FIG. 1A

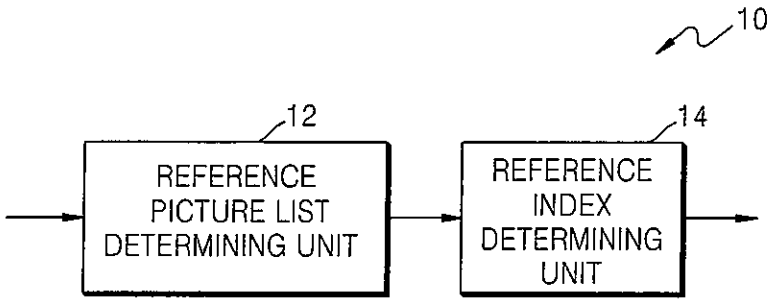

10
12
REFERENCE PICTURE LIST DETERMINING UNIT
14
REFERENCE INDEX DETERMINING UNIT

FIG. 1B

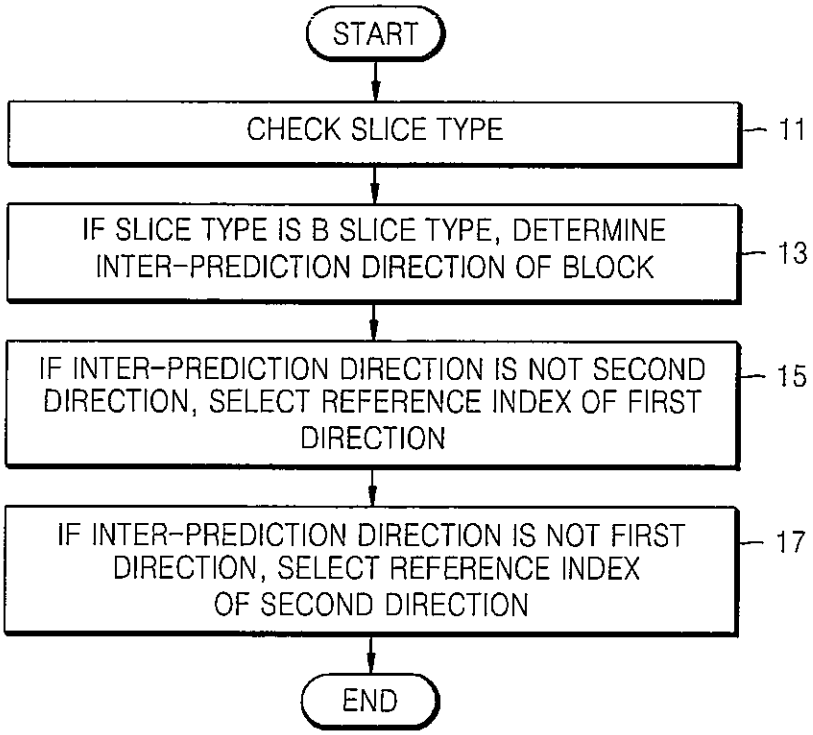

START
CHECK SLICE TYPE
11
IF SLICE TYPE IS B SLICE TYPE, DETERMINE INTER-PREDICTION DIRECTION OF BLOCK
13
IF INTER-PREDICTION DIRECTION IS NOT SECOND DIRECTION, SELECT REFERENCE INDEX OF FIRST DIRECTION
15
IF INTER-PREDICTION DIRECTION IS NOT FIRST DIRECTION, SELECT REFERENCE INDEX OF SECOND DIRECTION
17
END

FIG. 2A

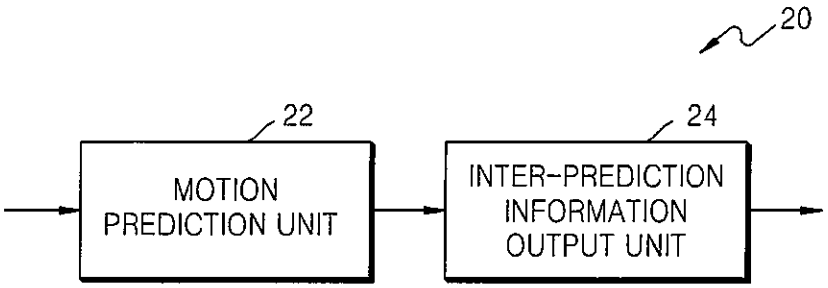

20
22
MOTION PREDICTION UNIT
24
INTER-PREDICTION INFORMATION OUTPUT UNIT

FIG. 2B

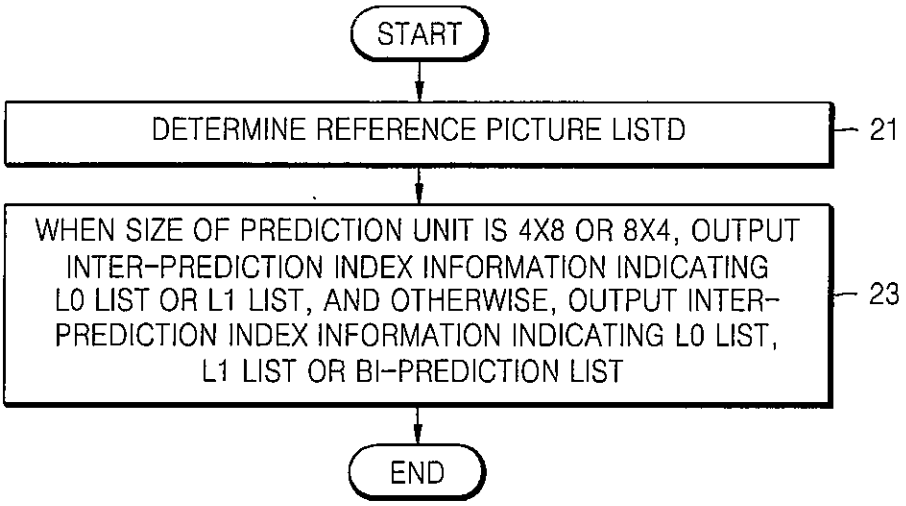

START
DETERMINE REFERENCE PICTURE LISTD
21
WHEN SIZE OF PREDICTION UNIT IS 4X8 OR 8X4, OUTPUT INTER-PREDICTION INDEX INFORMATION INDICATING L0 LIST OR L1 LIST, AND OTHERWISE, OUTPUT INTER-PREDICTION INDEX INFORMATION INDICATING L0 LIST, L1 LIST OR BI-PREDICTION LIST
23
END

FIG. 3A

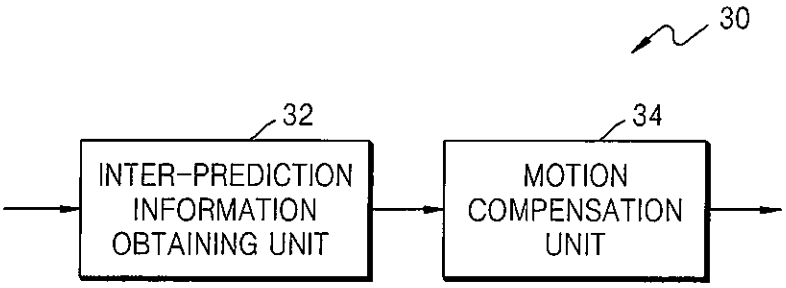

30
32
INTER-PREDICTION INFORMATION OBTAINING UNIT
34
MOTION COMPENSATION UNIT

FIG. 3B

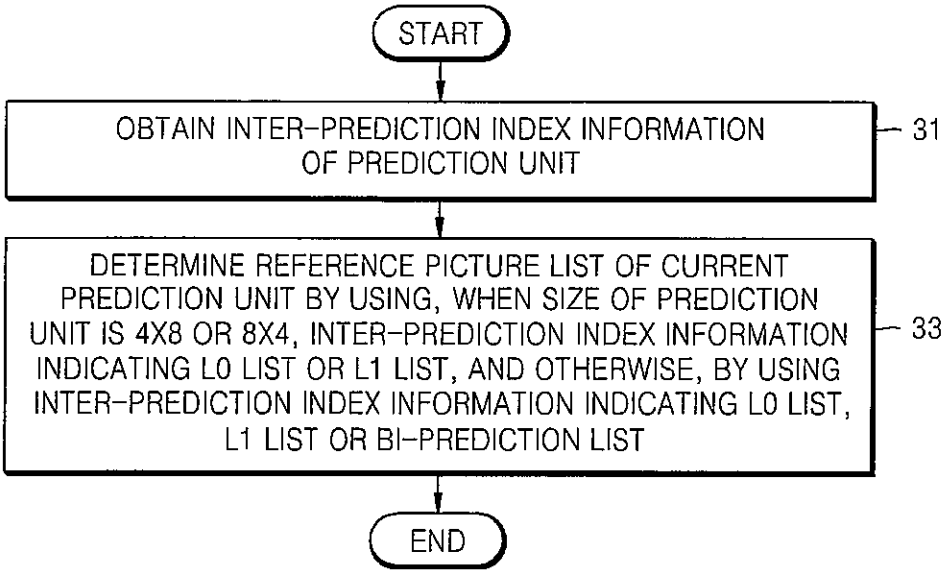

START
OBTAIN INTER-PREDICTION INDEX INFORMATION OF PREDICTION UNIT
31
DETERMINE REFERENCE PICTURE LIST OF CURRENT PREDICTION UNIT BY USING, WHEN SIZE OF PREDICTION UNIT IS 4X8 OR 8X4, INTER-PREDICTION INDEX INFORMATION INDICATING L0 LIST OR L1 LIST, AND OTHERWISE, BY USING INTER-PREDICTION INDEX INFORMATION INDICATING L0 LIST, L1 LIST OR BI-PREDICTION LIST
33
END

