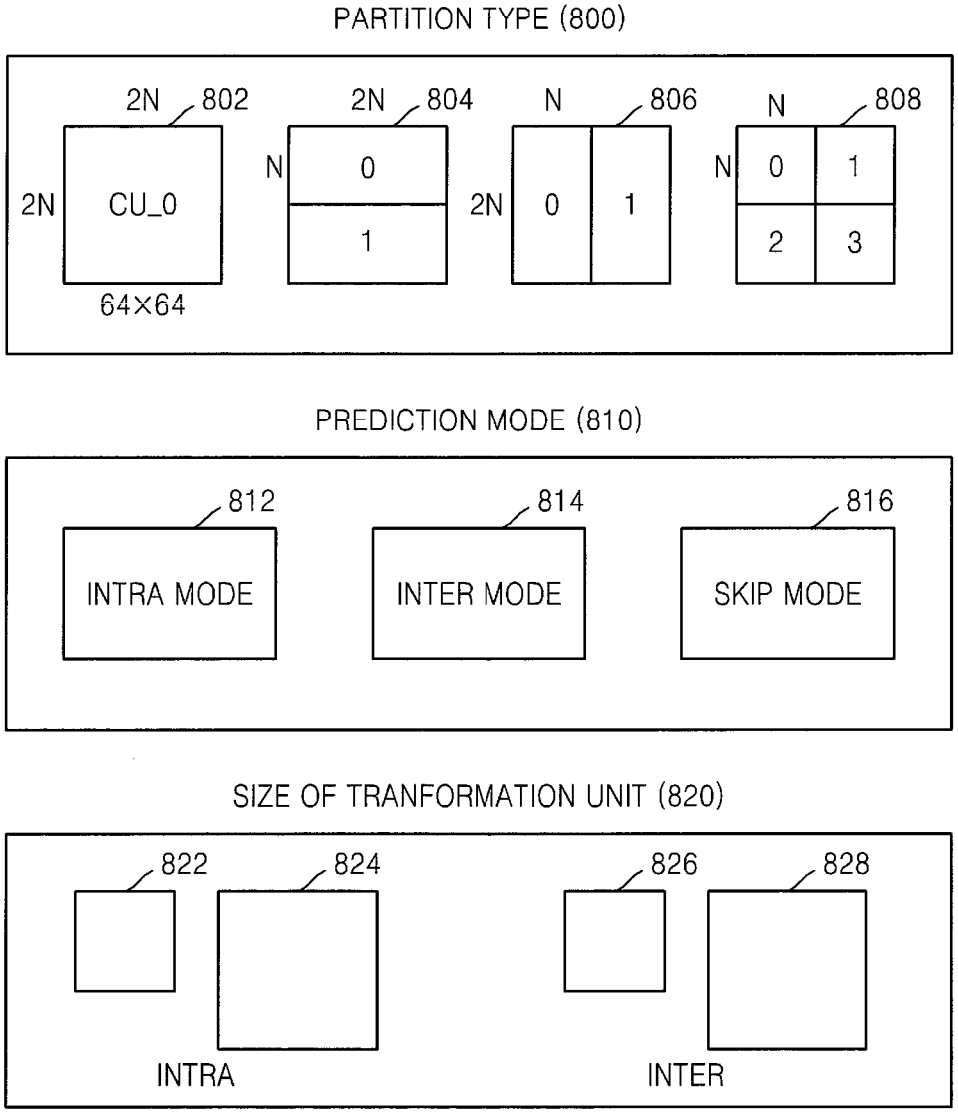

PARTITION TYPE (800)
2N
802
2N
CU_0
64×64
2N
804
N
0
1
N
806
2N
0
1
N
808
N
0
1
2
3
PREDICTION MODE (810)
812
INTRA MODE
814
INTER MODE
816
SKIP MODE
SIZE OF TRANFORMATION UNIT (820)
822
824
826
828
INTRA
INTER

