FIG. 1

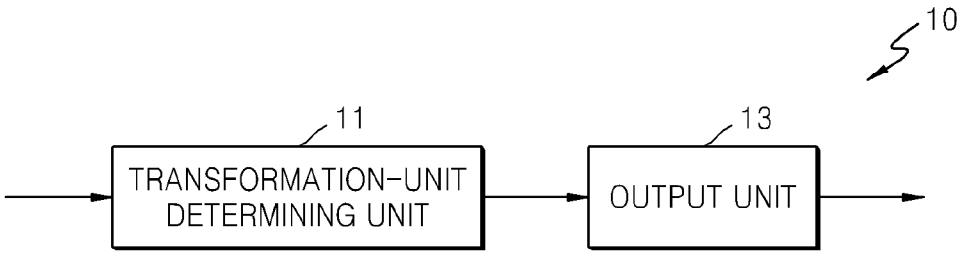

10
11
TRANSFORMATION-UNIT DETERMINING UNIT
13
OUTPUT UNIT

FIG. 2

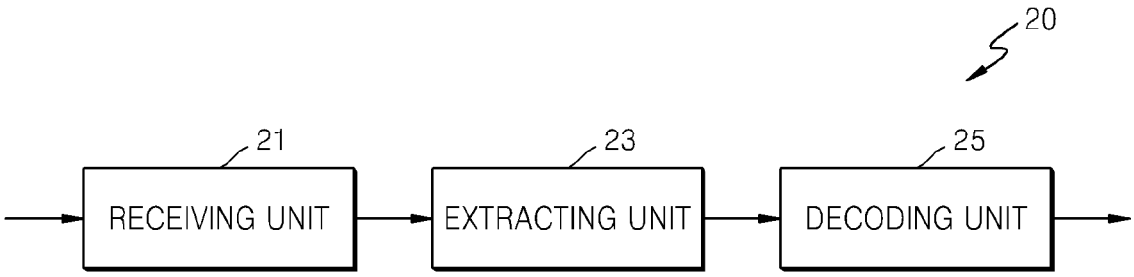

20
21
RECEIVING UNIT
23
EXTRACTING UNIT
25
DECODING UNIT

FIG. 3

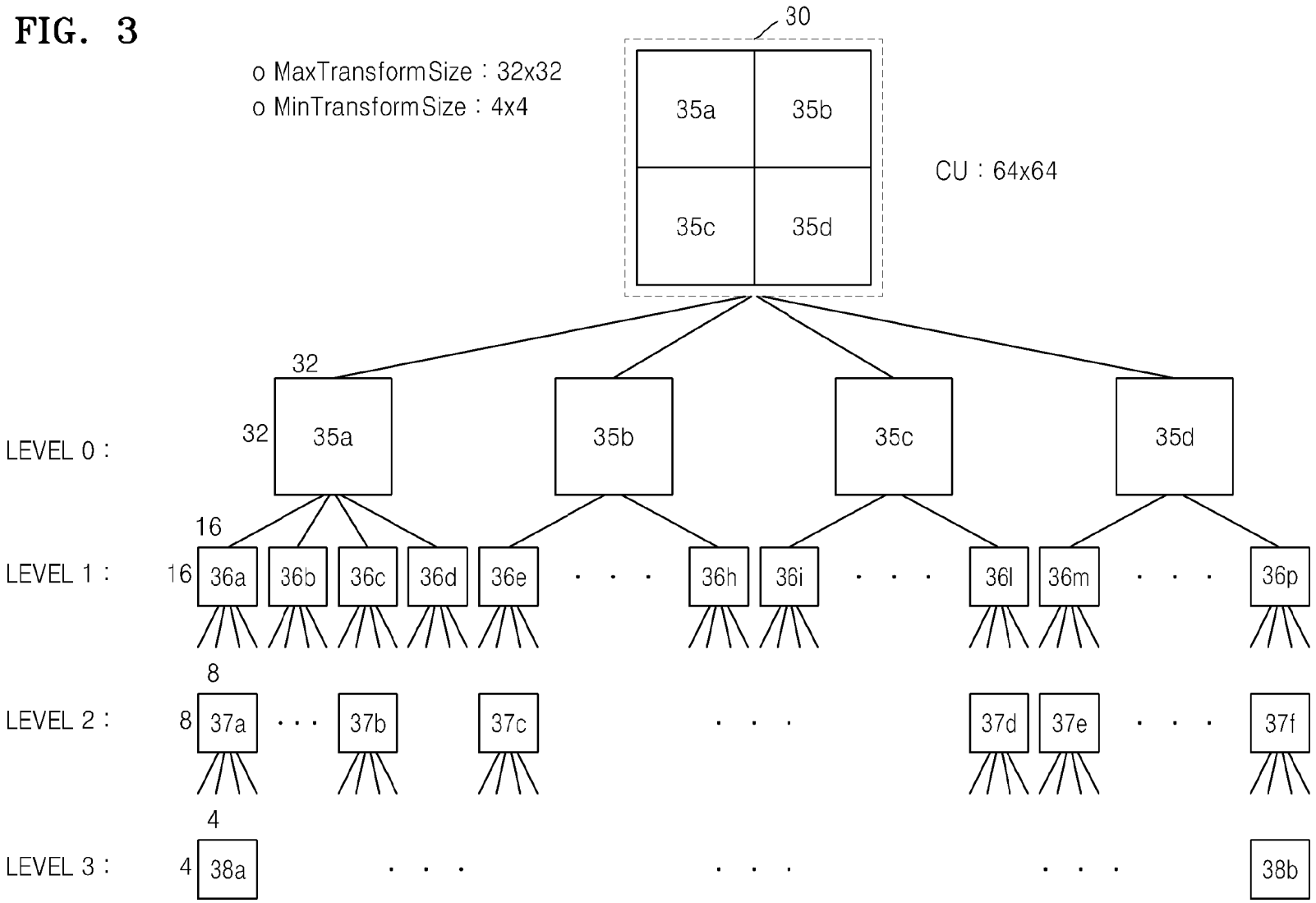

o MaxTransformSize : 32x32
o MinTransformSize : 4x4
30
35a
35b
35c
35d
CU : 64x64
LEVEL 0 :
32
32
35a
35b
35c
35d
LEVEL 1 :
16
16
36a
36b
36c
36d
36e
36h
36i
36l
36m
36p
LEVEL 2 :
8
8
37a
37b
37c
37d
37e
37f
LEVEL 3 :
4
4
38a
38b

