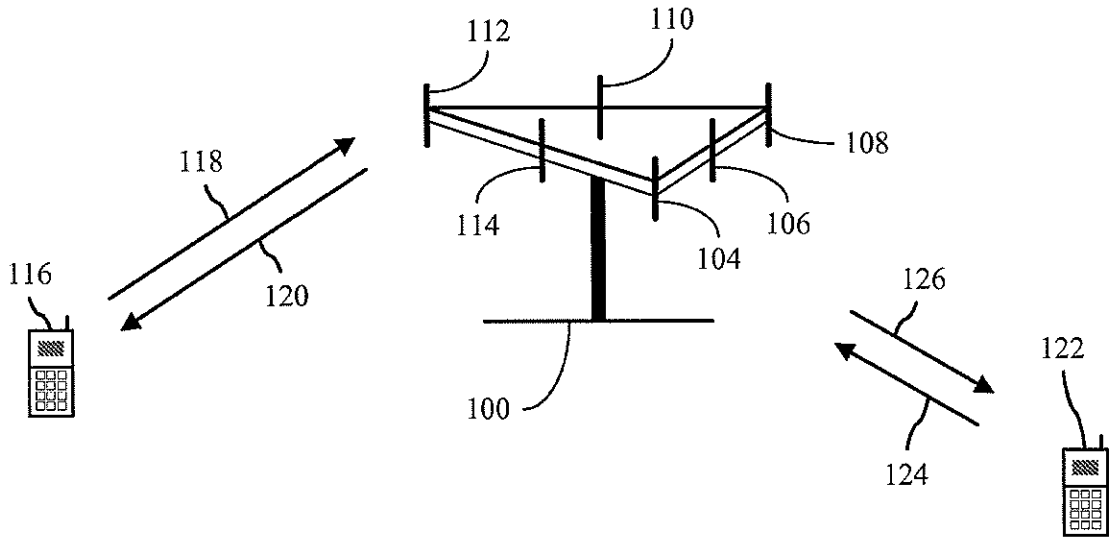


FIG. 1

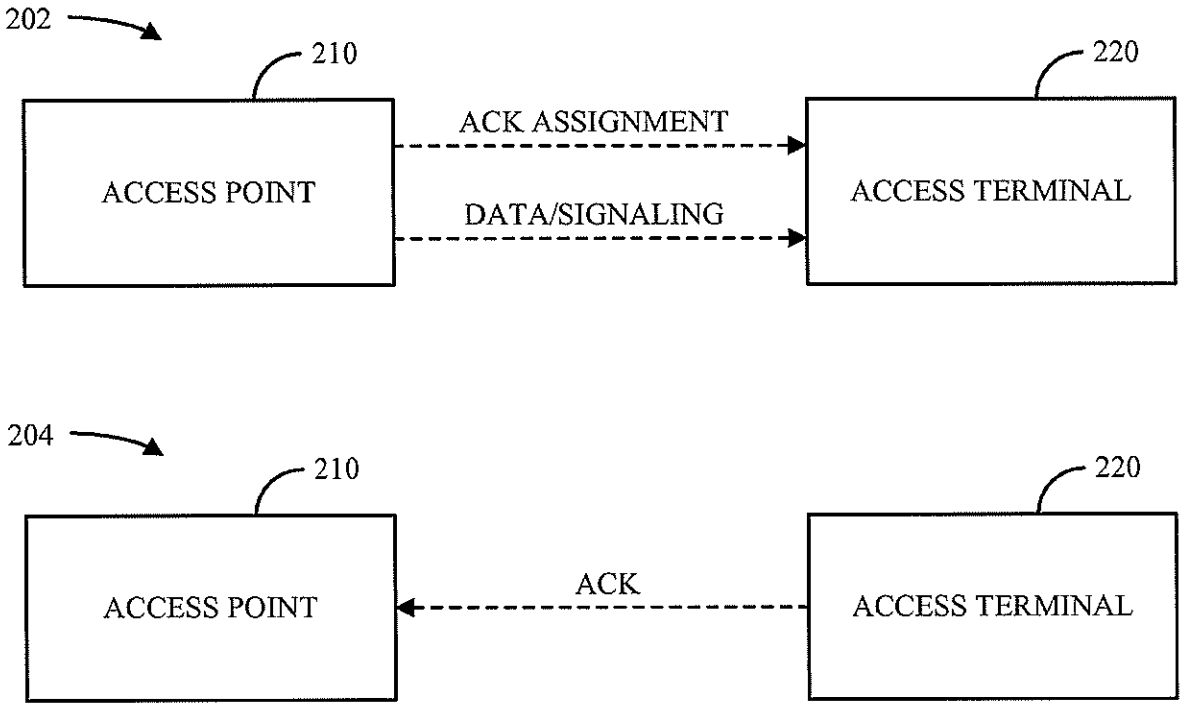

202
210
220
ACCESS POINT
ACK ASSIGNMENT
DATA/SIGNALING
ACCESS TERMINAL
204
210
220
ACCESS POINT
ACK
ACCESS TERMINAL

FIG. 2

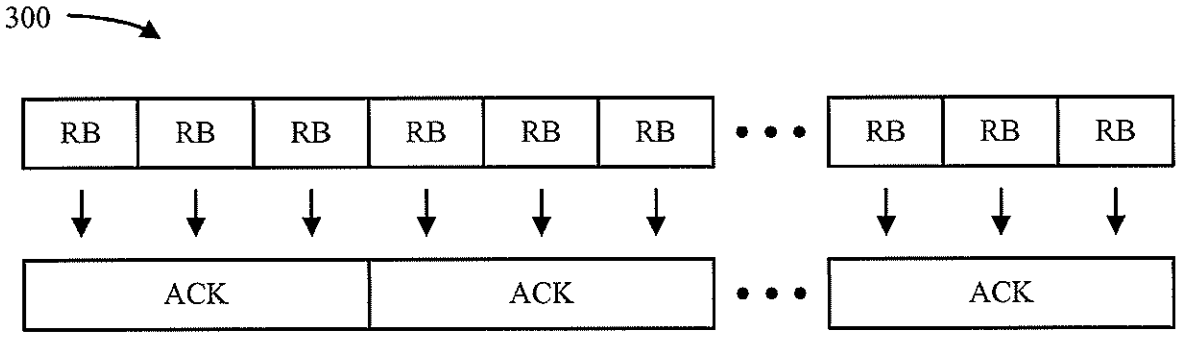