FIG. 9

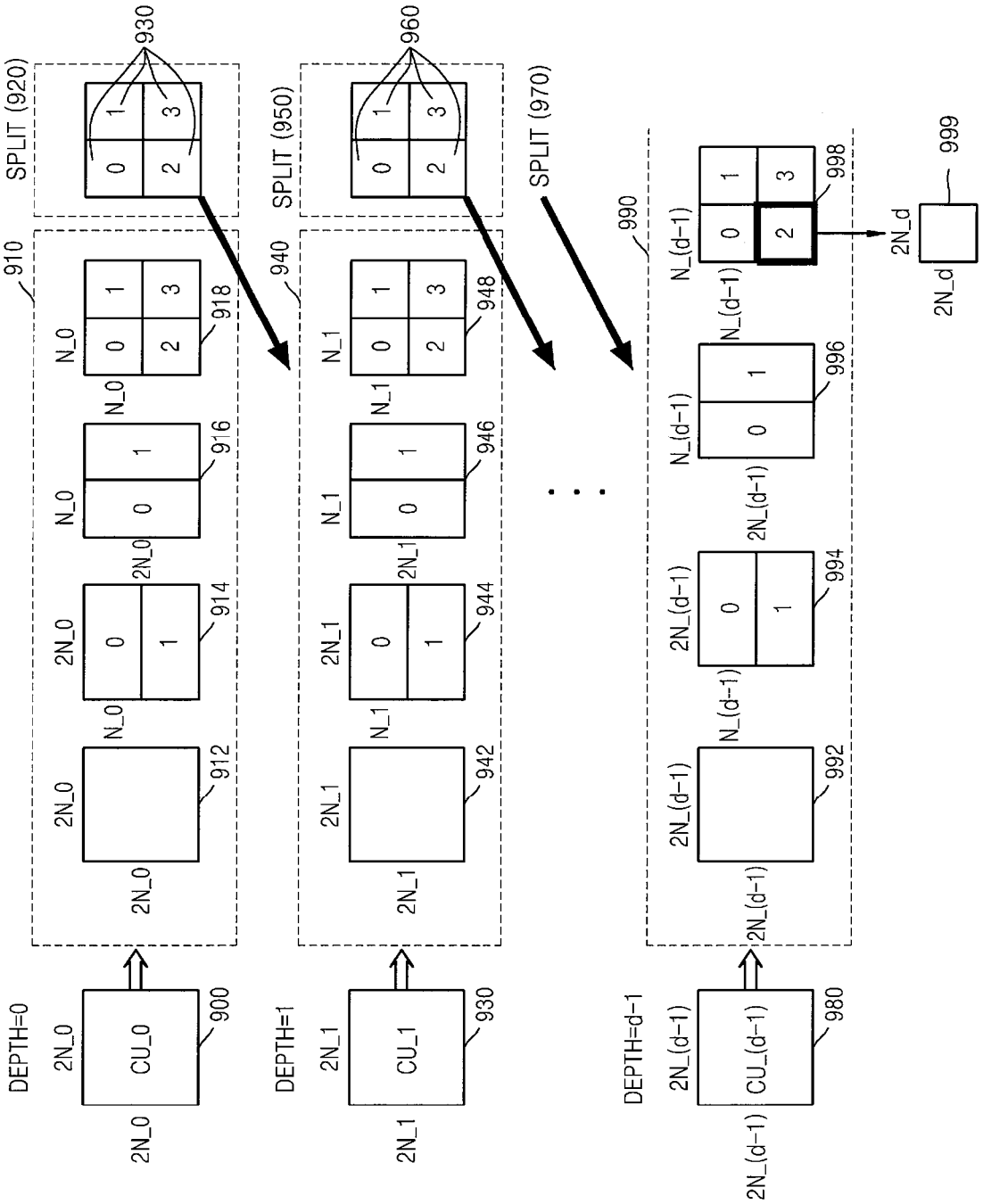
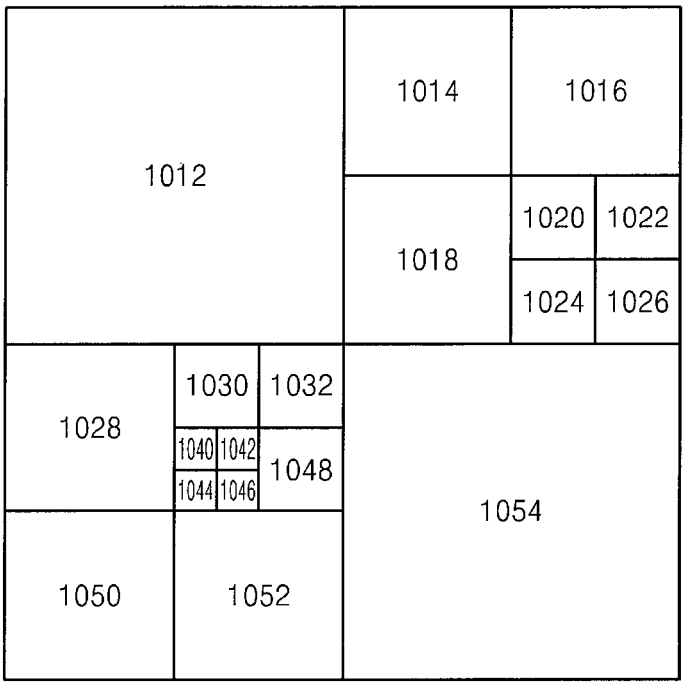

DEPTH=0
DEPTH=1
DEPTH=d-1
CU_0
CU_1
CU_(d-1)
900
930
980
910
940
990
SPLIT (920)
SPLIT (950)
SPLIT (970)
912
914
916
918
942
944
946
948
992
994
996
998
999
930
960
2N_0
N_0
2N_1
N_1
2N_(d-1)
N_(d-1)
2N_d
0
1
2
3

FIG. 10



CODING UNIT (1010)