FIG. 4

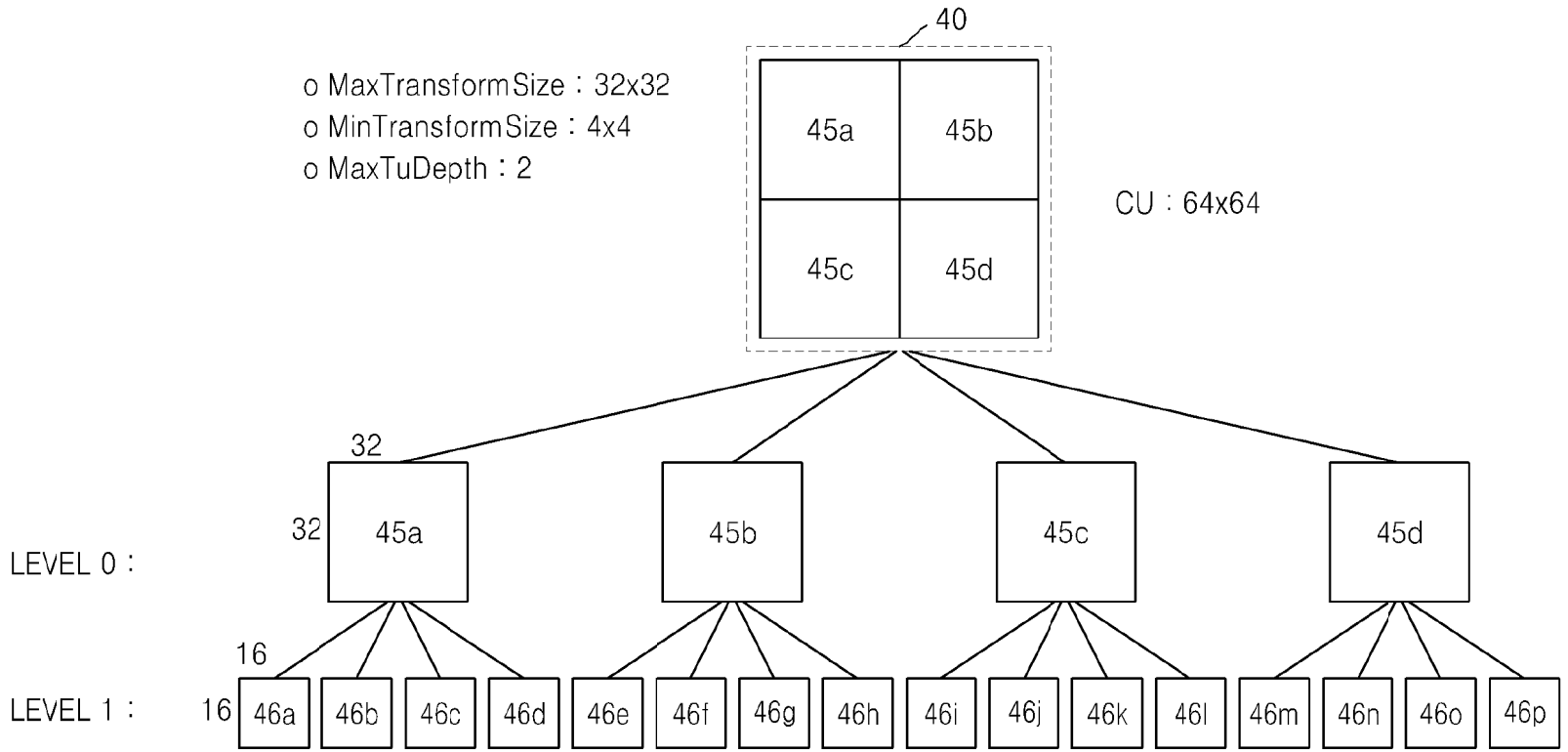

40
o MaxTransformSize : 32x32
o MinTransformSize : 4x4
o MaxTuDepth : 2
45a
45b
45c
45d
CU : 64x64
32
32
LEVEL 0 :
45a
45b
45c
45d
16
LEVEL 1 :
16
46a
46b
46c
46d
46e
46f
46g
46h
46i
46j
46k
46l
46m
46n
46o
46p

FIG. 5

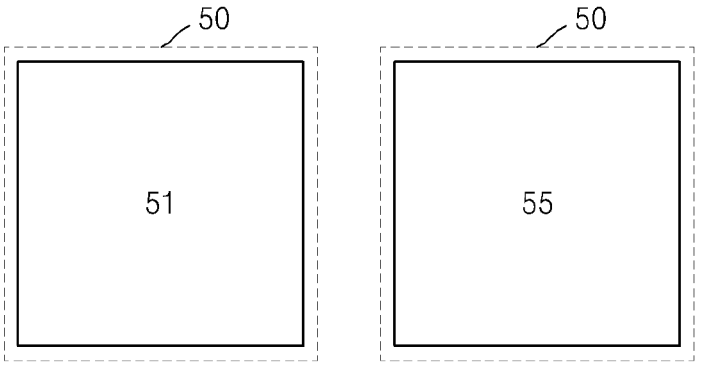


FIG. 6

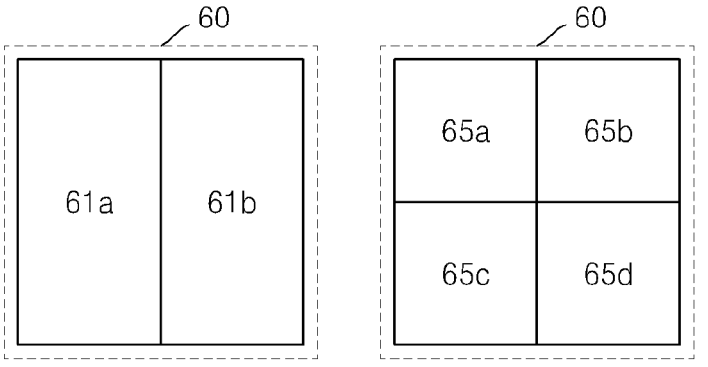


FIG. 7

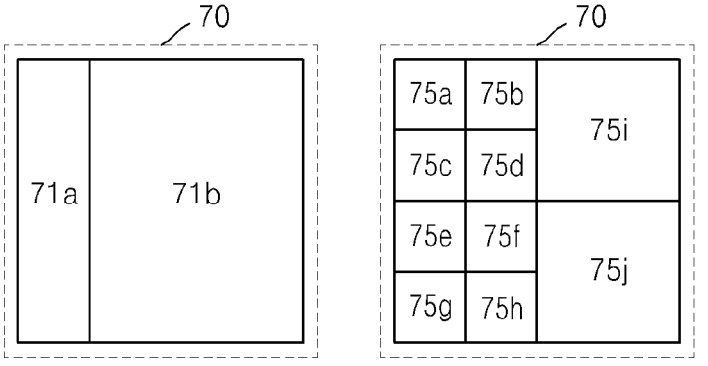


FIG. 8

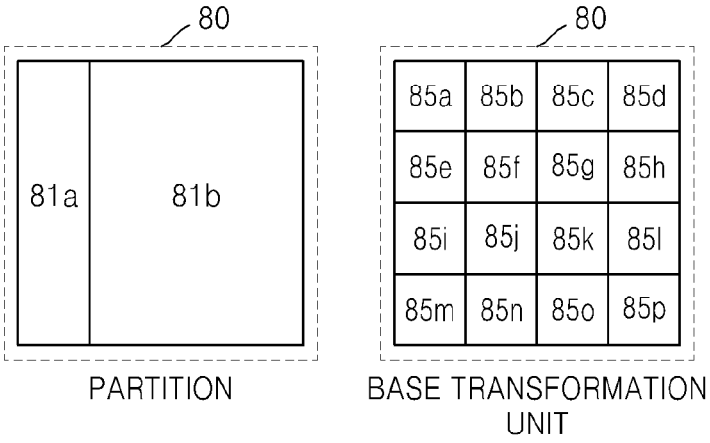

80
81a
81b
PARTITION
80
85a
85b
85c
85d
85e
85f
85g
85h
85i
85j
85k
85l
85m
85n
85o
85p
BASE TRANSFORMATION UNIT