FIG. 4

45

inter_pred_idc	name of inter_pred_idc	
	(nPbW + nPbH) != 12	(nPbW + nPbH) == 12
0	PRED_L0	PRED_L0
1	PRED_L1	PRED_L1
2	PRED_B1	na

FIG. 5

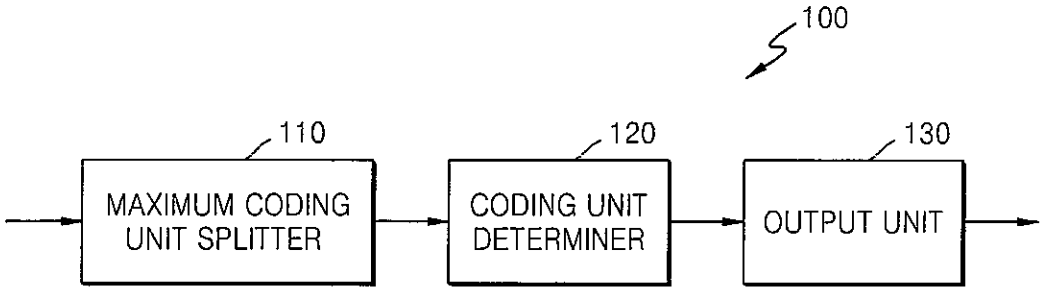


FIG. 6

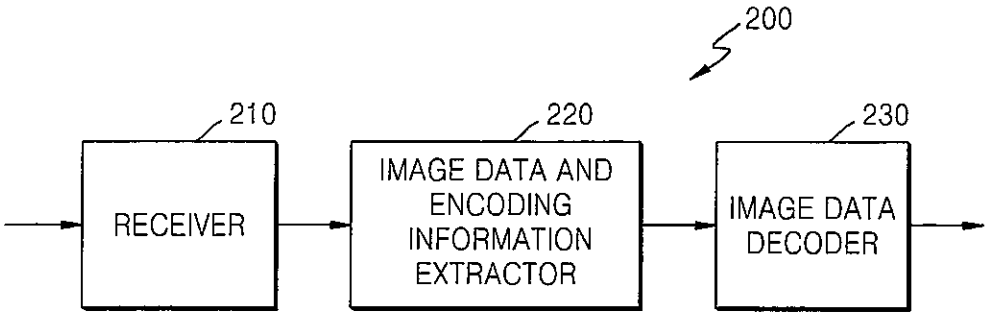


FIG. 7

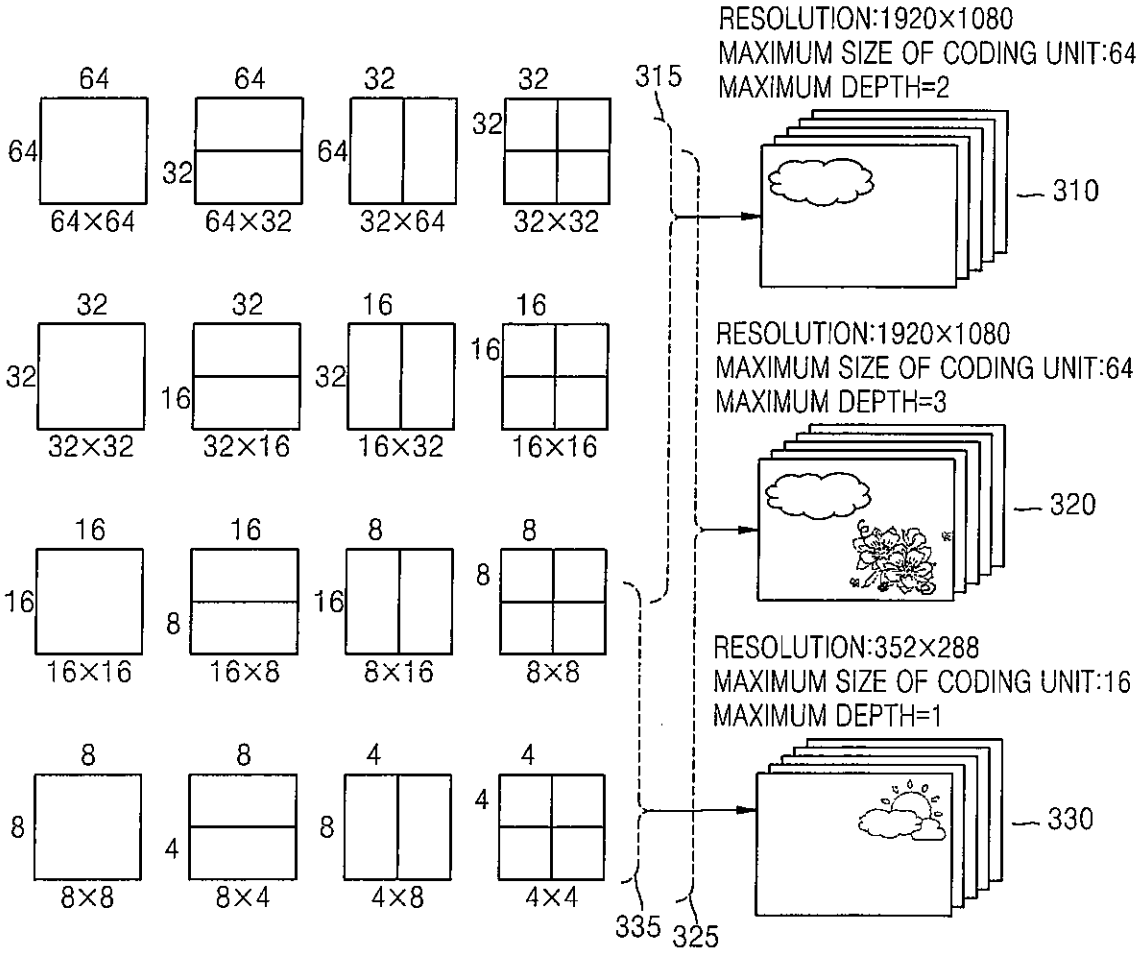

RESOLUTION:1920×1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=2
310
RESOLUTION:1920×1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=3
320
RESOLUTION:352×288
MAXIMUM SIZE OF CODING UNIT:16
MAXIMUM DEPTH=1
330
315
335
325
64×64
64×32
32×64
32×32
32×16
16×32
16×16
16×8
8×16
8×8
8×4
4×8
4×4