FIG. 11

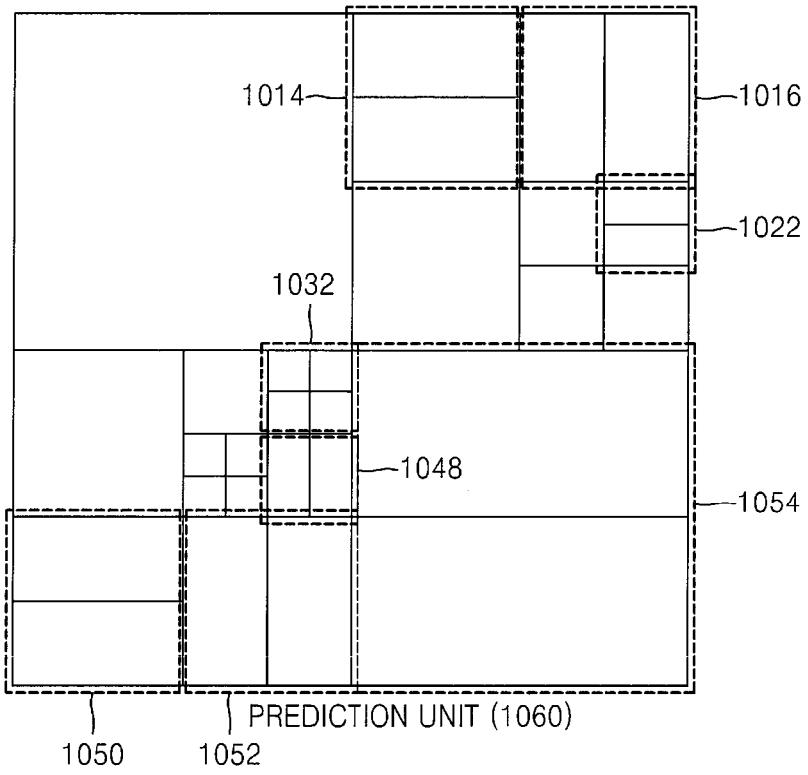

1014
1016
1022
1032
1048
1054
PREDICTION UNIT (1060)
1050
1052

FIG. 12

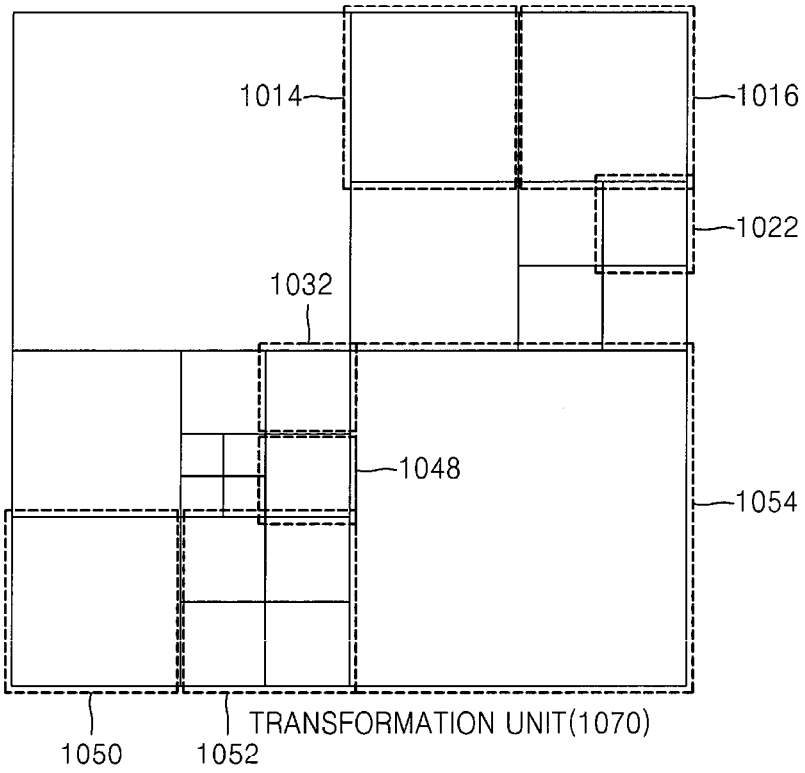

1014
1016
1022
1032
1048
1054
1050
1052
TRANSFORMATION UNIT(1070)