FIG. 9

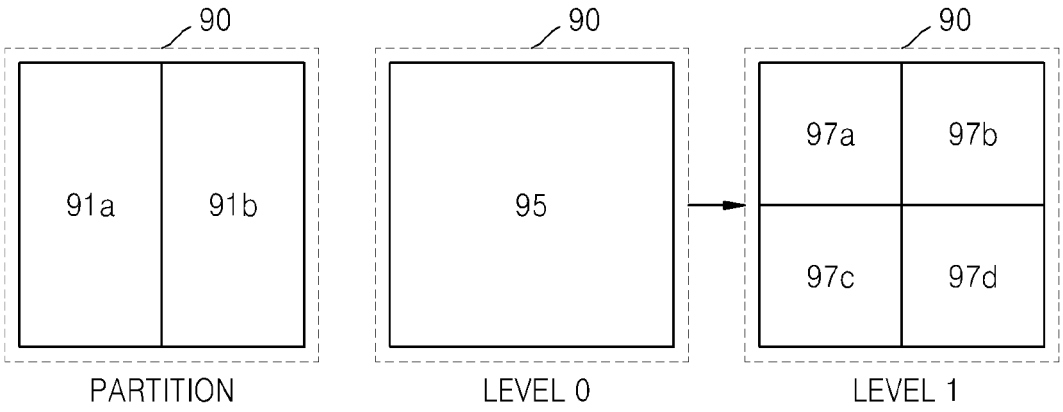

90
91a
91b
PARTITION
90
95
LEVEL 0
90
97a
97b
97c
97d
LEVEL 1

FIG. 10

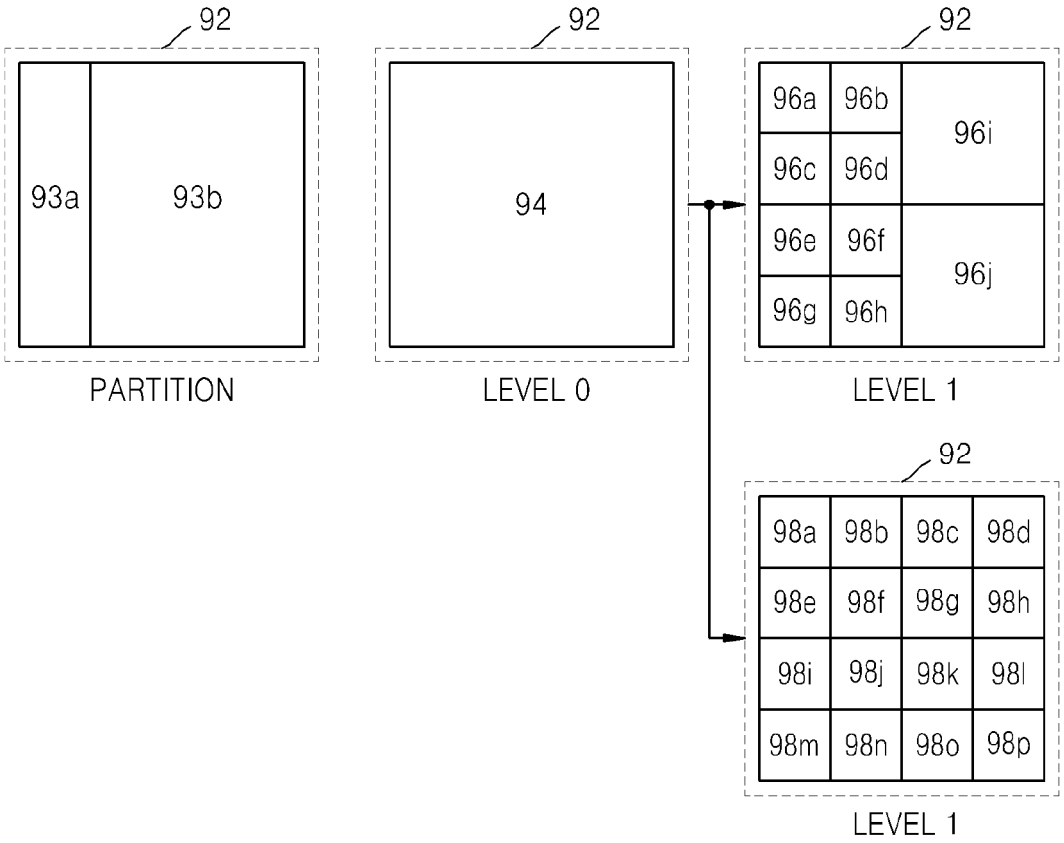

92
93a
93b
PARTITION
92
94
LEVEL 0
92
96a
96b
96i
96c
96d
96e
96f
96j
96g
96h
LEVEL 1
92
98a
98b
98c
98d
98e
98f
98g
98h
98i
98j
98k
98l
98m
98n
98o
98p
LEVEL 1

FIG. 11

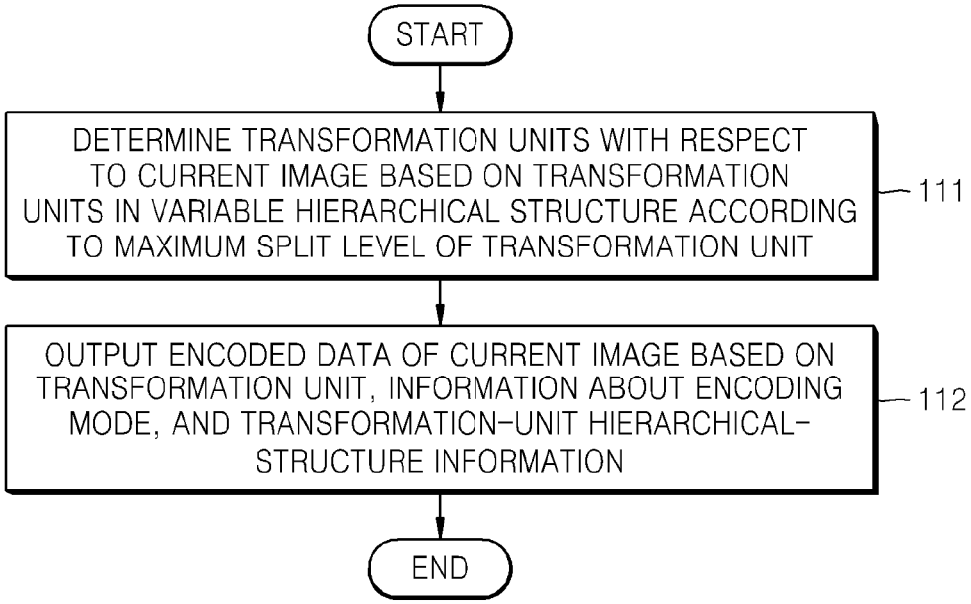

START
DETERMINE TRANSFORMATION UNITS WITH RESPECT TO CURRENT IMAGE BASED ON TRANSFORMATION UNITS IN VARIABLE HIERARCHICAL STRUCTURE ACCORDING TO MAXIMUM SPLIT LEVEL OF TRANSFORMATION UNIT
111
OUTPUT ENCODED DATA OF CURRENT IMAGE BASED ON TRANSFORMATION UNIT, INFORMATION ABOUT ENCODING MODE, AND TRANSFORMATION-UNIT HIERARCHICAL-STRUCTURE INFORMATION
112
END

FIG. 12

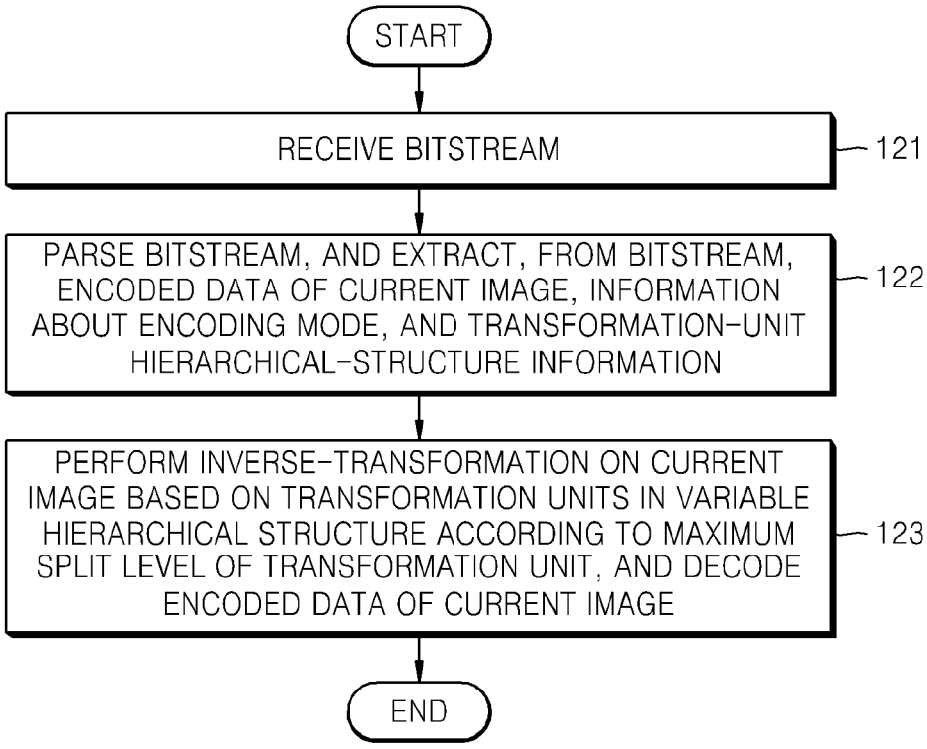

START
RECEIVE BITSTREAM
121
PARSE BITSTREAM, AND EXTRACT, FROM BITSTREAM, ENCODED DATA OF CURRENT IMAGE, INFORMATION ABOUT ENCODING MODE, AND TRANSFORMATION-UNIT HIERARCHICAL-STRUCTURE INFORMATION
122
PERFORM INVERSE-TRANSFORMATION ON CURRENT IMAGE BASED ON TRANSFORMATION UNITS IN VARIABLE HIERARCHICAL STRUCTURE ACCORDING TO MAXIMUM SPLIT LEVEL OF TRANSFORMATION UNIT, AND DECODE ENCODED DATA OF CURRENT IMAGE
123
END