300
RB
RB
RB
RB
RB
RB
RB
RB
RB
ACK
ACK
ACK

FIG. 3

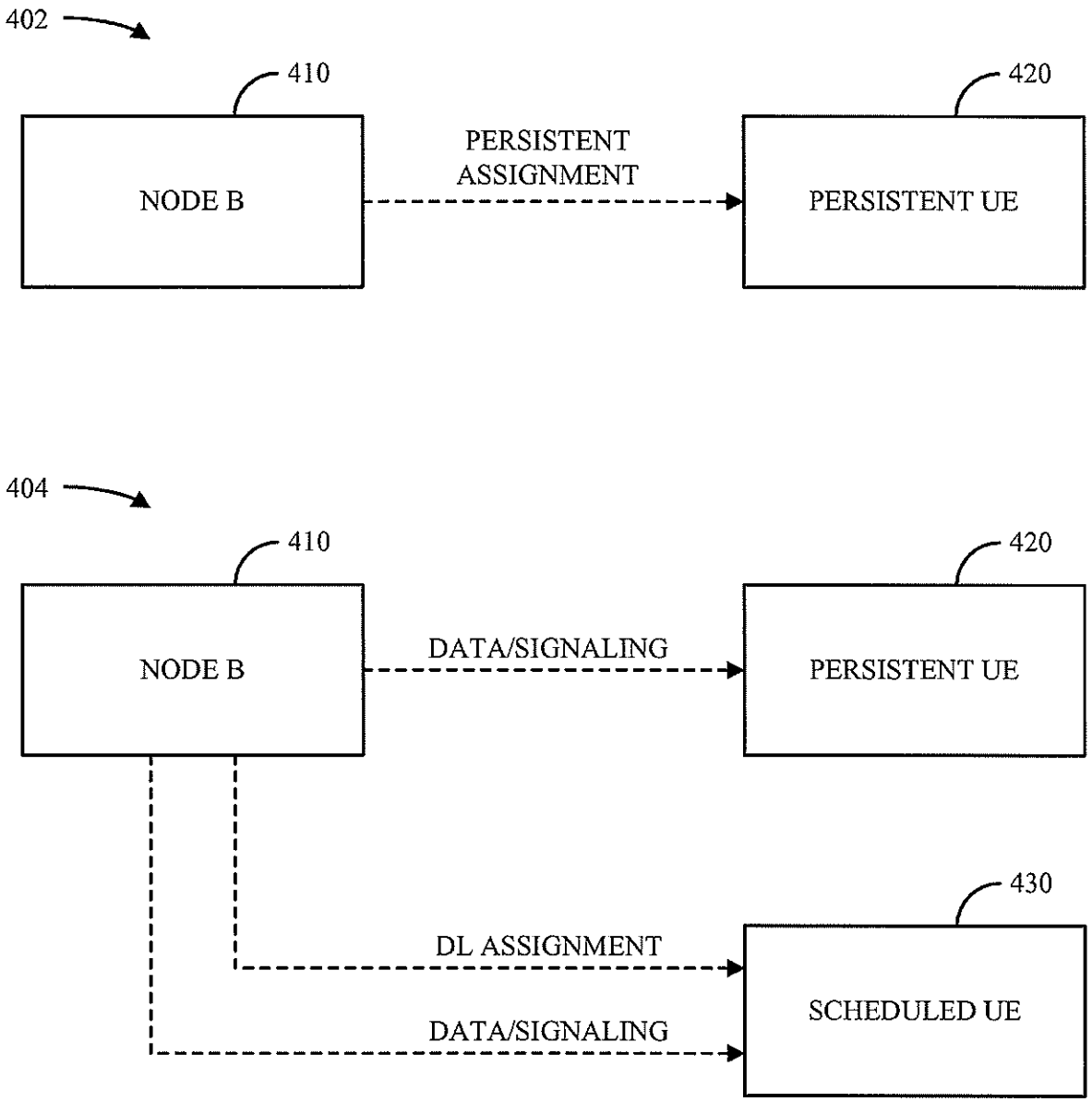

402
410
420
NODE B
PERSISTENT ASSIGNMENT
PERSISTENT UE
404
410
420
NODE B
DATA/SIGNALING
PERSISTENT UE
430
DL ASSIGNMENT
DATA/SIGNALING