FIG. 13

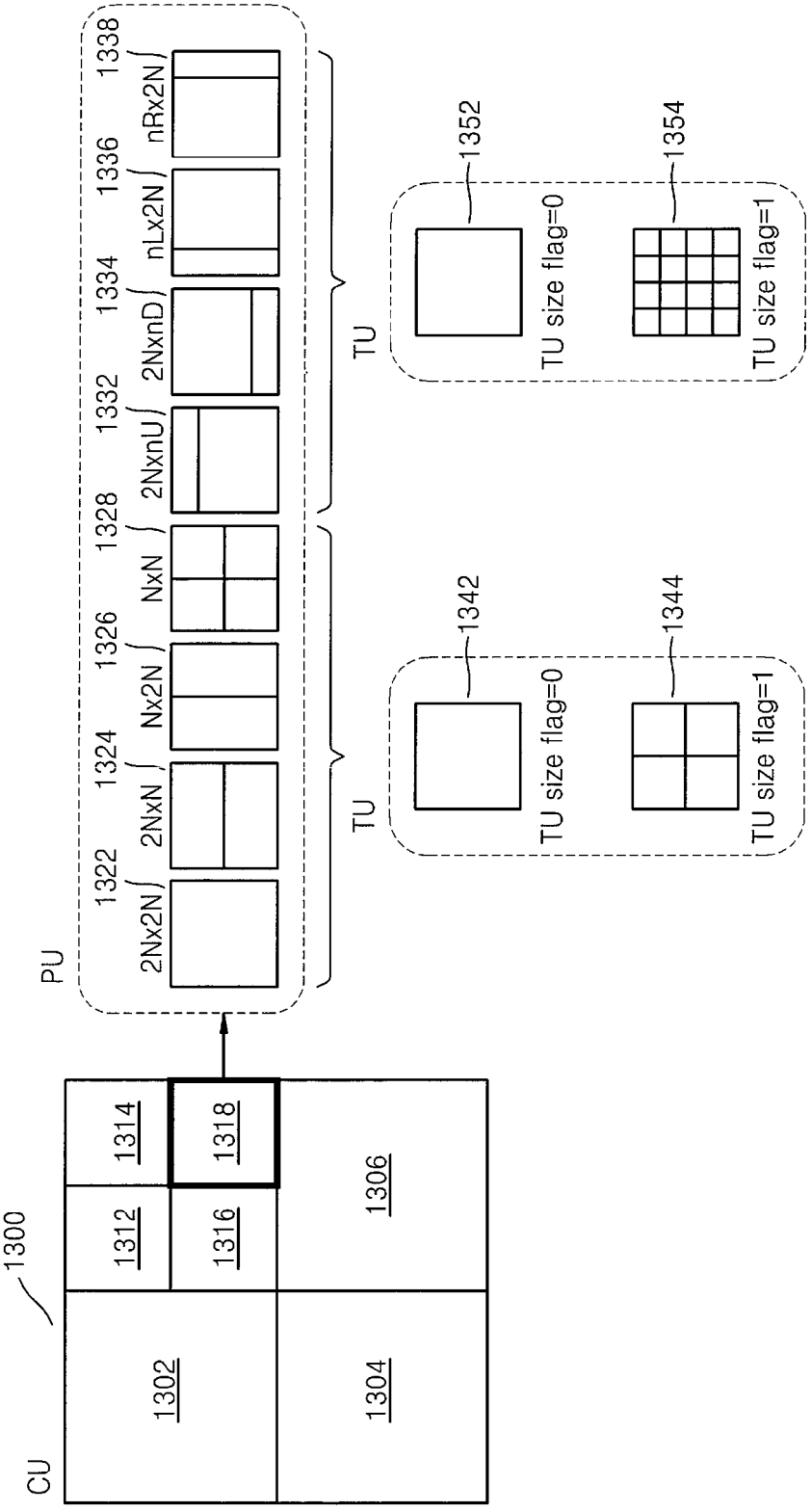

CU
1300
1302
1304
1306
1312
1314
1316
1318
PU
2Nx2N
1322
2NxN
1324
Nx2N
1326
NxN
1328
2NxnU
1332
2NxnD
1334
nLx2N
1336
nRx2N
1338
TU
TU
1342
TU size flag=0
1344
TU size flag=1
1352
TU size flag=0
1354
TU size flag=1