FIG. 8

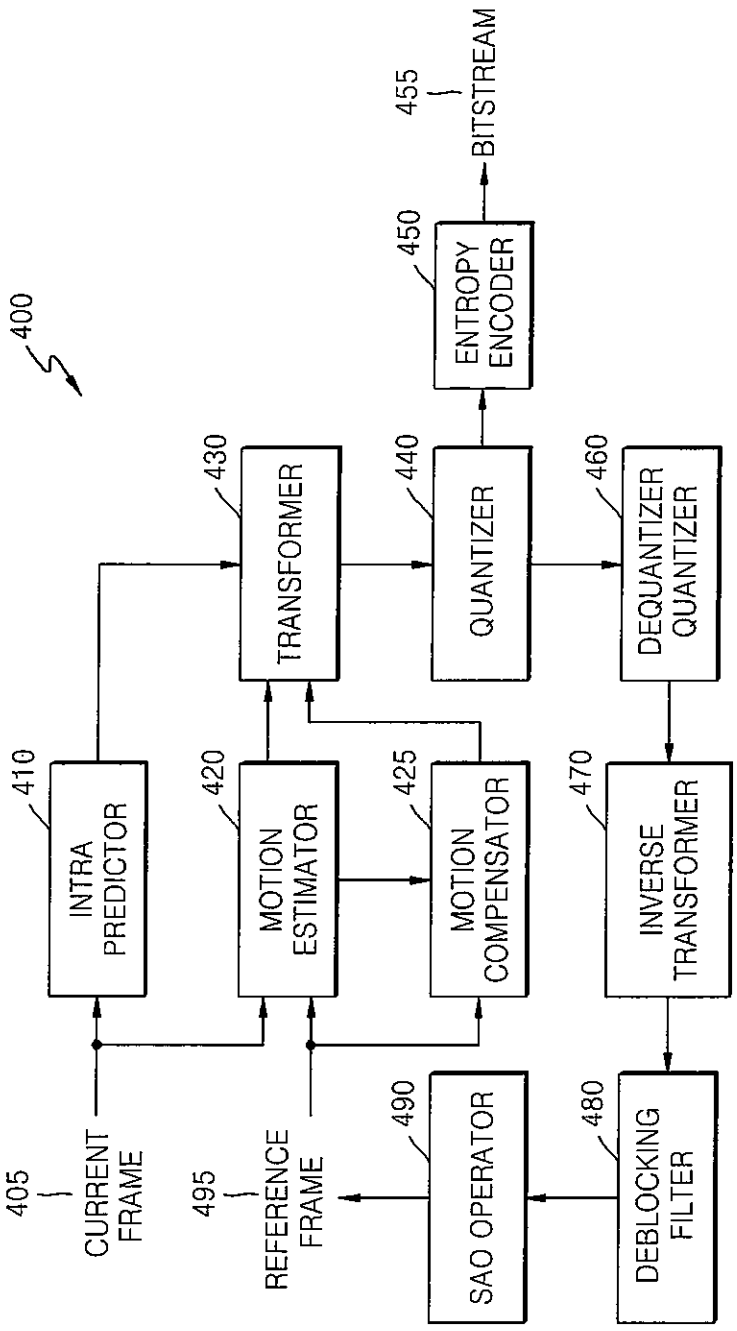

400
405
CURRENT FRAME
410
INTRA PREDICTOR
420
MOTION ESTIMATOR
425
MOTION COMPENSATOR
430
TRANSFORMER
440
QUANTIZER
450
ENTROPY ENCODER
455
BITSTREAM
460
DEQUANTIZER QUANTIZER
470
INVERSE TRANSFORMER
480
DEBLOCKING FILTER
490
SAO OPERATOR
495
REFERENCE FRAME

FIG. 9

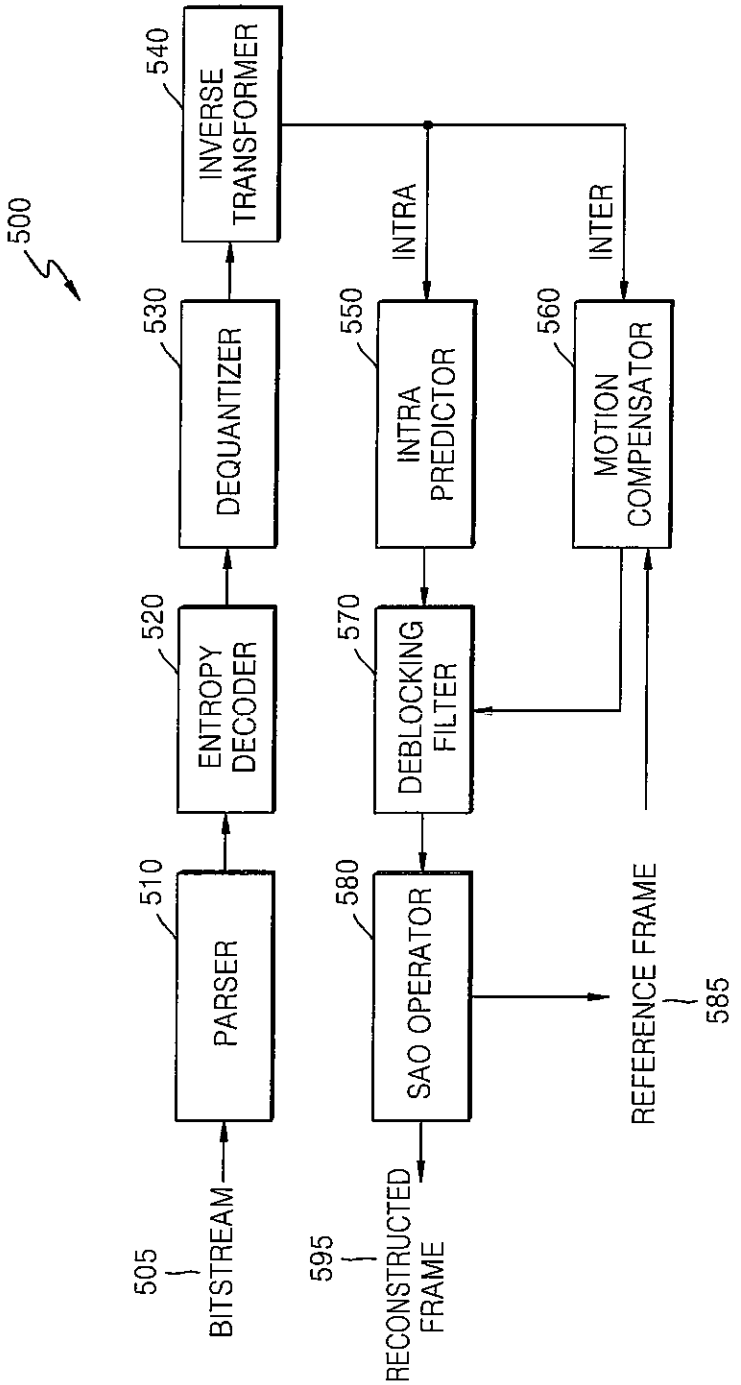

500
505
BITSTREAM
510
PARSER
520
ENTROPY DECODER
530
DEQUANTIZER
540
INVERSE TRANSFORMER
550
INTRA PREDICTOR
560
MOTION COMPENSATOR
570
DEBLOCKING FILTER
580
SAO OPERATOR
585
REFERENCE FRAME
595
RECONSTRUCTED FRAME
INTRA
INTER