SCHEDULED UE

FIG. 4

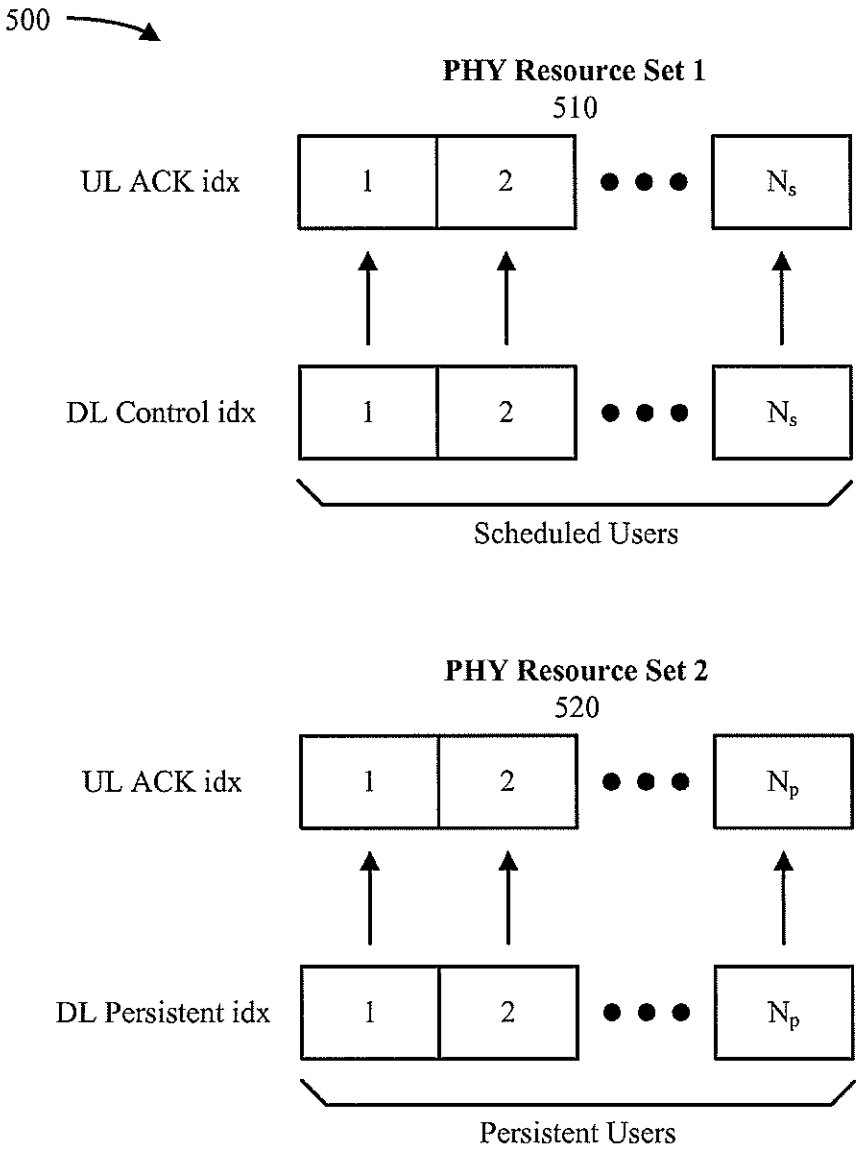

500
PHY Resource Set 1
510
UL ACK idx
1
2
N_s
DL Control idx
1
2
N_s
Scheduled Users
PHY Resource Set 2
520
UL ACK idx
1
2
N_p
DL Persistent idx
1
2
N_p
Persistent Users