FIG. 14

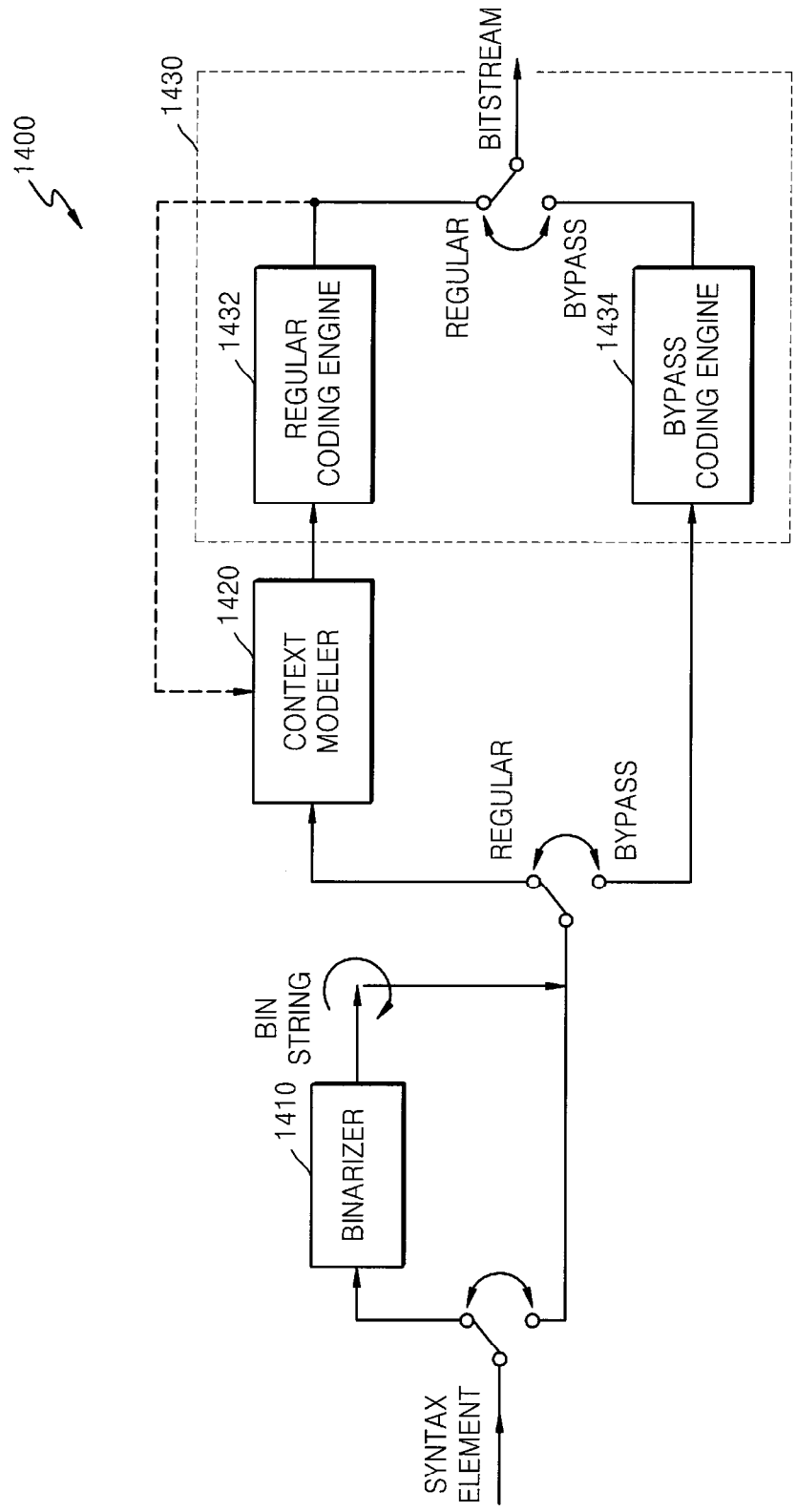

1400
1430
BITSTREAM
REGULAR
BYPASS
1432
REGULAR CODING ENGINE
1434
BYPASS CODING ENGINE
1420
CONTEXT MODELER
REGULAR
BYPASS
BIN STRING
1410
BINARIZER
SYNTAX ELEMENT

FIG. 15

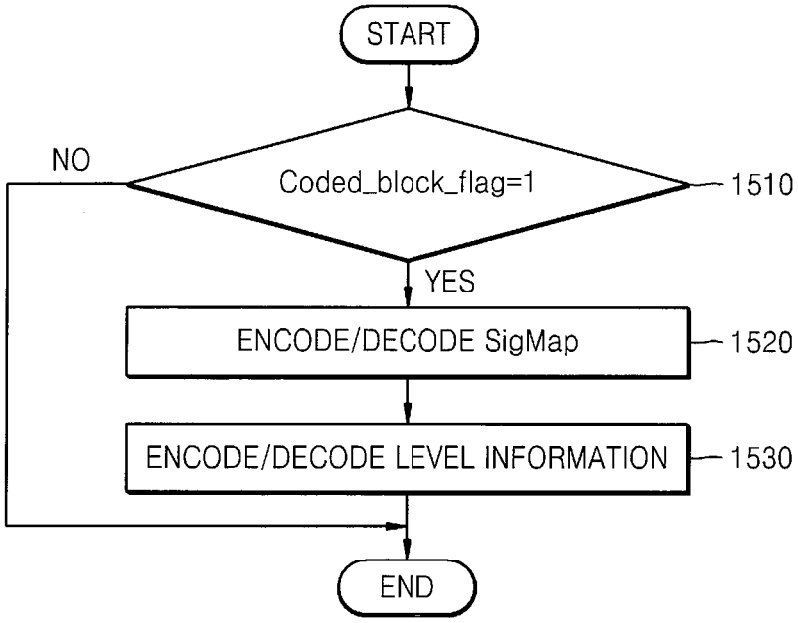

START
Coded_block_flag=1
NO
1510
YES
ENCODE/DECODE SigMap
1520
ENCODE/DECODE LEVEL INFORMATION
1530
END