FIG. 10

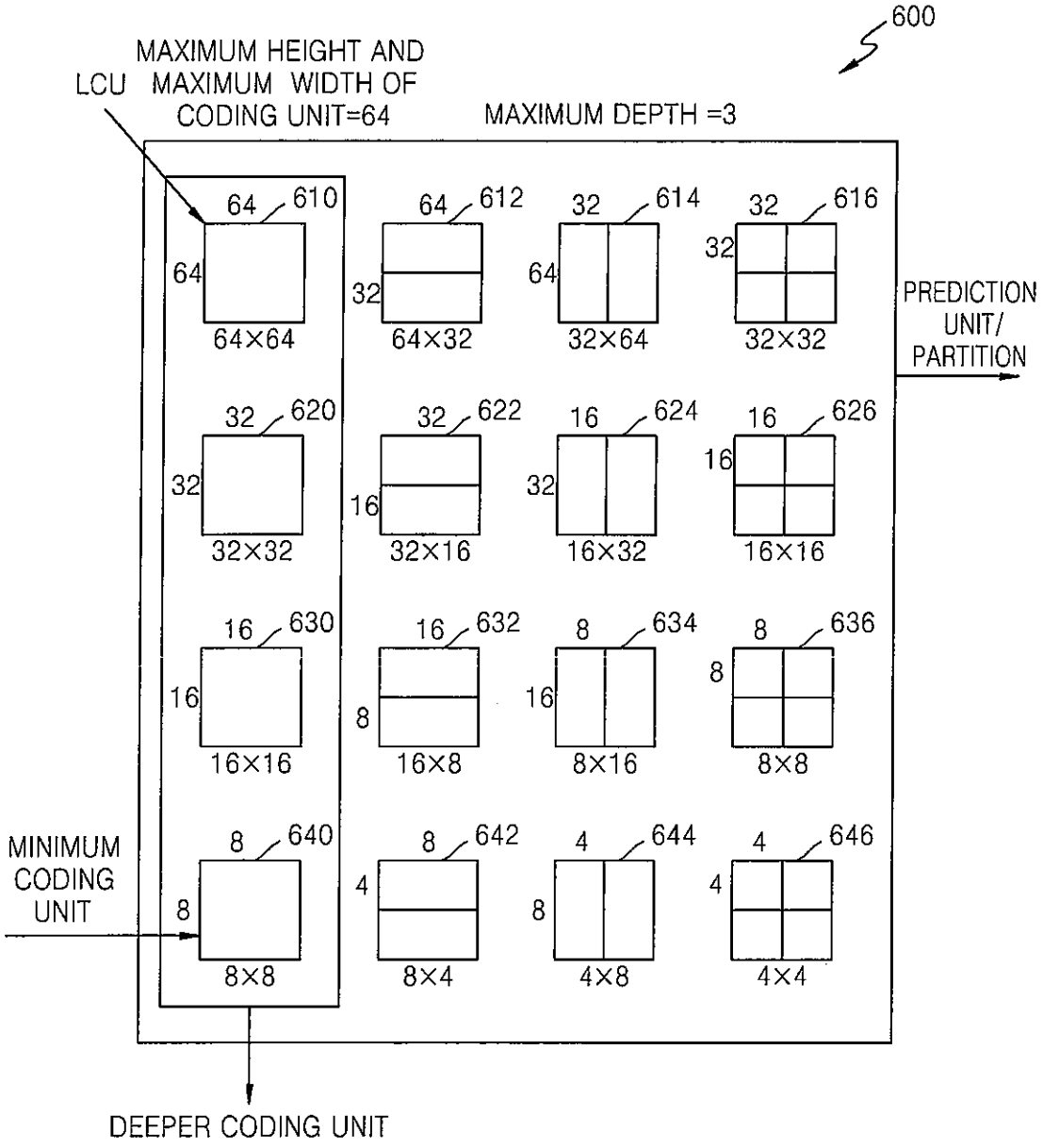

600
MAXIMUM HEIGHT AND MAXIMUM WIDTH OF CODING UNIT=64
LCU
MAXIMUM DEPTH =3
64
610
64
64×64
64
612
32
64×32
32
614
64
32×64
32
616
32
32×32
PREDICTION UNIT/ PARTITION
32
620
32
32×32
32
622
16
32×16
16
624
32
16×32
16
626
16
16×16
16
630
16
16×16
16
632
8
16×8
8
634
16
8×16
8
636
8
8×8
MINIMUM CODING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

FIG. 11

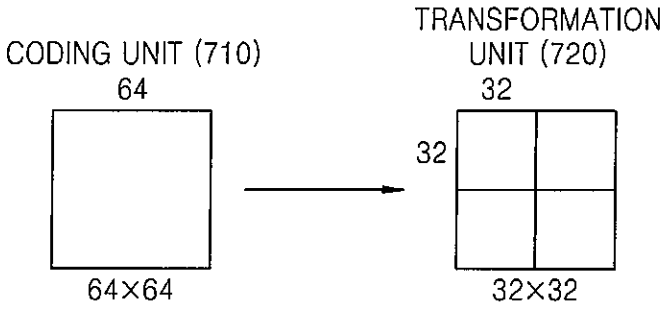

CODING UNIT (710)
64
64×64
TRANSFORMATION UNIT (720)
32
32
32×32

FIG. 12

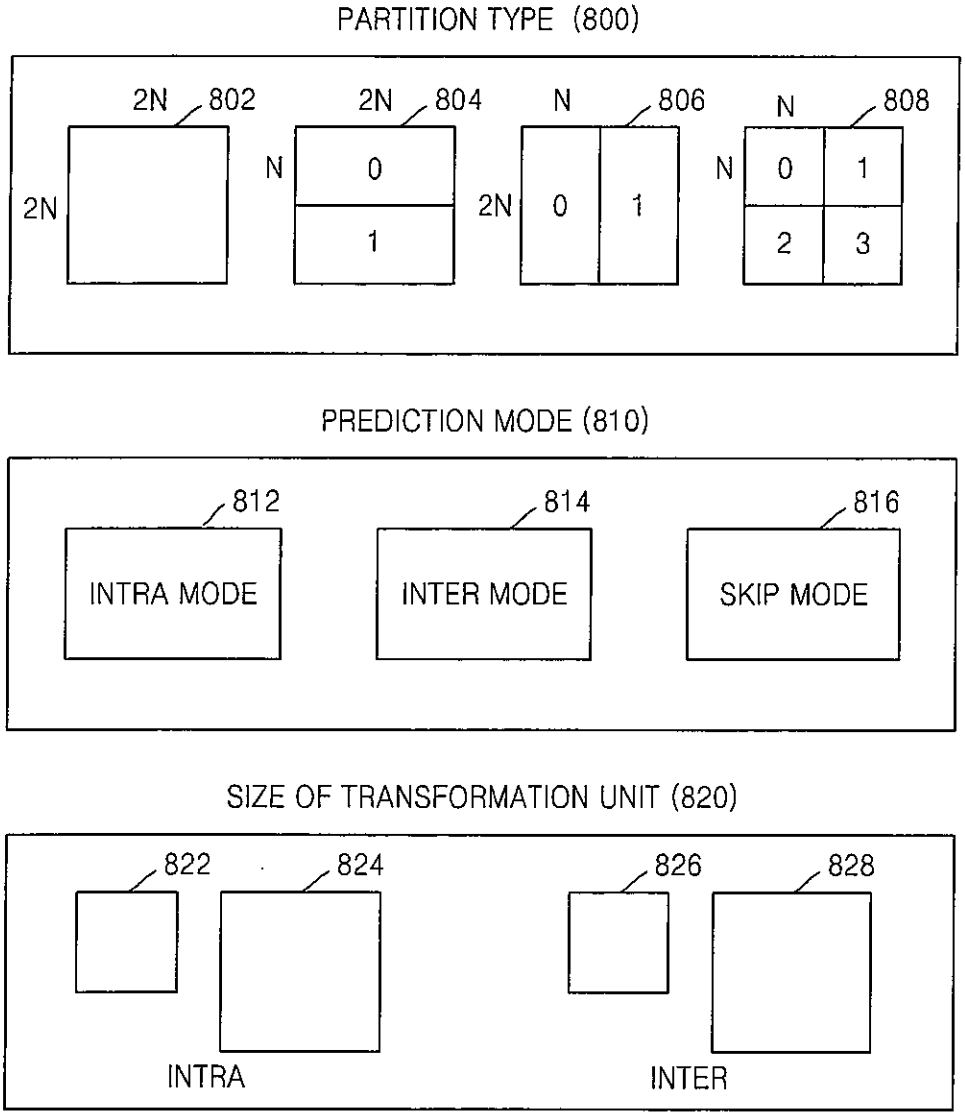

PARTITION TYPE (800)
2N
802
2N
804
N
806
N
808
2N
N
0
1
2N
0
1
N
0
1
2
3
PREDICTION MODE (810)
812
INTRA MODE
814
INTER MODE
816
SKIP MODE
SIZE OF TRANSFORMATION UNIT (820)
822
824
826
828
INTRA
INTER