FIG. 13

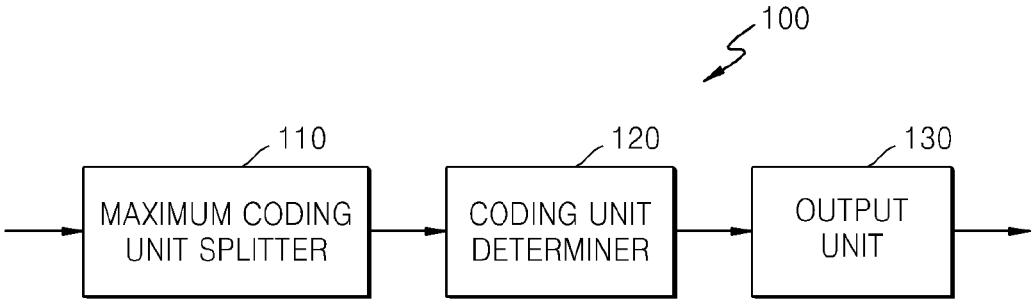

100
110
MAXIMUM CODING UNIT SPLITTER
120
CODING UNIT DETERMINER
130
OUTPUT UNIT

FIG. 14

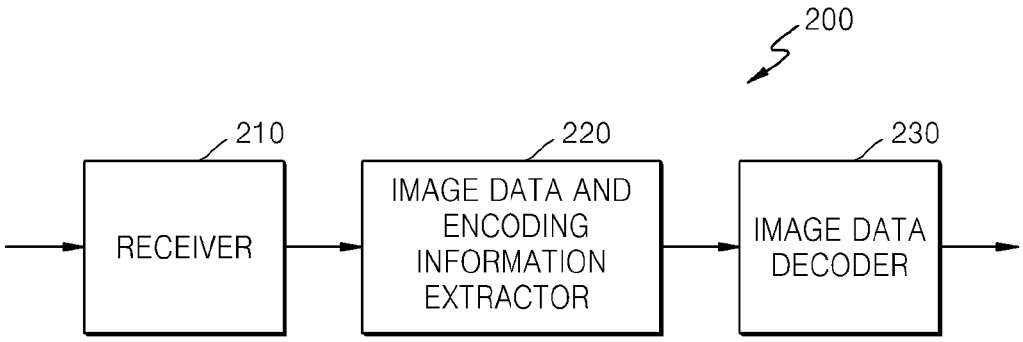

200
210
RECEIVER
220
IMAGE DATA AND ENCODING INFORMATION EXTRACTOR
230
IMAGE DATA DECODER

FIG. 15

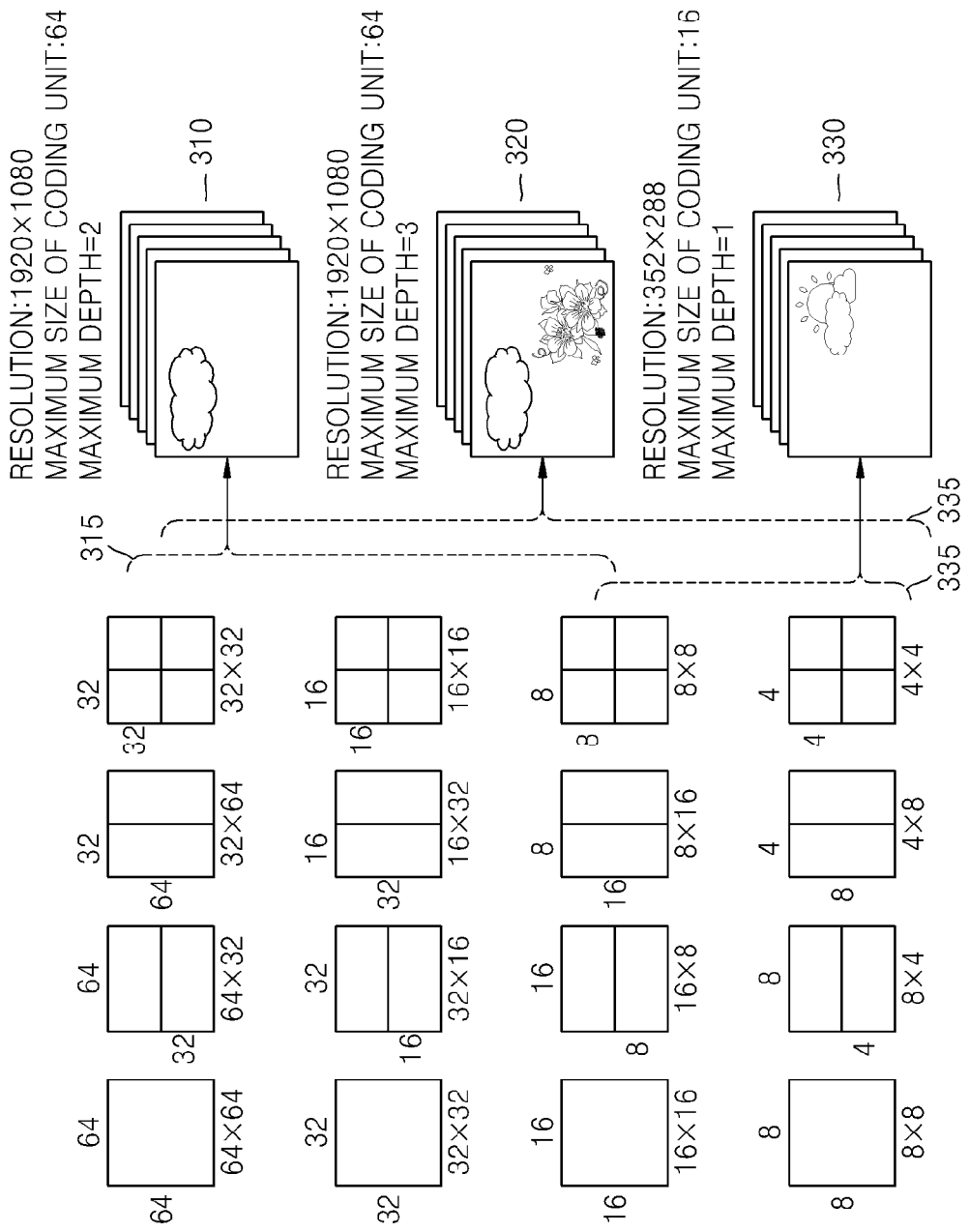

RESOLUTION:1920×1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=2
310
RESOLUTION:1920×1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=3
320
RESOLUTION:352×288
MAXIMUM SIZE OF CODING UNIT:16
MAXIMUM DEPTH=1
330
315
335
64×64
64×32
32×64
32×32
32×16
16×32
16×16
16×8
8×16
8×8
8×4
4×8
4×4

FIG. 16

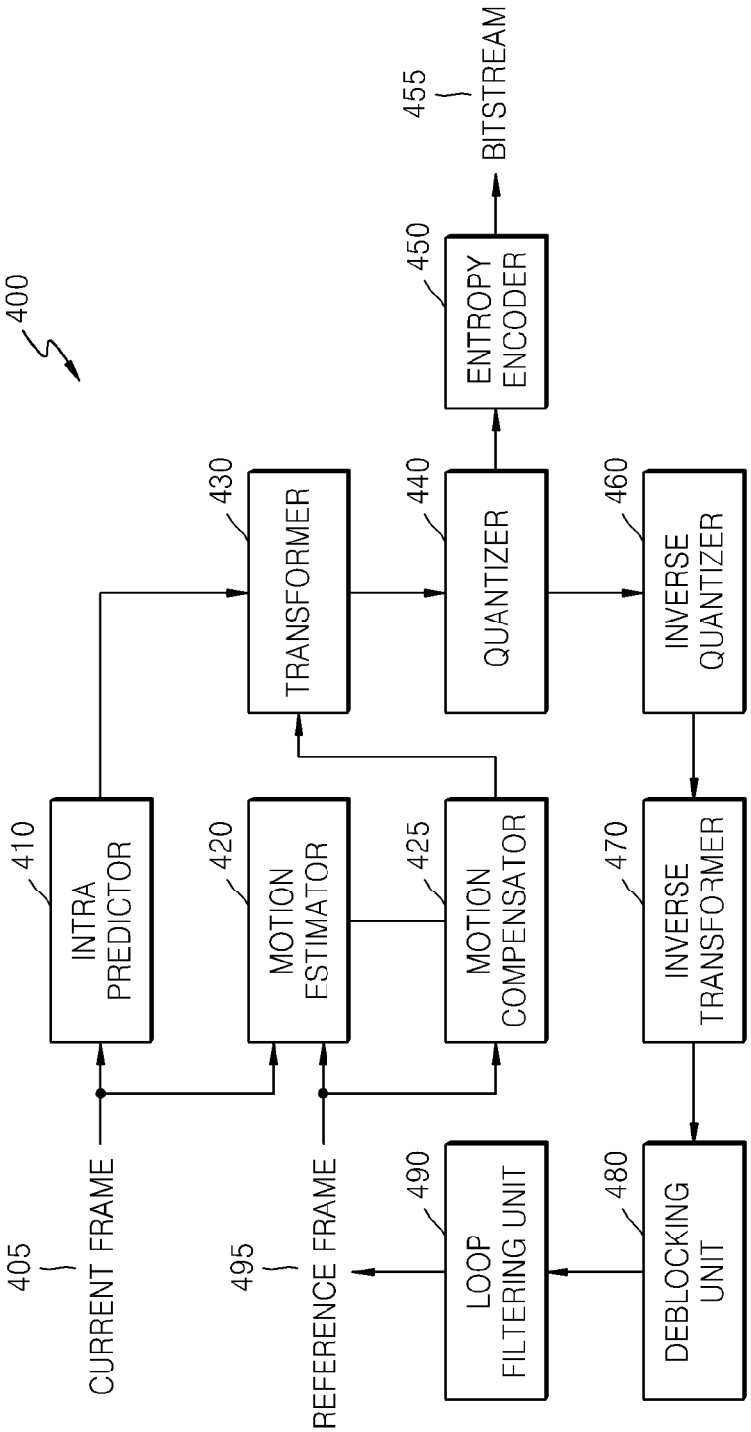

400
405
CURRENT FRAME
410
INTRA PREDICTOR
420
MOTION ESTIMATOR
425
MOTION COMPENSATOR
430
TRANSFORMER
440
QUANTIZER
450
ENTROPY ENCODER
455
BITSTREAM
460
INVERSE QUANTIZER
470
INVERSE TRANSFORMER
480
DEBLOCKING UNIT
490
LOOP FILTERING UNIT
495
REFERENCE FRAME