FIG. 16

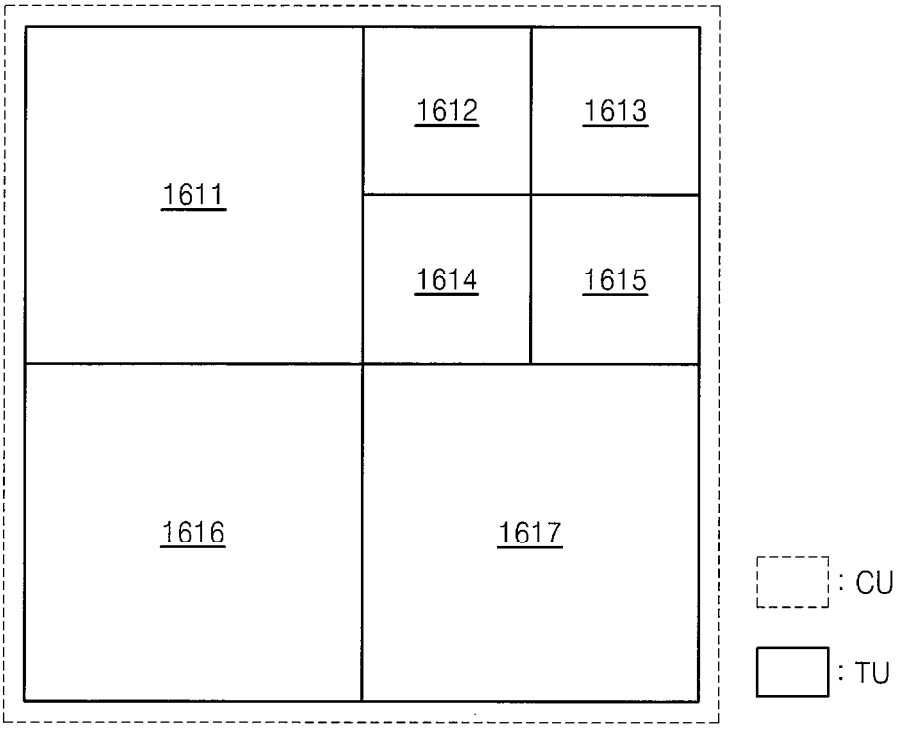

1611
1612
1613
1614
1615
1616
1617
: CU
: TU

FIG. 17

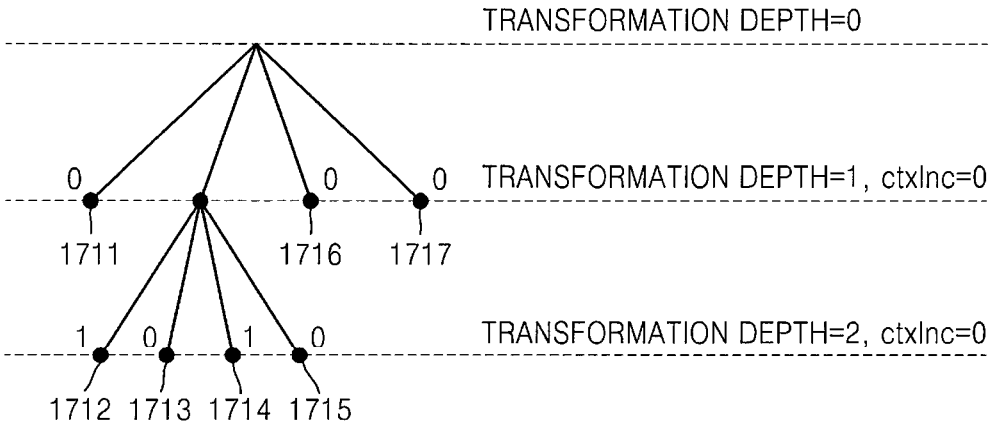

TRANSFORMATION DEPTH=0
0
0
0
TRANSFORMATION DEPTH=1, ctxInc=0
1711
1716
1717
1
0
1
0
TRANSFORMATION DEPTH=2, ctxInc=0
1712
1713
1714
1715

FIG. 18

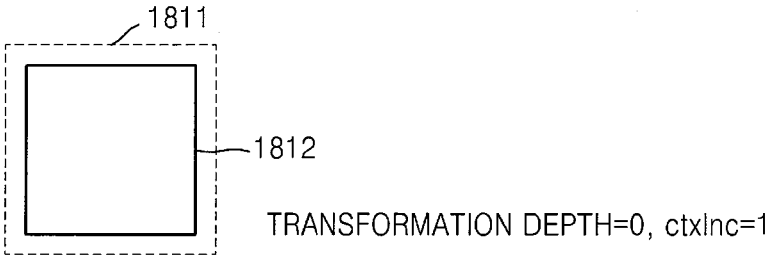

1811
1812
TRANSFORMATION DEPTH=0, ctxInc=1

FIG. 19

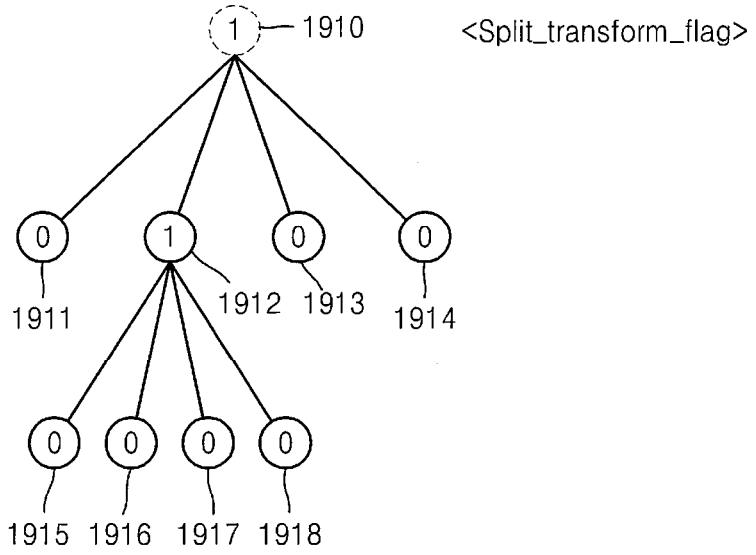

1
1910
<Split_transform_flag>
0
1
0
0
1911
1912
1913
1914
0
0
0
0
1915
1916
1917
1918