FIG. 5

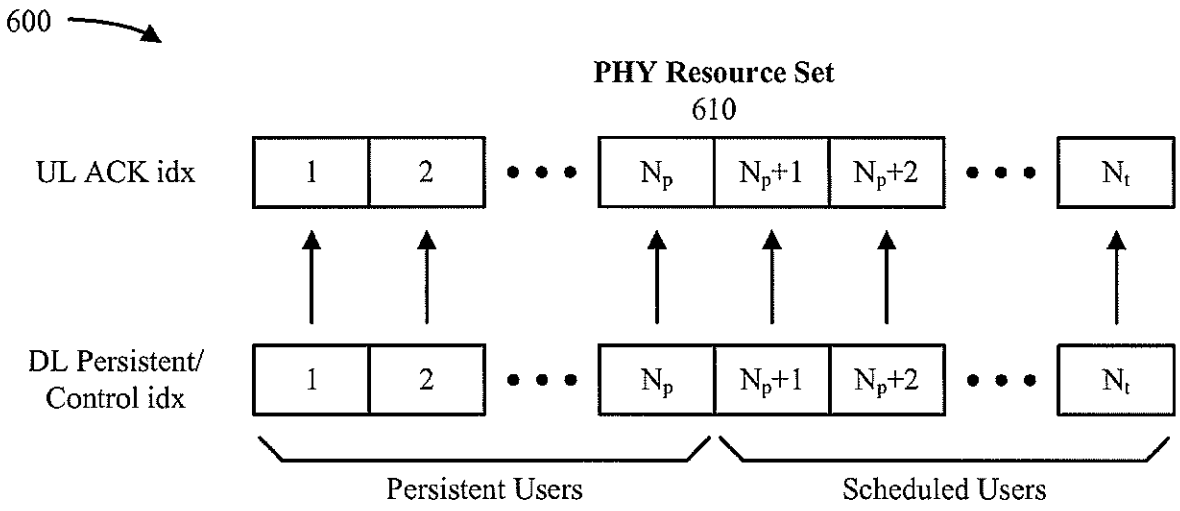

600
PHY Resource Set
610
UL ACK idx
1
2
Np
Np+1
Np+2
Nt
DL Persistent/
Control idx
Persistent Users
Scheduled Users

FIG. 6

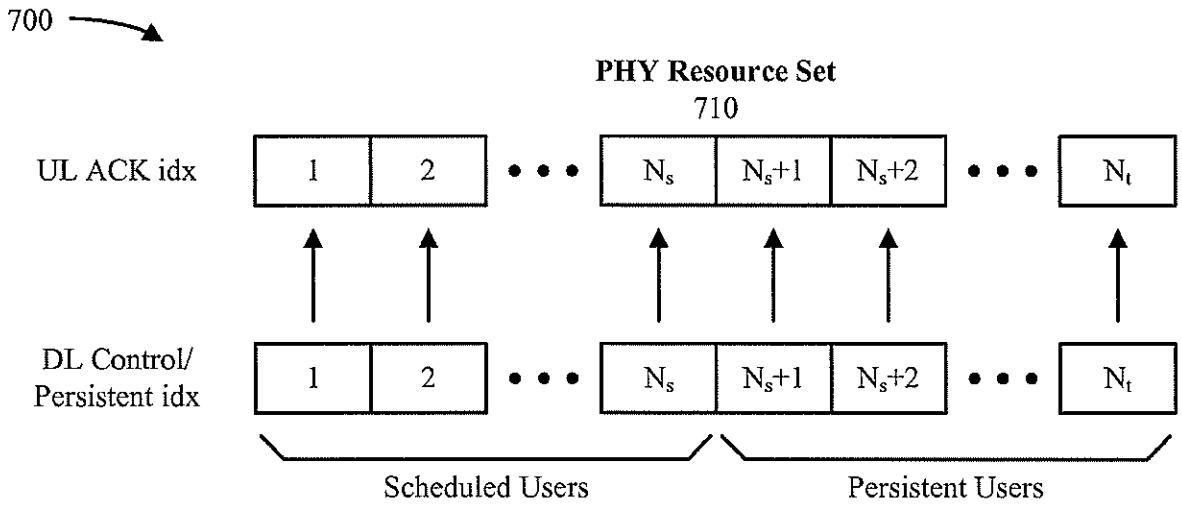

700
PHY Resource Set
710
UL ACK idx
1
2
Ns
Ns+1
Ns+2
Nt
DL Control/
Persistent idx
Scheduled Users
Persistent Users

FIG. 7

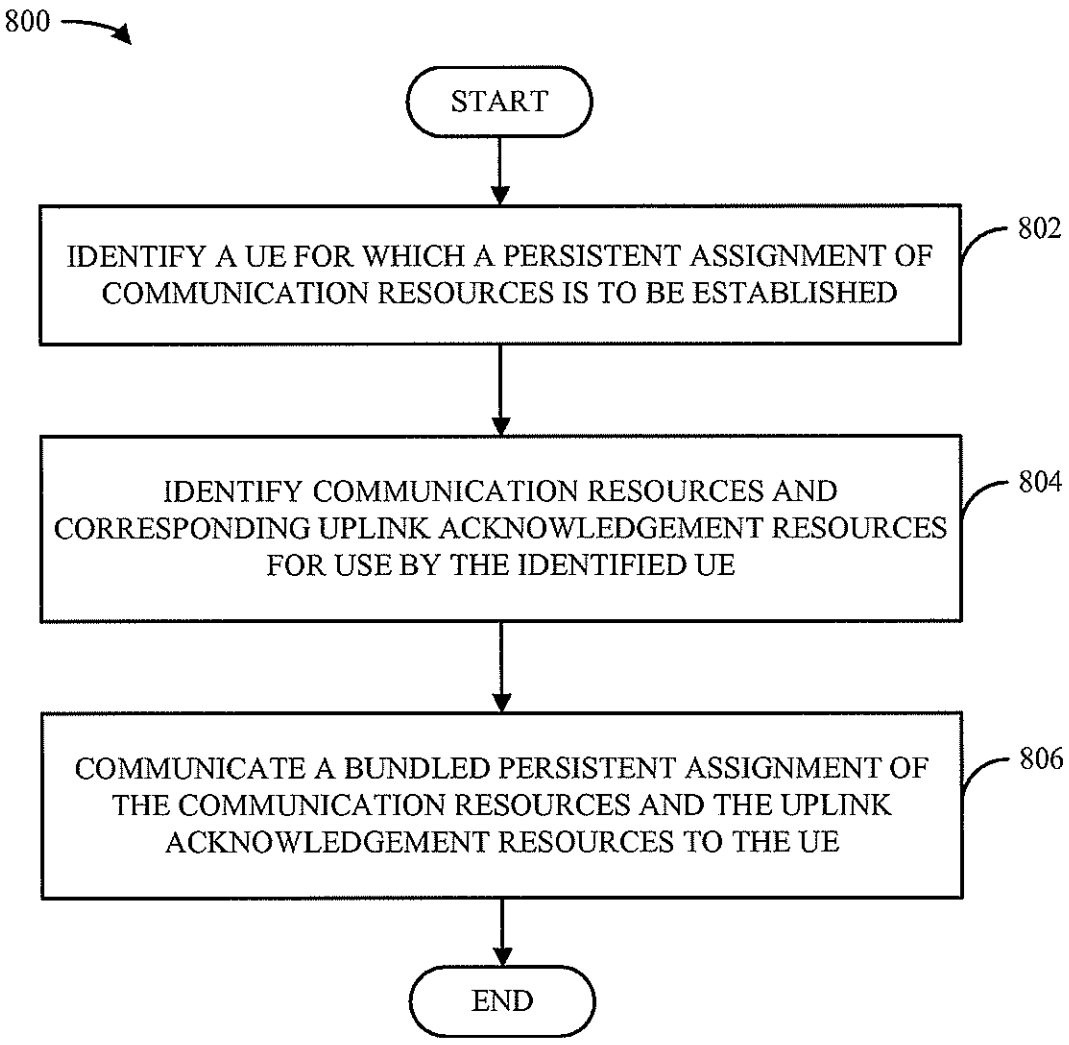

800
START
IDENTIFY A UE FOR WHICH A PERSISTENT ASSIGNMENT OF COMMUNICATION RESOURCES IS TO BE ESTABLISHED
802
IDENTIFY COMMUNICATION RESOURCES AND CORRESPONDING UPLINK ACKNOWLEDGEMENT RESOURCES FOR USE BY THE IDENTIFIED UE
804
COMMUNICATE A BUNDLED PERSISTENT ASSIGNMENT OF THE COMMUNICATION RESOURCES AND THE UPLINK ACKNOWLEDGEMENT RESOURCES TO THE UE
806
END