FIG. 17

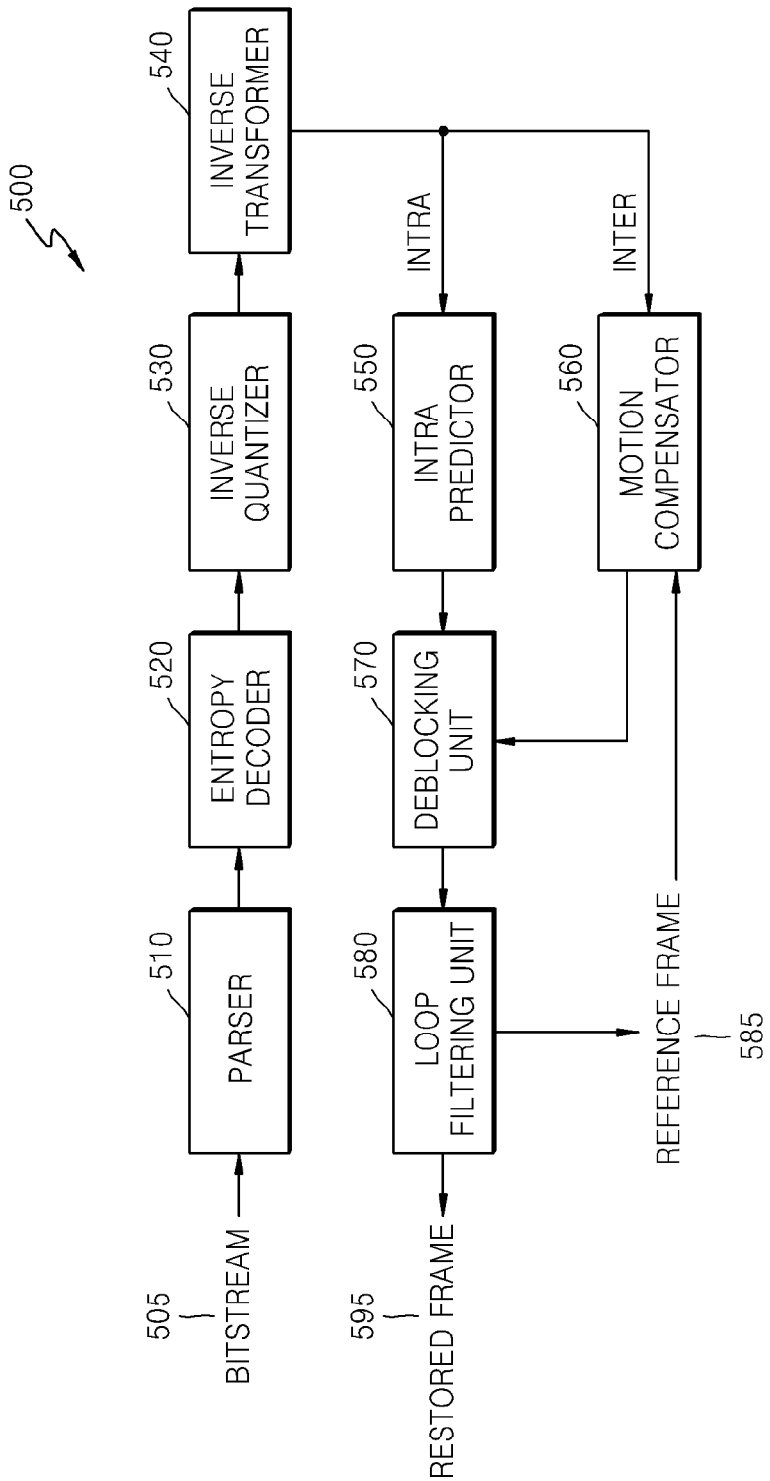

500
505
BITSTREAM
510
PARSER
520
ENTROPY DECODER
530
INVERSE QUANTIZER
540
INVERSE TRANSFORMER
550
INTRA PREDICTOR
560
MOTION COMPENSATOR
570
DEBLOCKING UNIT
580
LOOP FILTERING UNIT
595
RESTORED FRAME
585
REFERENCE FRAME
INTRA
INTER

FIG. 18

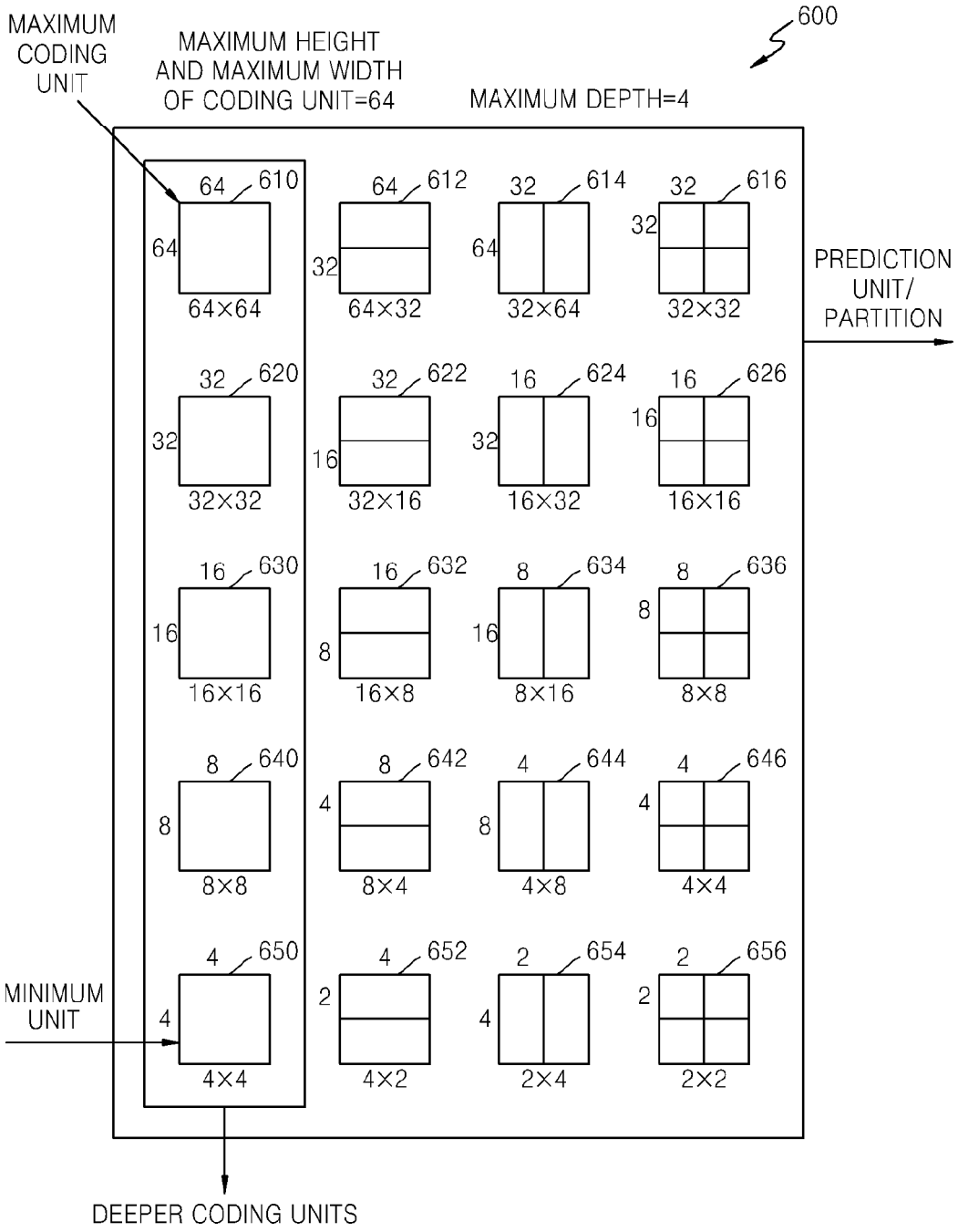

600
MAXIMUM CODING UNIT
MAXIMUM HEIGHT AND MAXIMUM WIDTH OF CODING UNIT=64
MAXIMUM DEPTH=4
PREDICTION UNIT/ PARTITION
MINIMUM UNIT
DEEPER CODING UNITS
64 610 64 64×64
64 612 32 64×32
32 614 64 32×64
32 616 32 32×32
32 620 32 32×32
32 622 16 32×16
16 624 32 16×32
16 626 16 16×16
16 630 16 16×16
16 632 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