FIG. 20

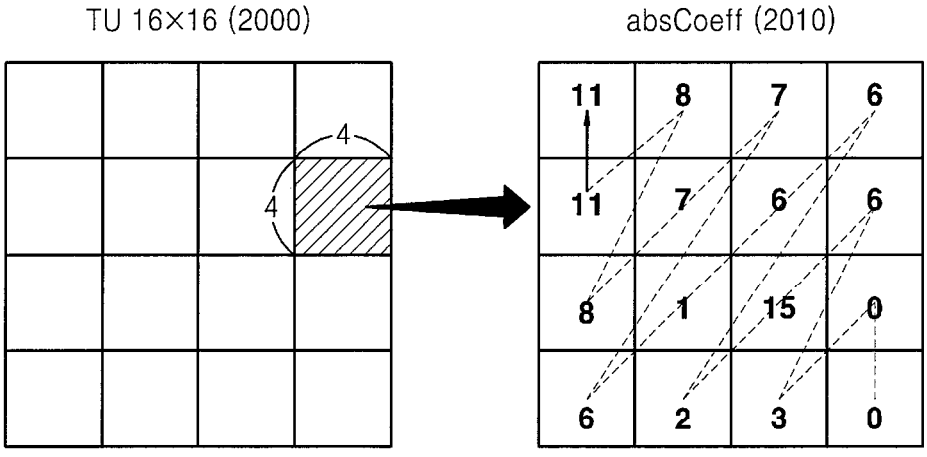

TU 16×16 (2000)
absCoeff (2010)
4
4
11
8
7
6
11
7
6
6
8
1
15
0
6
2
3
0

FIG. 21

SigMap (2100)

1	1	1	1
1	1	1	1
1	1	1	0
1	1	1	0

FIG. 22

coeff_abs_level_greater1_flag (2200)

1	1	1	1
1	1	1	1
1	0	1	
1	1	1	

2210

FIG. 23

coeff_abs_level_greater2_flag (2300)

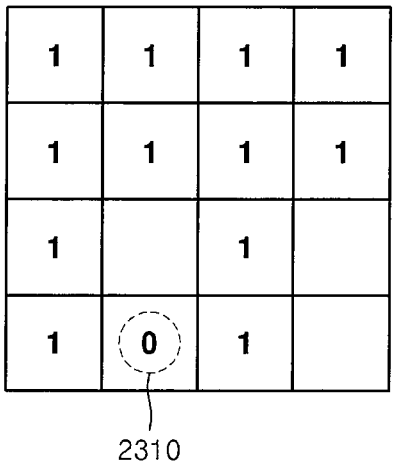


FIG. 24

coeff_abs_level_remaining_flag (2400)

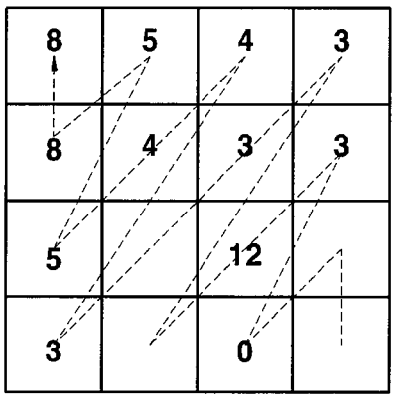


FIG. 25

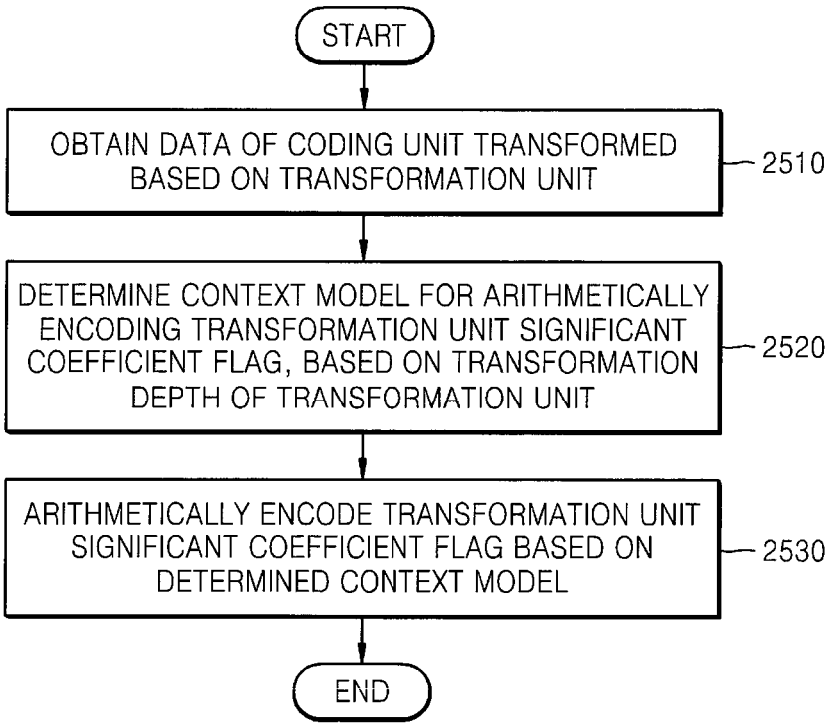

START
OBTAIN DATA OF CODING UNIT TRANSFORMED BASED ON TRANSFORMATION UNIT
2510
DETERMINE CONTEXT MODEL FOR ARITHMETICALLY ENCODING TRANSFORMATION UNIT SIGNIFICANT COEFFICIENT FLAG, BASED ON TRANSFORMATION DEPTH OF TRANSFORMATION UNIT
2520
ARITHMETICALLY ENCODE TRANSFORMATION UNIT SIGNIFICANT COEFFICIENT FLAG BASED ON DETERMINED CONTEXT MODEL
2530
END