FIG. 13

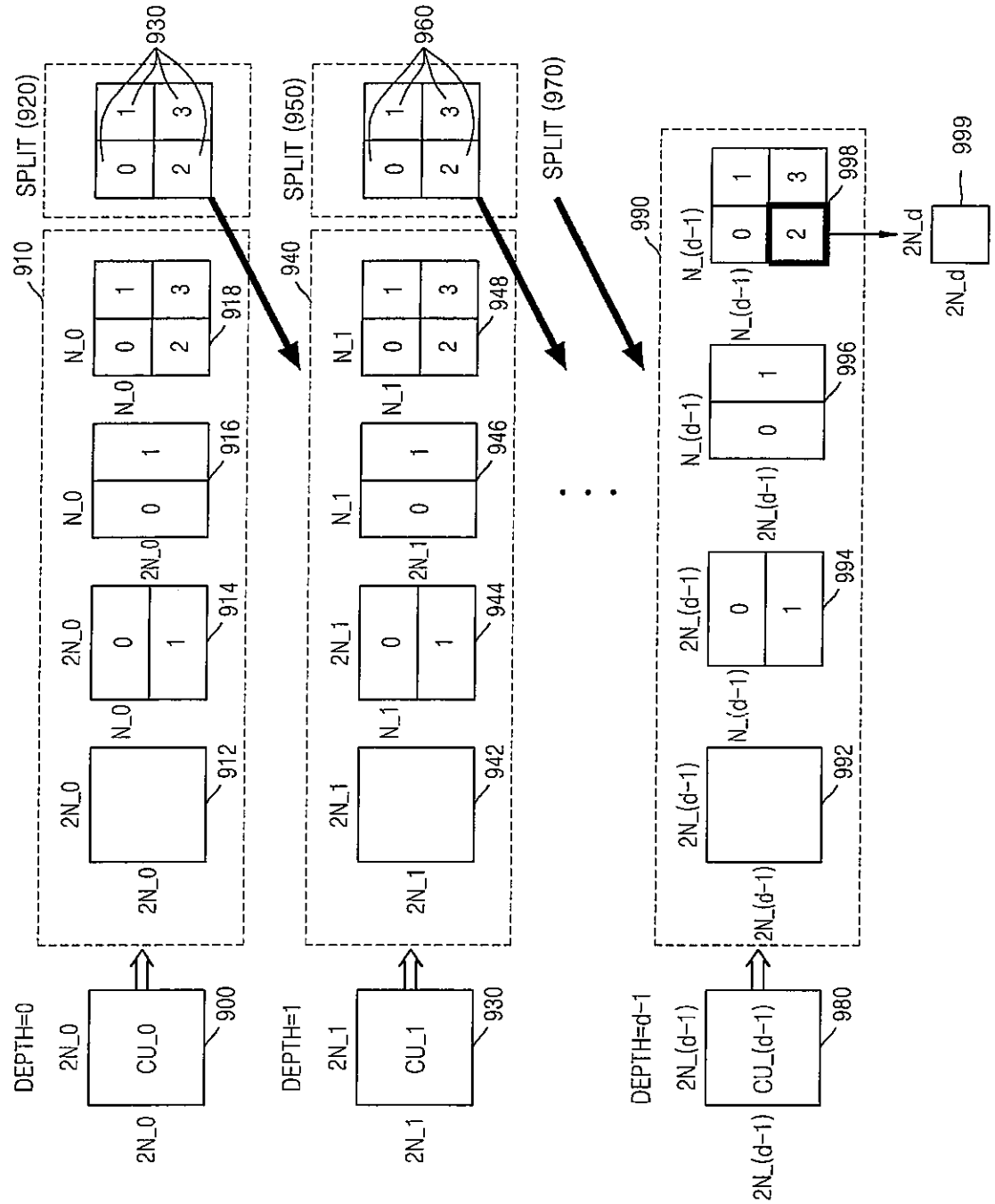
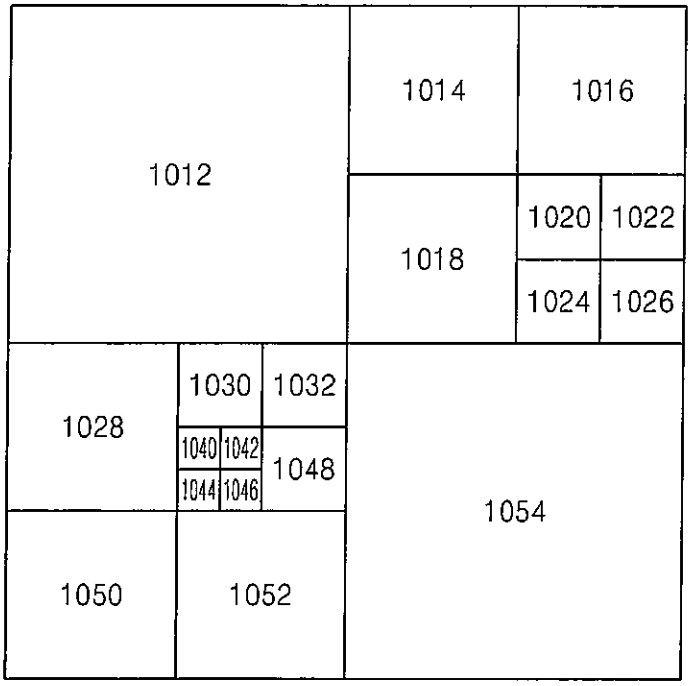

DEPTH=0
DEPTH=1
DEPTH=d-1
CU_0
CU_1
CU_(d-1)
900
930
980
910
940
990
912
914
916
918
942
944
946
948
992
994
996
998
999
930
960
SPLIT (920)
SPLIT (950)
SPLIT (970)
2N_0
2N_1
2N_(d-1)
N_0
N_1
N_(d-1)
2N_d

FIG. 14



CODING UNIT (1010)