FIG. 8

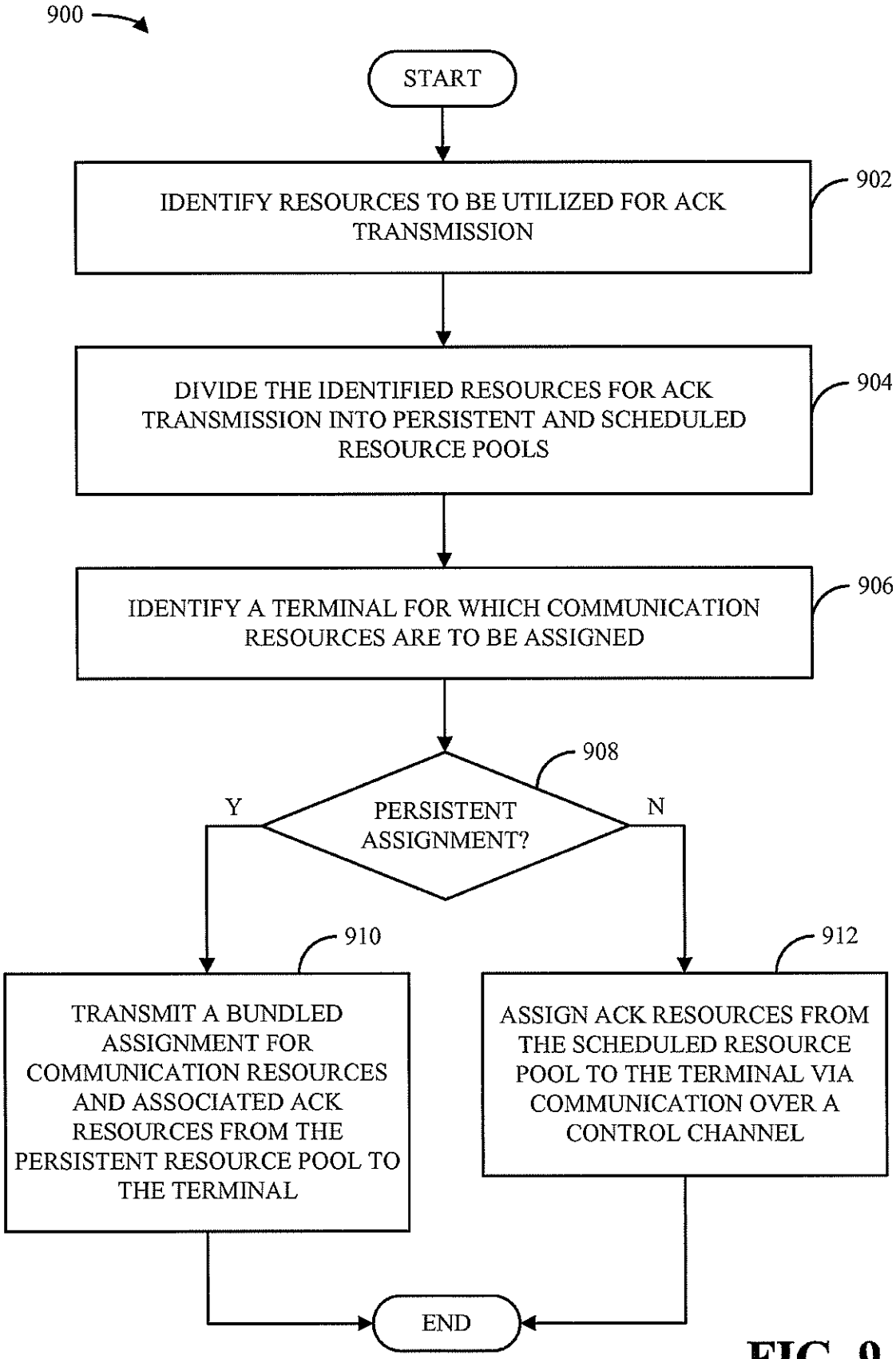

900
START
IDENTIFY RESOURCES TO BE UTILIZED FOR ACK TRANSMISSION
902
DIVIDE THE IDENTIFIED RESOURCES FOR ACK TRANSMISSION INTO PERSISTENT AND SCHEDULED RESOURCE POOLS
904
IDENTIFY A TERMINAL FOR WHICH COMMUNICATION RESOURCES ARE TO BE ASSIGNED
906
908
PERSISTENT ASSIGNMENT?
Y
N
910
TRANSMIT A BUNDLED ASSIGNMENT FOR COMMUNICATION RESOURCES AND ASSOCIATED ACK RESOURCES FROM THE PERSISTENT RESOURCE POOL TO THE TERMINAL
912
ASSIGN ACK RESOURCES FROM THE SCHEDULED RESOURCE POOL TO THE TERMINAL VIA COMMUNICATION OVER A CONTROL CHANNEL
END