FIG. 19

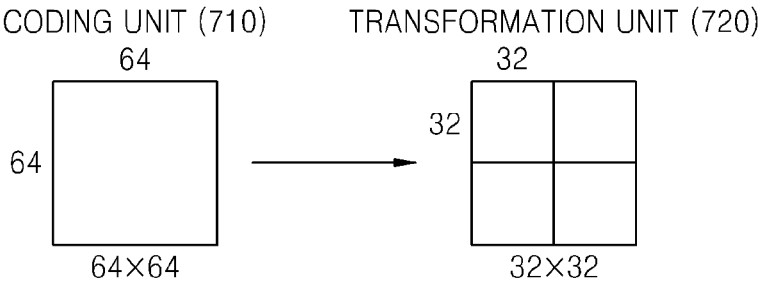

CODING UNIT (710)
TRANSFORMATION UNIT (720)
64
64
64×64
32
32
32×32

FIG. 20

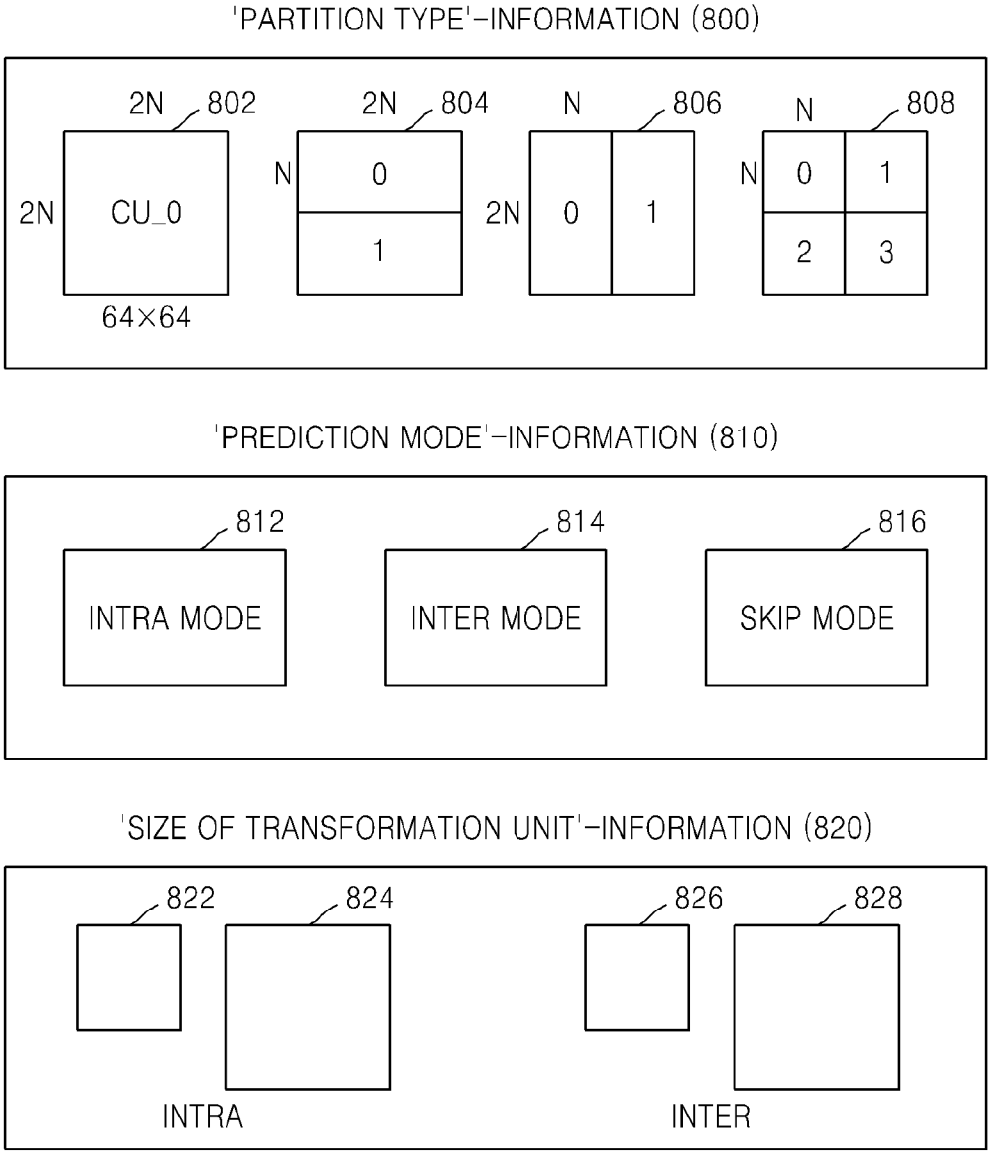

'PARTITION TYPE'-INFORMATION (800)
2N
802
2N
CU_0
64×64
2N
804
N
0
1
N
806
2N
0
1
N
808
N
0
1
2
3
'PREDICTION MODE'-INFORMATION (810)
812
INTRA MODE
814
INTER MODE
816
SKIP MODE
'SIZE OF TRANSFORMATION UNIT'-INFORMATION (820)
822
824
INTRA
826
828
INTER

FIG. 21

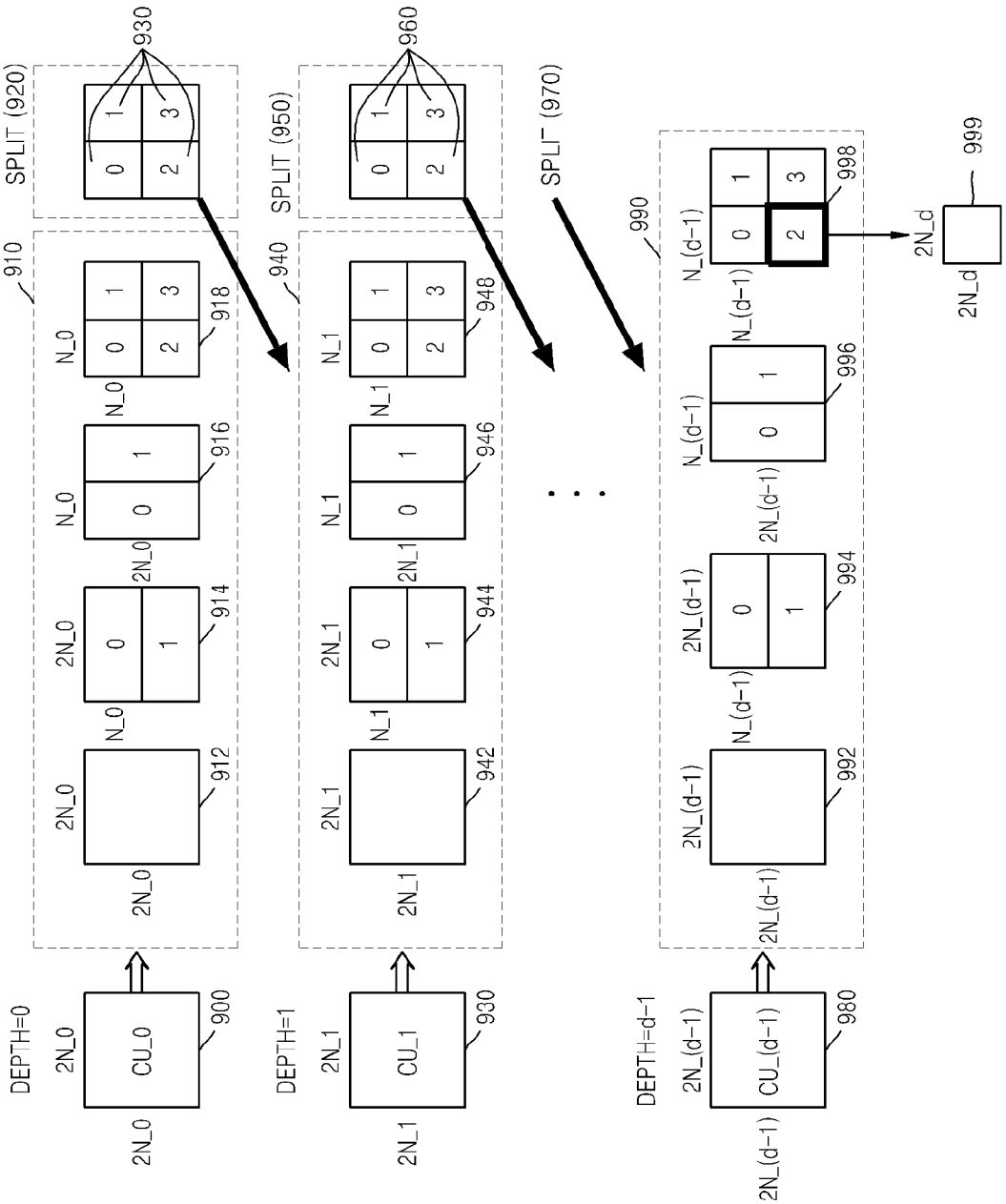
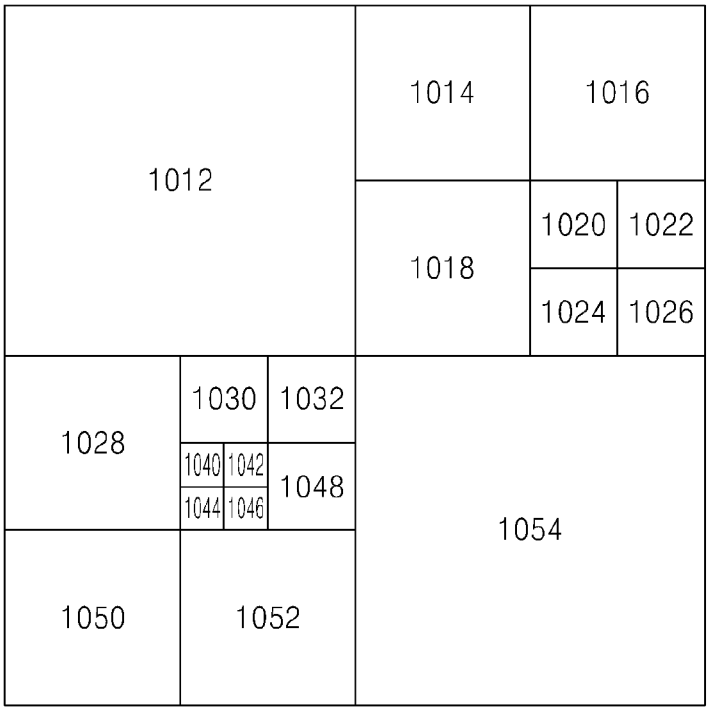