FIG. 15

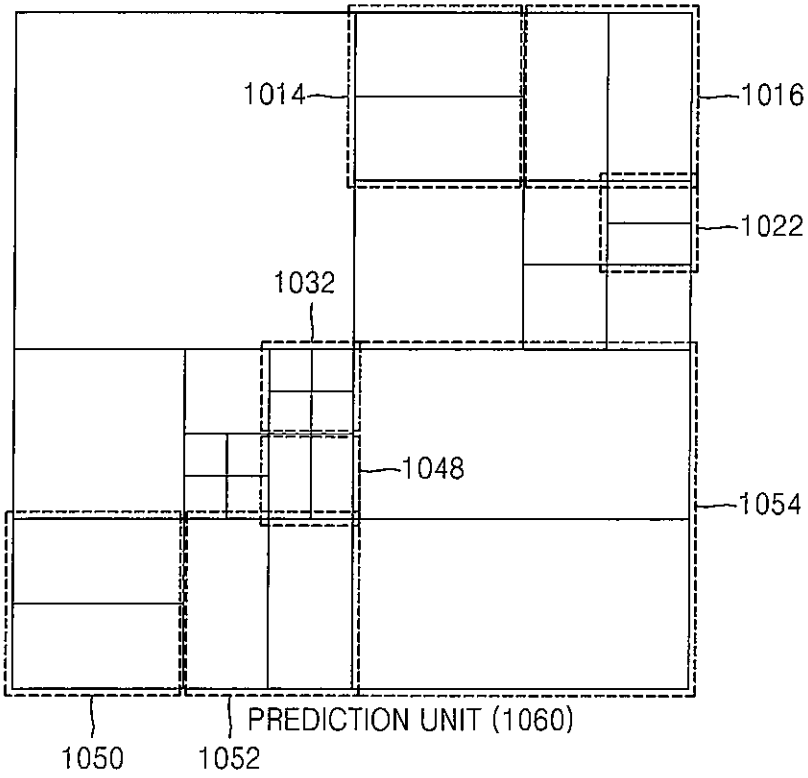


FIG. 16

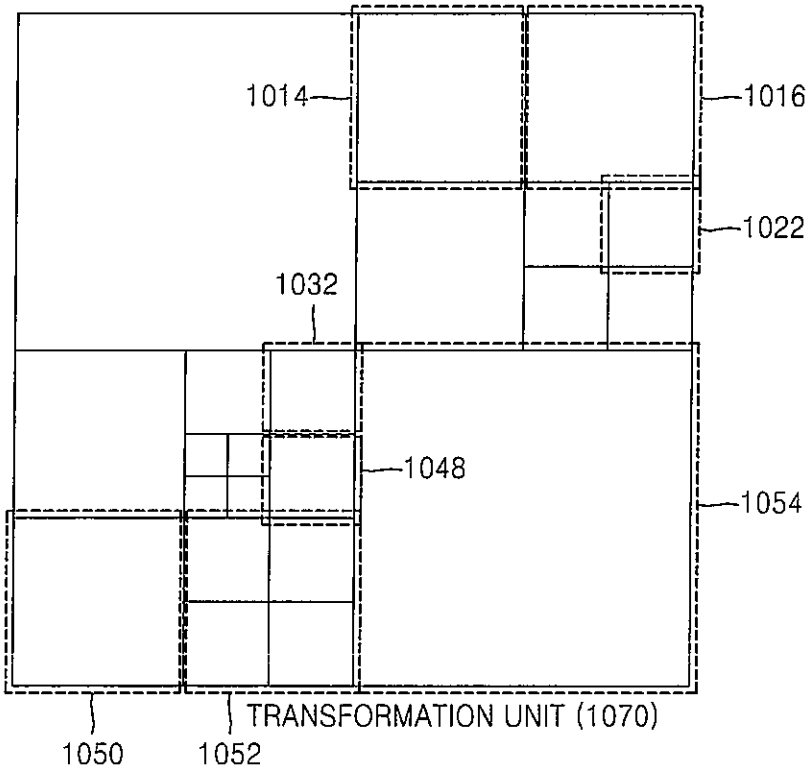

1014
1016
1022
1032
1048
1054
TRANSFORMATION UNIT (1070)
1050
1052

FIG. 17

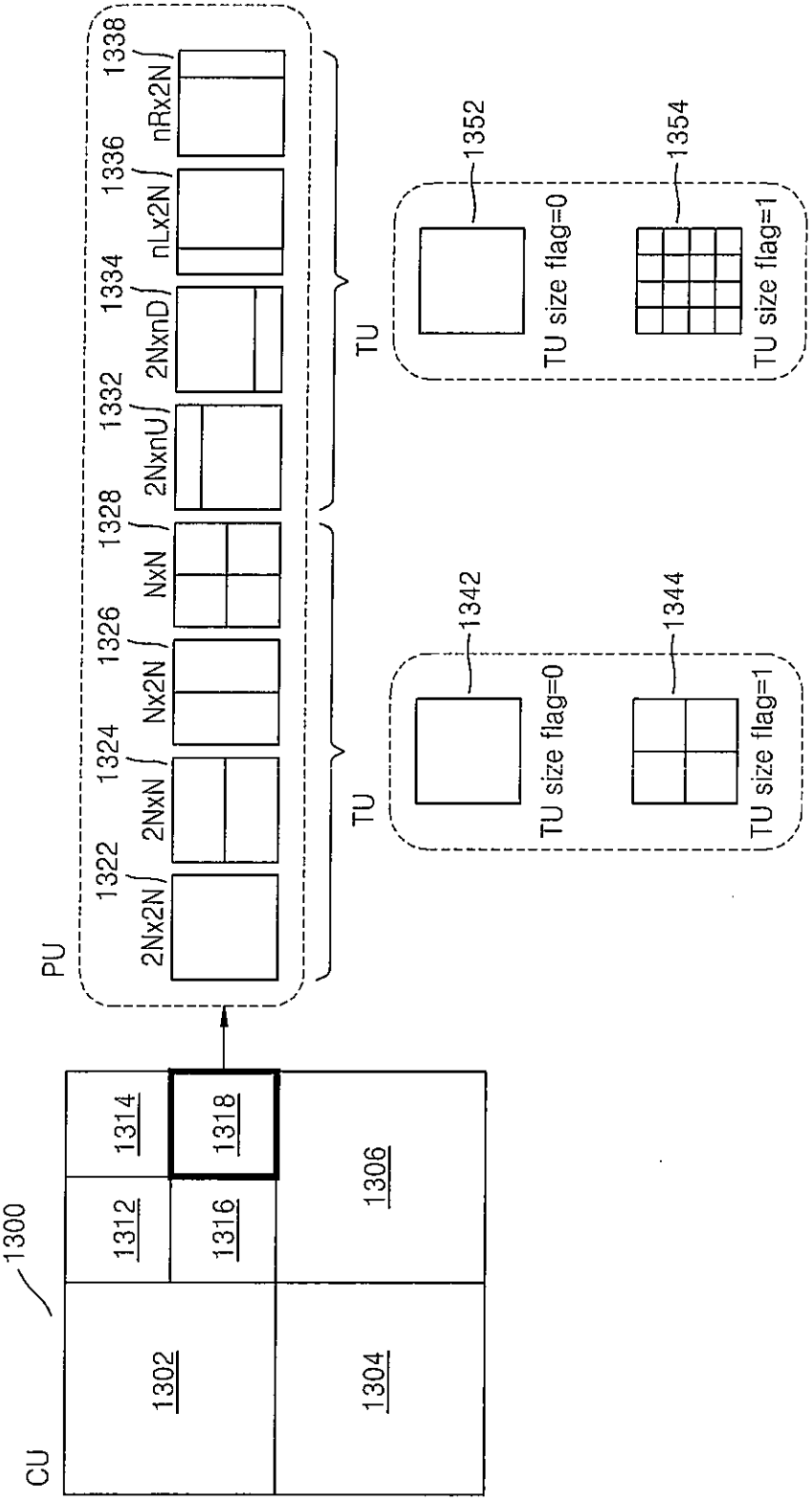

CU
1300
1302
1304
1306
1312
1314
1316
1318
PU
2Nx2N
1322
2NxN
1324
Nx2N
1326
NxN
1328
2NxnU
1332
2NxnD
1334
nLx2N
1336
nRx2N
1338
TU
TU
1342
TU size flag=0
1344
TU size flag=1
1352
TU size flag=0
1354
TU size flag=1

FIG. 18

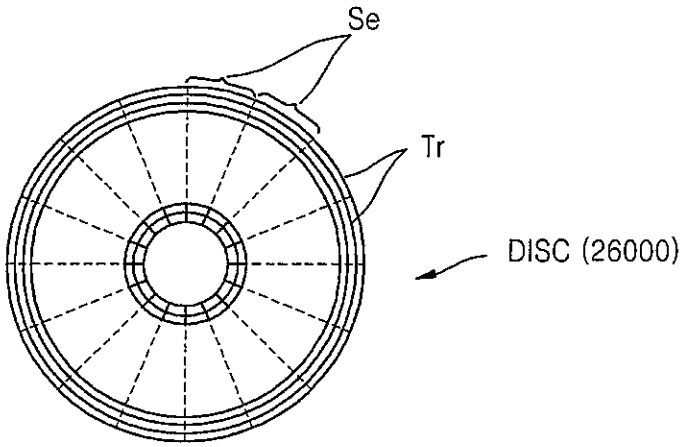


FIG. 19

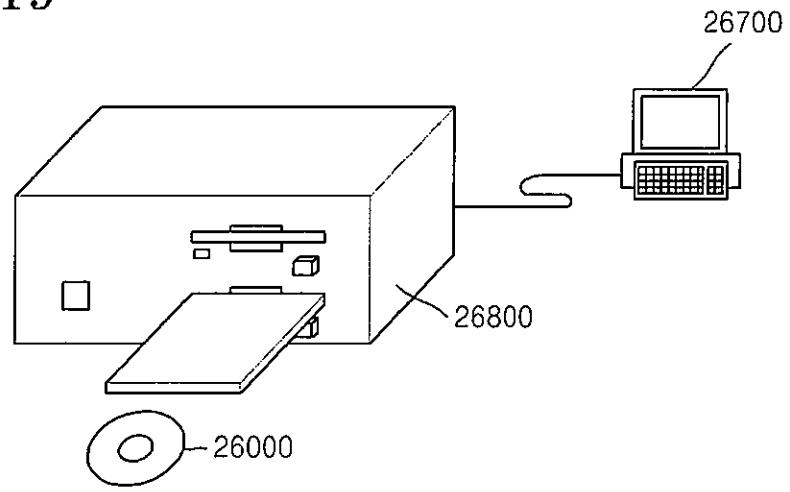


FIG. 20

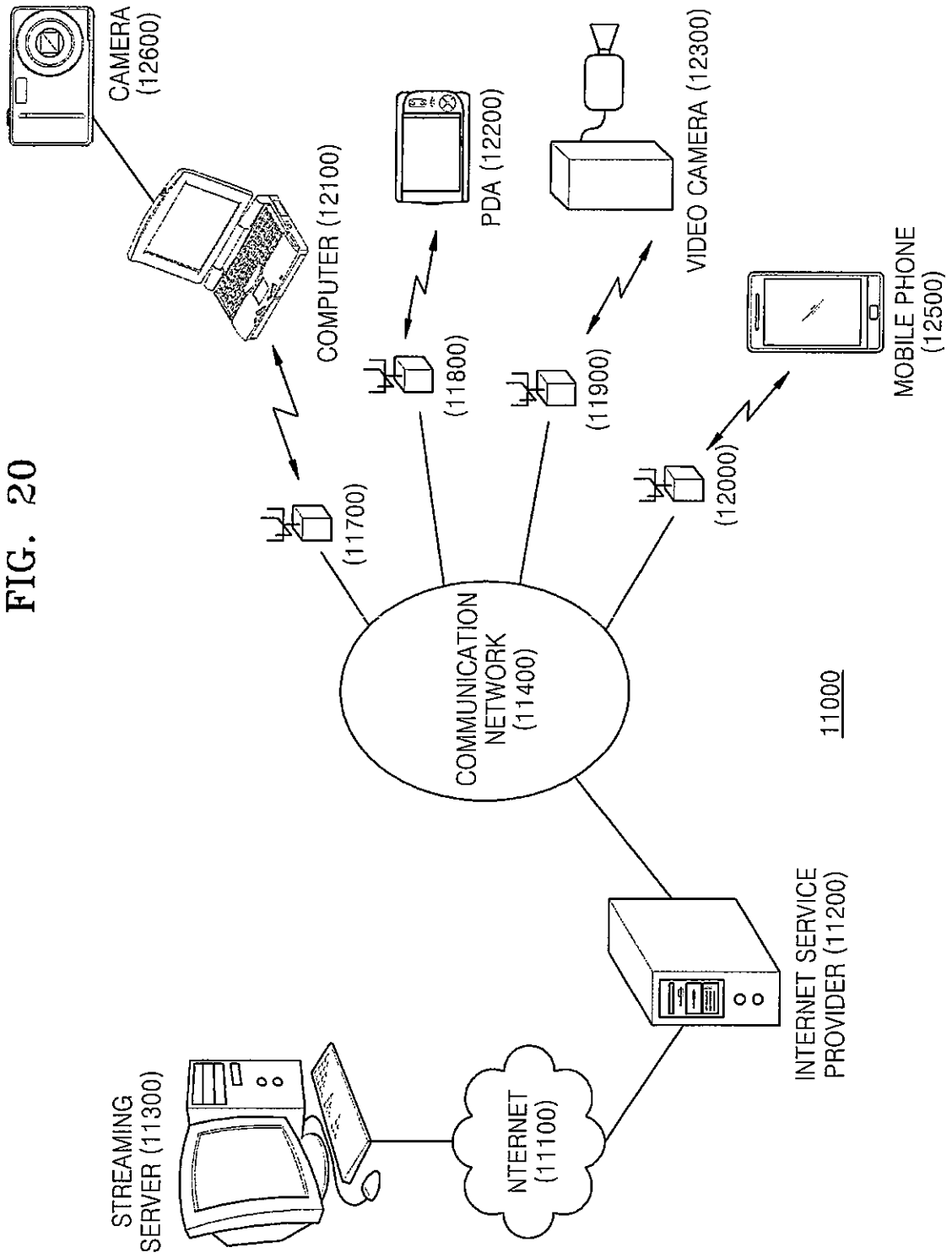

CAMERA (12600)
COMPUTER (12100)
PDA (12200)
VIDEO CAMERA (12300)
MOBILE PHONE (12500)
(11700)
(11800)
(11900)
(12000)
COMMUNICATION NETWORK (11400)
INTERNET (11100)
STREAMING SERVER (11300)
INTERNET SERVICE PROVIDER (11200)
11000