FIG. 9

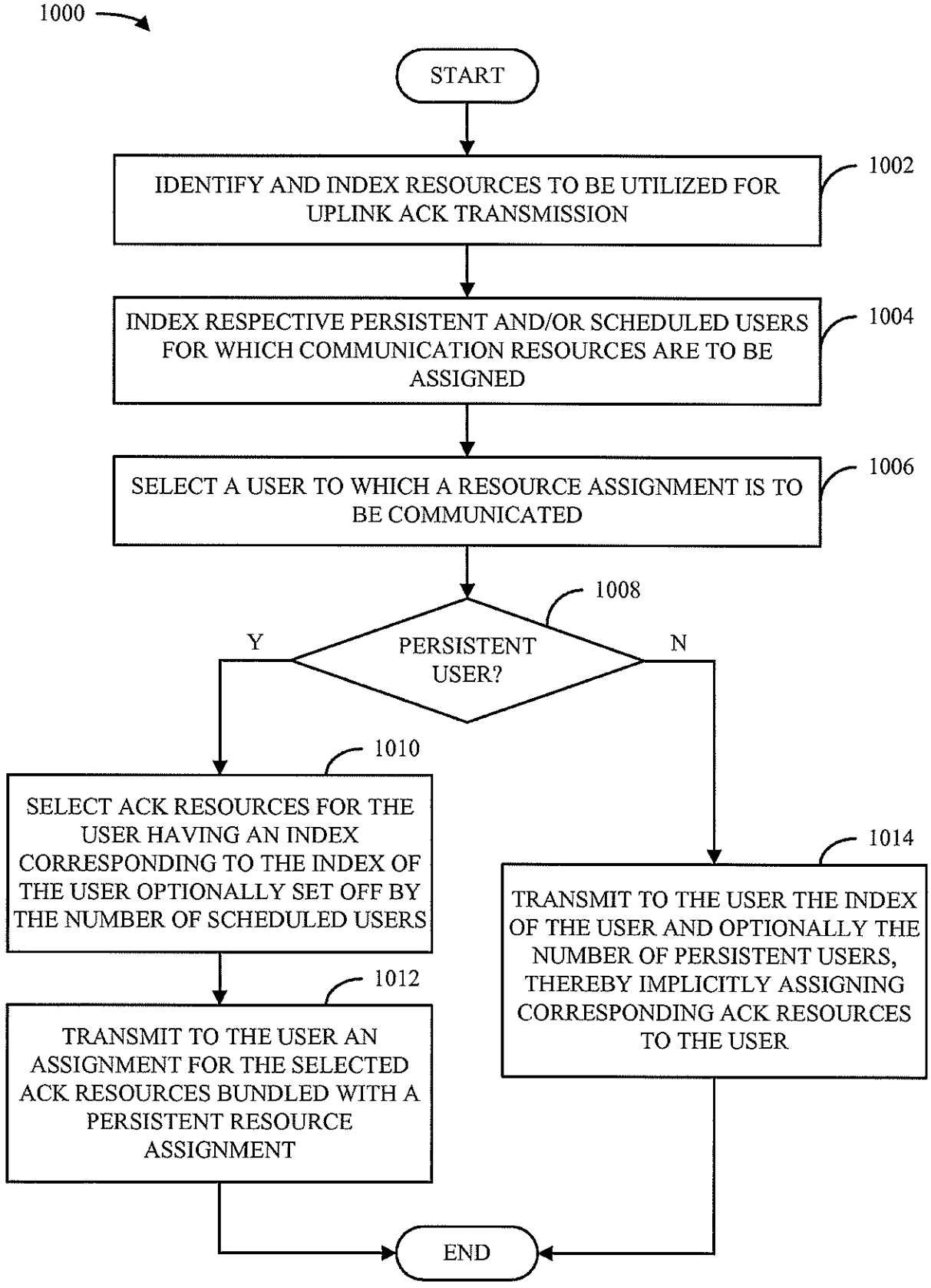

1000
START
IDENTIFY AND INDEX RESOURCES TO BE UTILIZED FOR UPLINK ACK TRANSMISSION
1002
INDEX RESPECTIVE PERSISTENT AND/OR SCHEDULED USERS FOR WHICH COMMUNICATION RESOURCES ARE TO BE ASSIGNED
1004
SELECT A USER TO WHICH A RESOURCE ASSIGNMENT IS TO BE COMMUNICATED
1006
1008
PERSISTENT USER?
Y
N
1010
SELECT ACK RESOURCES FOR THE USER HAVING AN INDEX CORRESPONDING TO THE INDEX OF THE USER OPTIONALLY SET OFF BY THE NUMBER OF SCHEDULED USERS
1012
TRANSMIT TO THE USER AN ASSIGNMENT FOR THE SELECTED ACK RESOURCES BUNDLED WITH A PERSISTENT RESOURCE ASSIGNMENT
1014
TRANSMIT TO THE USER THE INDEX OF THE USER AND OPTIONALLY THE NUMBER OF PERSISTENT USERS, THEREBY IMPLICITLY ASSIGNING CORRESPONDING ACK RESOURCES TO THE USER
END