DEPTH=0
DEPTH=1
DEPTH=d-1
CU_0
CU_1
CU_(d-1)
SPLIT (920)
SPLIT (950)
SPLIT (970)
910
940
990
900
912
914
916
918
930
942
944
946
948
960
980
992
994
996
998
999
2N_0
N_0
2N_1
N_1
2N_(d-1)
N_(d-1)
2N_d
0
1
2
3

FIG. 22



CODING UNITS (1010)

FIG. 23

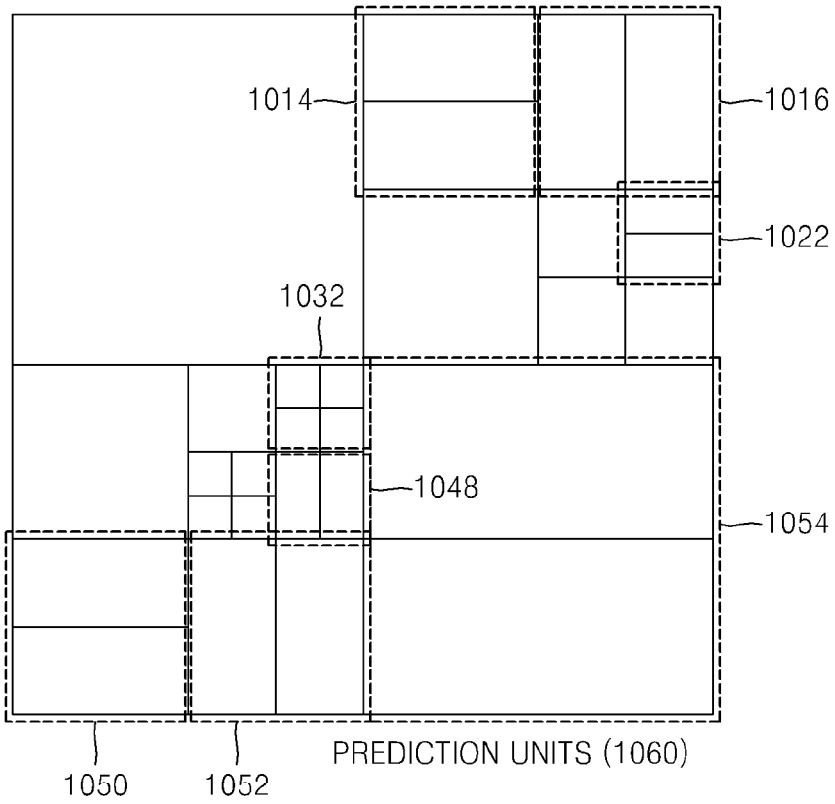

1014
1016
1022
1032
1048
1054
1050
1052
PREDICTION UNITS (1060)

FIG. 24

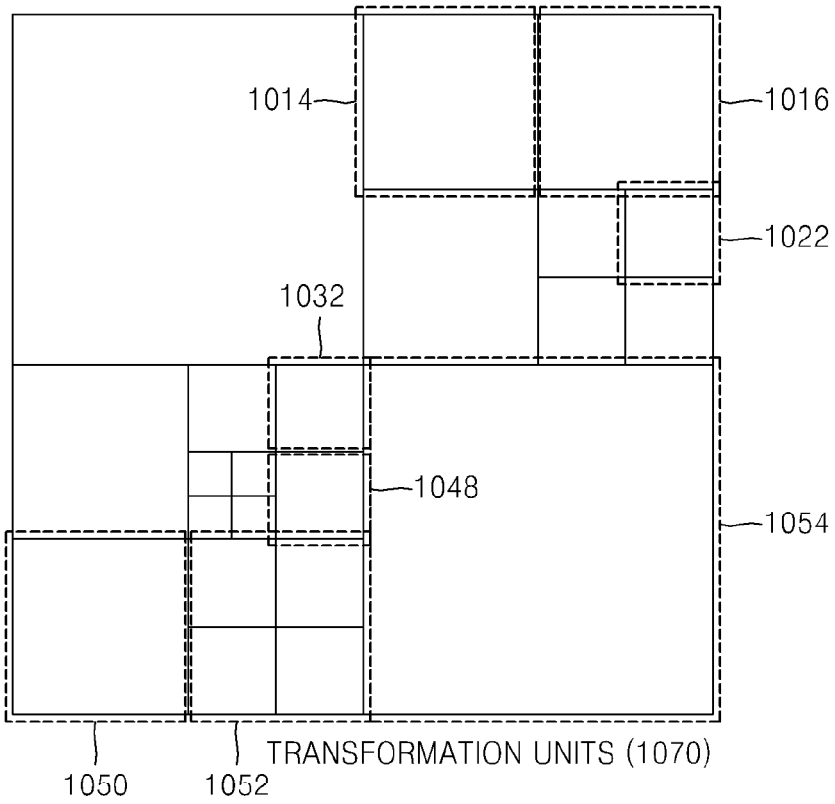

1014
1016
1022
1032
1048
1054
1050
1052
TRANSFORMATION UNITS (1070)