FIG. 21

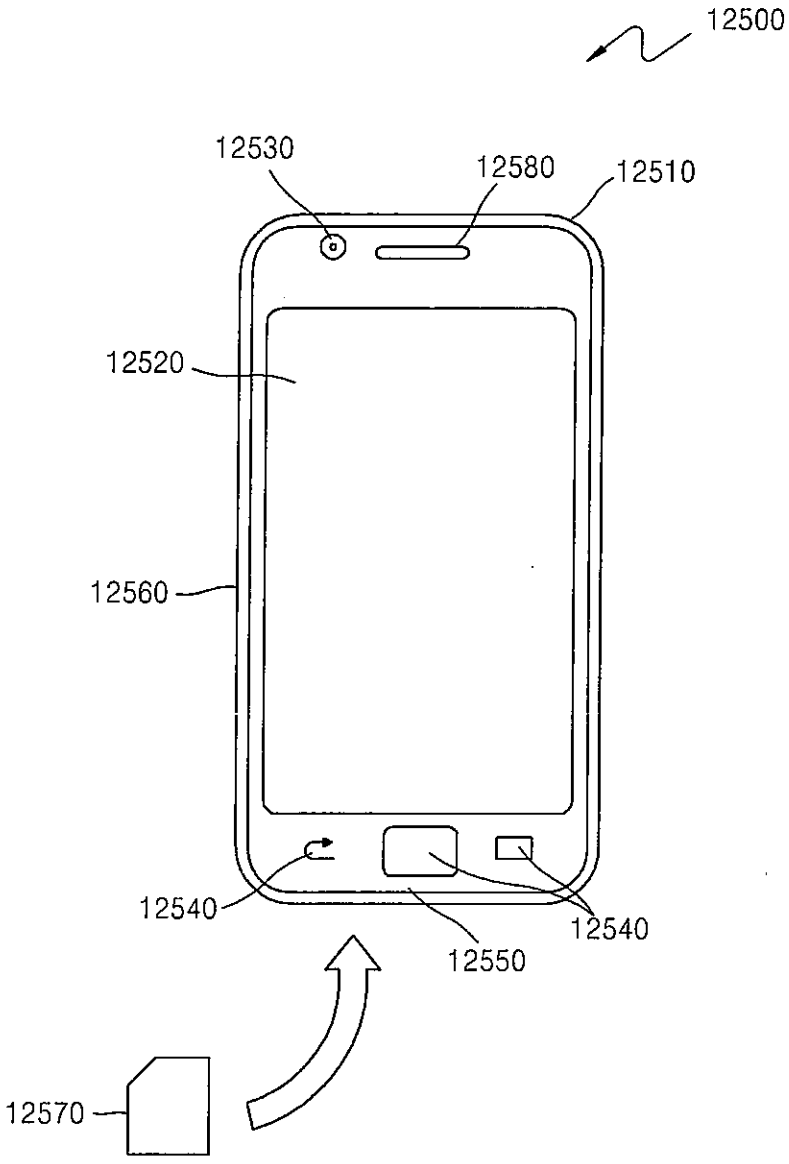

12500
12530
12580
12510
12520
12560
12540
12540
12550
12570

FIG. 22

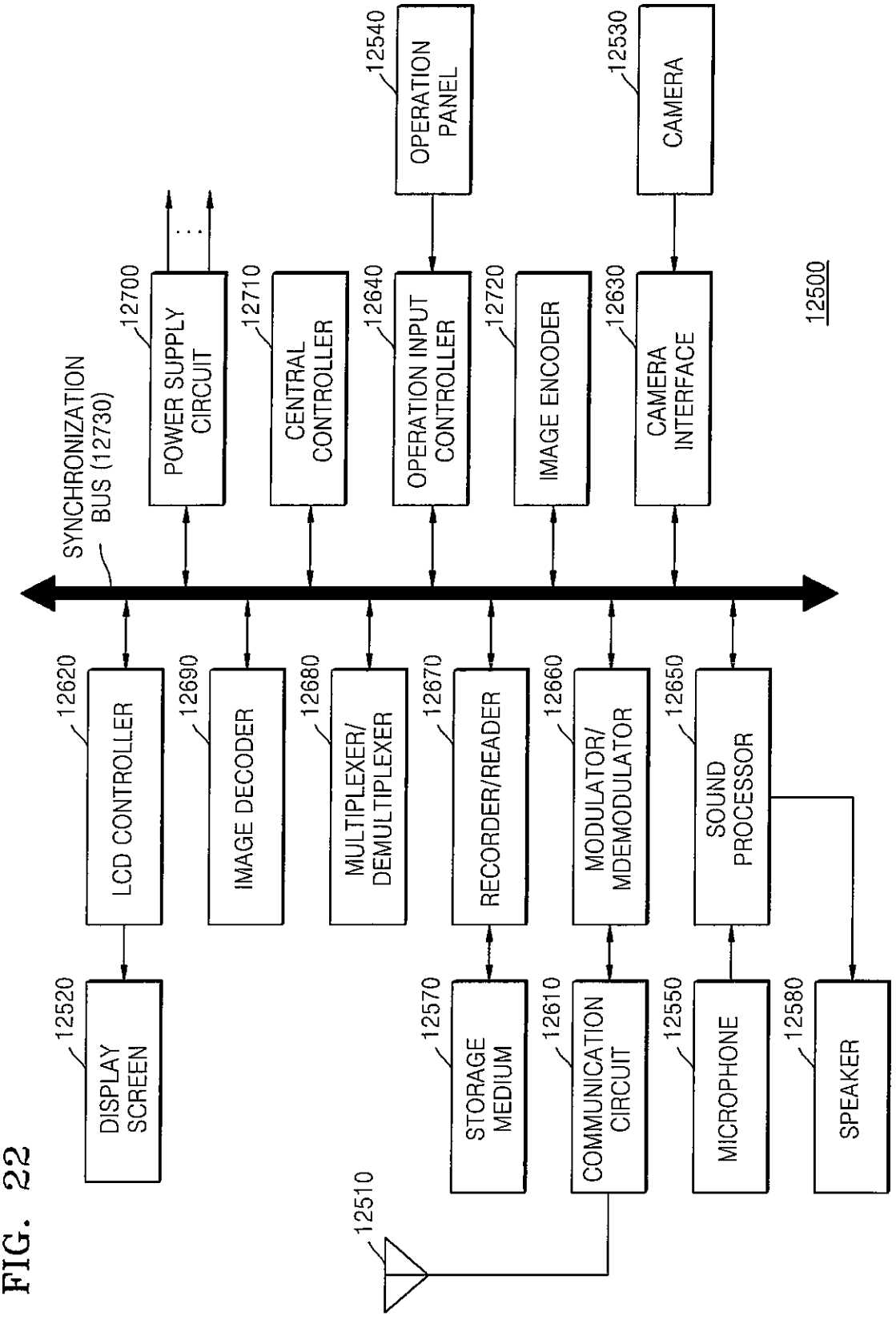

12500
SYNCHRONIZATION BUS (12730)
POWER SUPPLY CIRCUIT
12700
CENTRAL CONTROLLER
12710
OPERATION INPUT CONTROLLER
12640
IMAGE ENCODER
12720
CAMERA INTERFACE
12630
OPERATION PANEL
12540
CAMERA
12530
LCD CONTROLLER
12620
IMAGE DECODER
12690
MULTIPLEXER/ DEMULTIPLEXER
12680
RECORDER/READER
12670
MODULATOR/ MDEMODULATOR
12660
SOUND PROCESSOR
12650
DISPLAY SCREEN
12520
STORAGE MEDIUM
12570
COMMUNICATION CIRCUIT
12610
MICROPHONE
12550
SPEAKER
12580
12510