FIG. 26

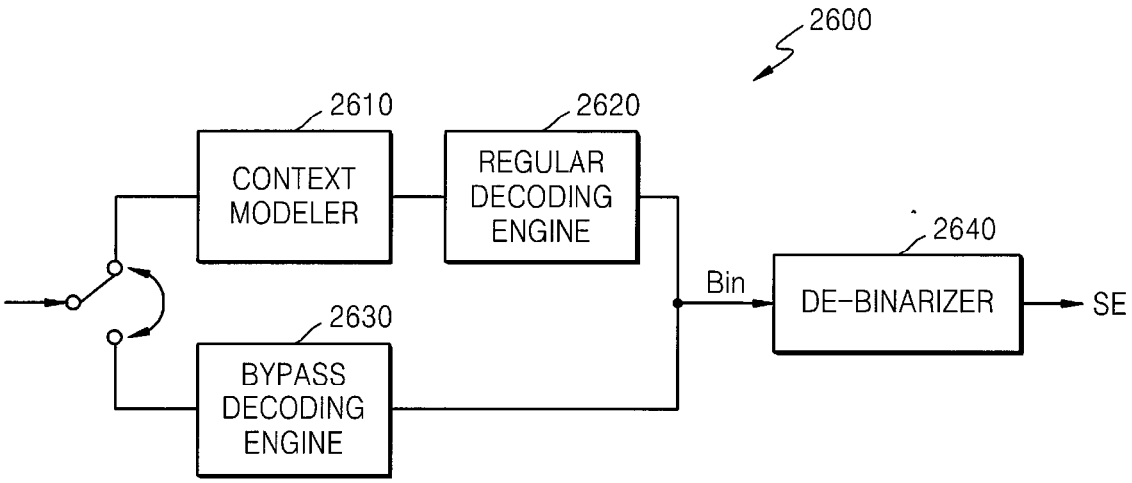
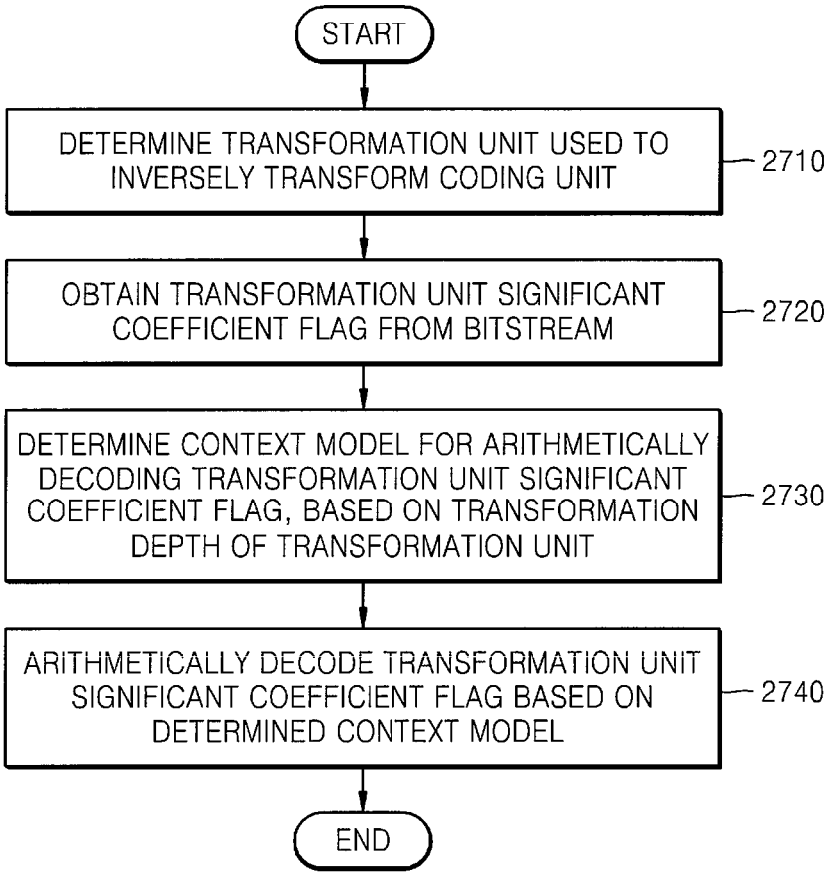

2600
2610
CONTEXT MODELER
2620
REGULAR DECODING ENGINE
2630
BYPASS DECODING ENGINE
Bin
2640
DE-BINARIZER
SE

FIG. 27


START
DETERMINE TRANSFORMATION UNIT USED TO INVERSELY TRANSFORM CODING UNIT
2710
OBTAIN TRANSFORMATION UNIT SIGNIFICANT COEFFICIENT FLAG FROM BITSTREAM
2720
DETERMINE CONTEXT MODEL FOR ARITHMETICALLY DECODING TRANSFORMATION UNIT SIGNIFICANT COEFFICIENT FLAG, BASED ON TRANSFORMATION DEPTH OF TRANSFORMATION UNIT
2730
ARITHMETICALLY DECODE TRANSFORMATION UNIT SIGNIFICANT COEFFICIENT FLAG BASED ON DETERMINED CONTEXT MODEL
2740
END