FIG. 25

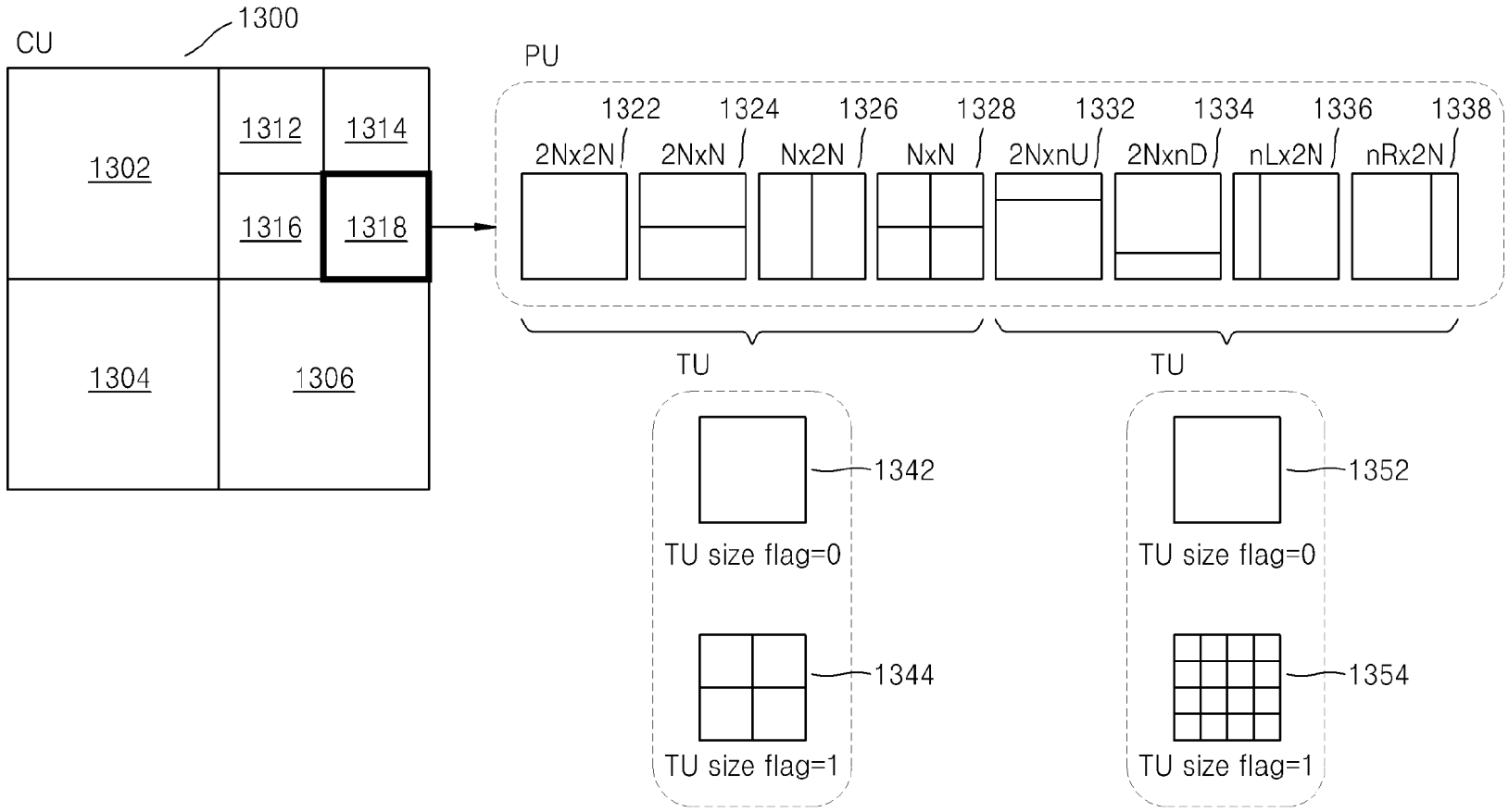

CU
1300
1302
1312
1314
1316
1318
1304
1306
PU
1322
1324
1326
1328
1332
1334
1336
1338
2Nx2N
2NxN
Nx2N
NxN
2NxnU
2NxnD
nLx2N
nRx2N
TU
TU
1342
TU size flag=0
1344
TU size flag=1
1352
TU size flag=0
1354
TU size flag=1

FIG. 26

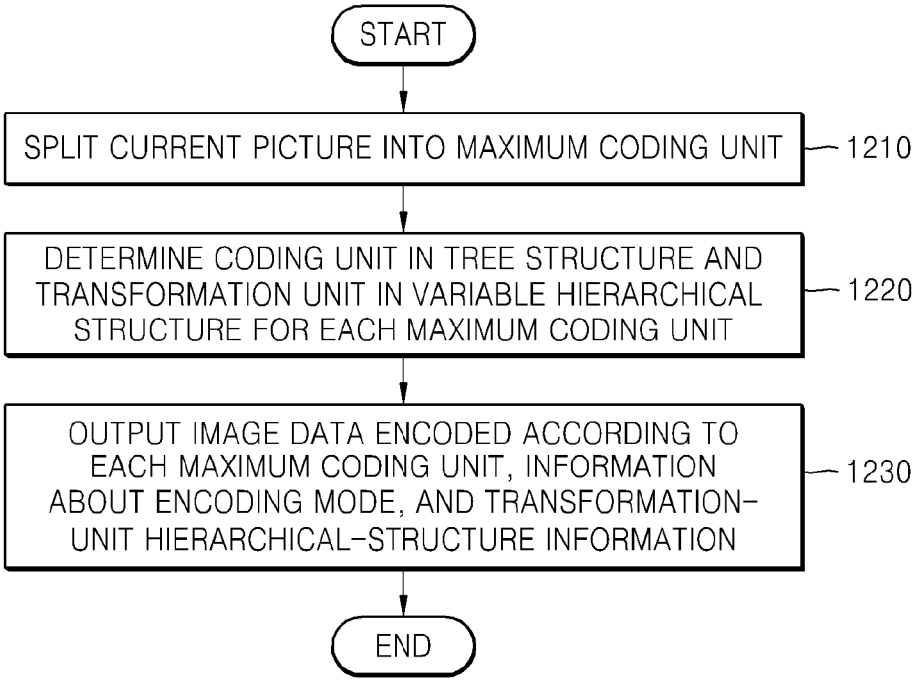
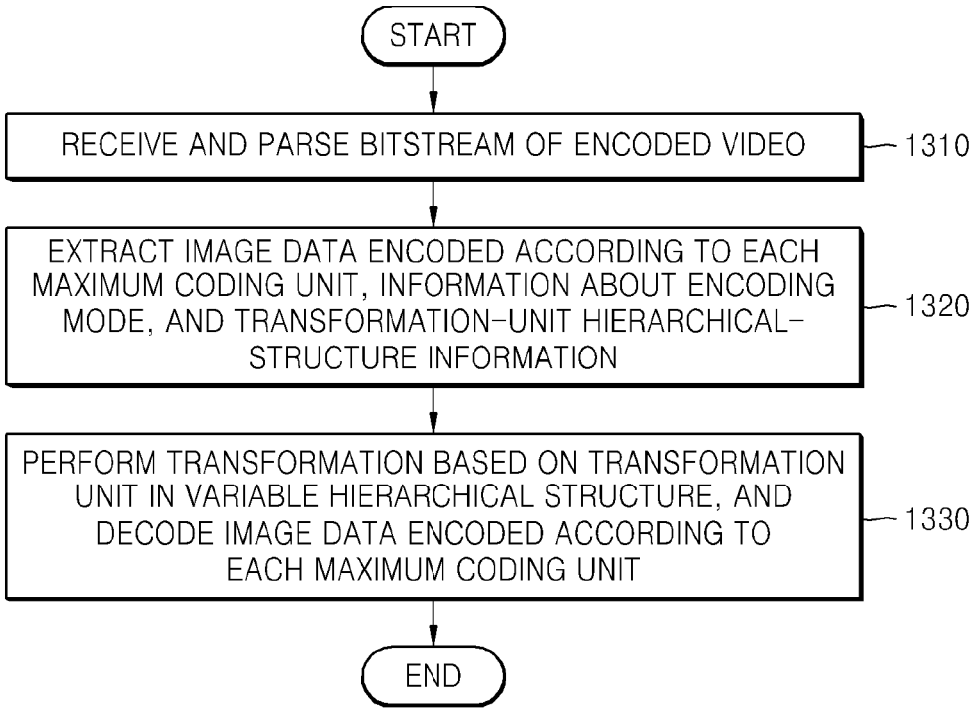

START
SPLIT CURRENT PICTURE INTO MAXIMUM CODING UNIT
1210
DETERMINE CODING UNIT IN TREE STRUCTURE AND TRANSFORMATION UNIT IN VARIABLE HIERARCHICAL STRUCTURE FOR EACH MAXIMUM CODING UNIT
1220
OUTPUT IMAGE DATA ENCODED ACCORDING TO EACH MAXIMUM CODING UNIT, INFORMATION ABOUT ENCODING MODE, AND TRANSFORMATION-UNIT HIERARCHICAL-STRUCTURE INFORMATION
1230
END

FIG. 27


START
RECEIVE AND PARSE BITSTREAM OF ENCODED VIDEO
1310
EXTRACT IMAGE DATA ENCODED ACCORDING TO EACH MAXIMUM CODING UNIT, INFORMATION ABOUT ENCODING MODE, AND TRANSFORMATION-UNIT HIERARCHICAL-STRUCTURE INFORMATION
1320
PERFORM TRANSFORMATION BASED ON TRANSFORMATION UNIT IN VARIABLE HIERARCHICAL STRUCTURE, AND DECODE IMAGE DATA ENCODED ACCORDING TO EACH MAXIMUM CODING UNIT
1330
END