FIG. 23

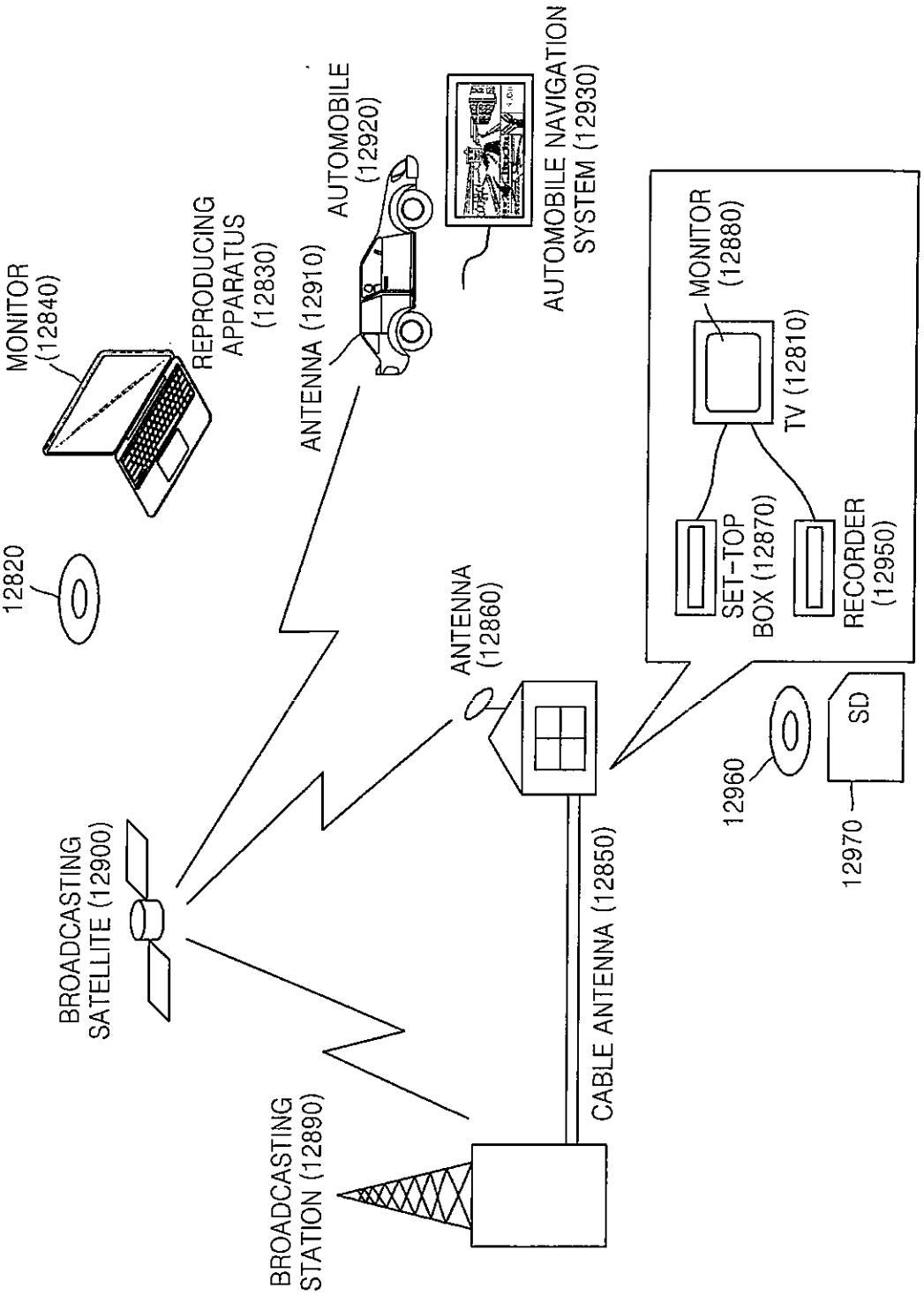
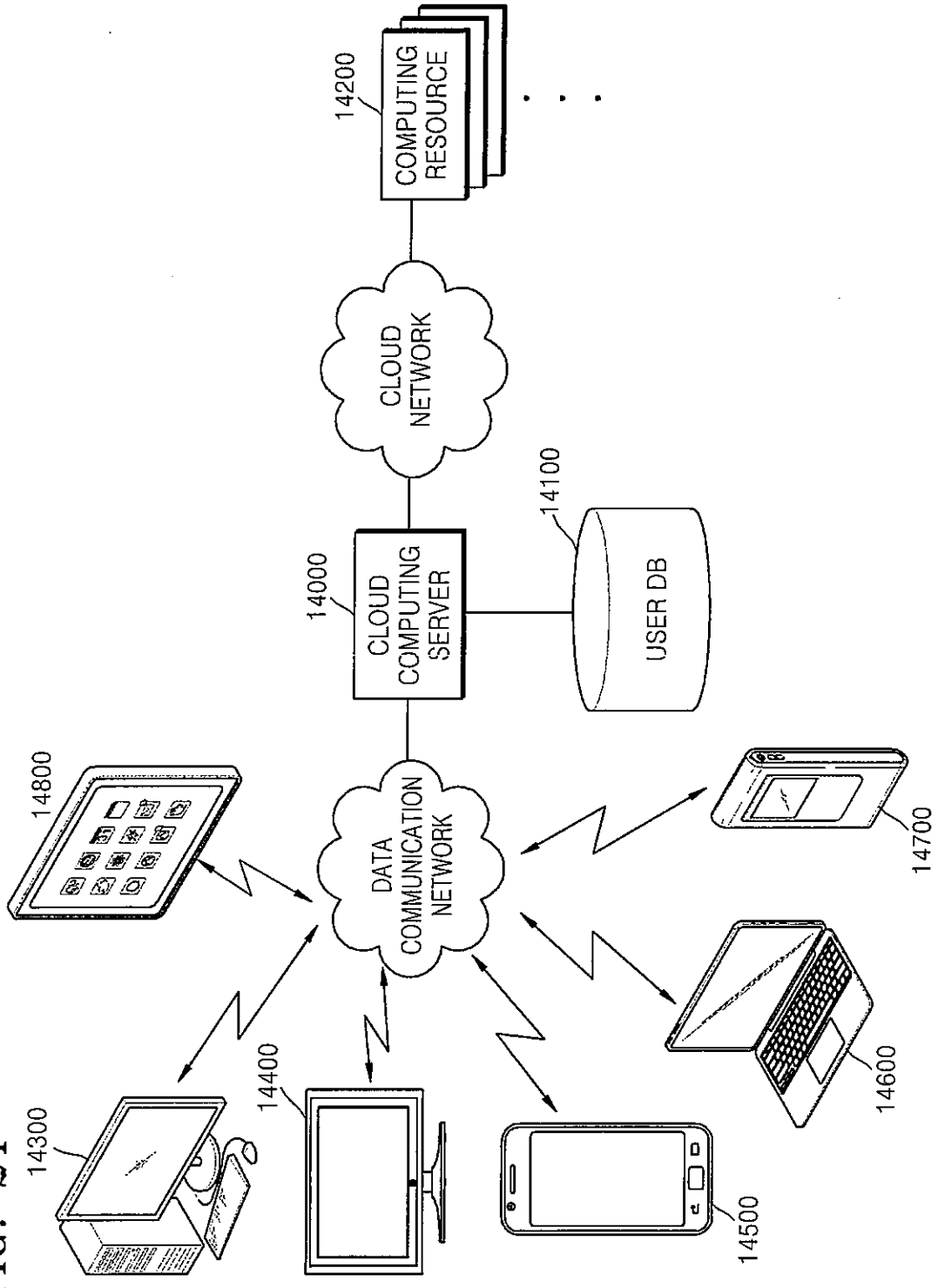

BROADCASTING STATION (12890)
BROADCASTING SATELLITE (12900)
CABLE ANTENNA (12850)
ANTENNA (12860)
ANTENNA (12910)
AUTOMOBILE (12920)
AUTOMOBILE NAVIGATION SYSTEM (12930)
REPRODUCING APPARATUS (12830)
MONITOR (12840)
12820
MONITOR (12880)
TV (12810)
SET-TOP BOX (12870)
RECORDER (12950)
12960
SD
12970

FIG. 24


14200
COMPUTING RESOURCE
CLOUD NETWORK
14100
USER DB
14000
CLOUD COMPUTING SERVER
DATA COMMUNICATION NETWORK
14800
14700
14600
14400
14300
14500