FIG. 10

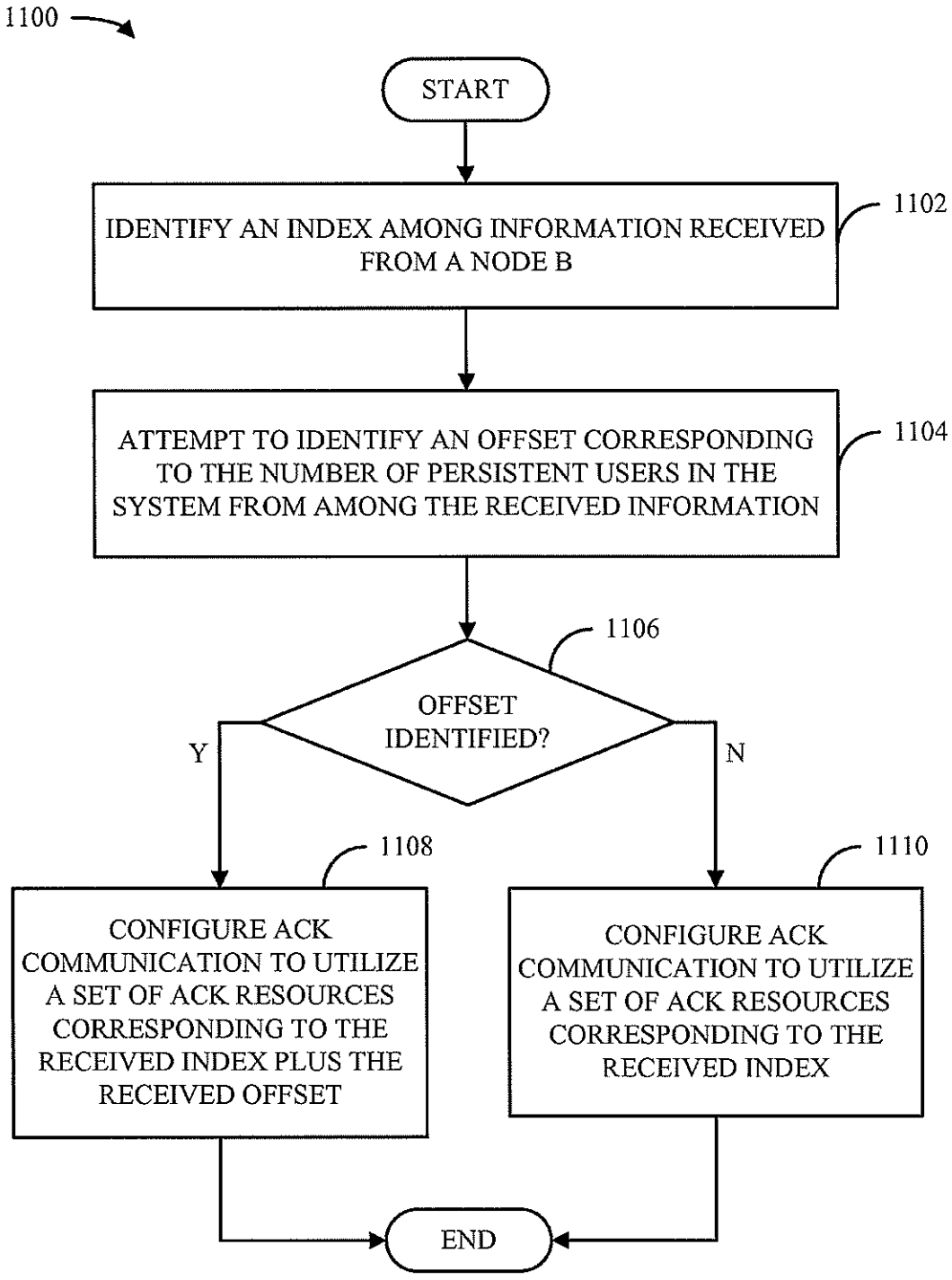

1100
START
IDENTIFY AN INDEX AMONG INFORMATION RECEIVED FROM A NODE B
1102
ATTEMPT TO IDENTIFY AN OFFSET CORRESPONDING TO THE NUMBER OF PERSISTENT USERS IN THE SYSTEM FROM AMONG THE RECEIVED INFORMATION
1104
1106
OFFSET IDENTIFIED?
Y
N
1108
CONFIGURE ACK COMMUNICATION TO UTILIZE A SET OF ACK RESOURCES CORRESPONDING TO THE RECEIVED INDEX PLUS THE RECEIVED OFFSET
1110
CONFIGURE ACK COMMUNICATION TO UTILIZE A SET OF ACK RESOURCES CORRESPONDING TO THE RECEIVED INDEX
END

FIG. 11

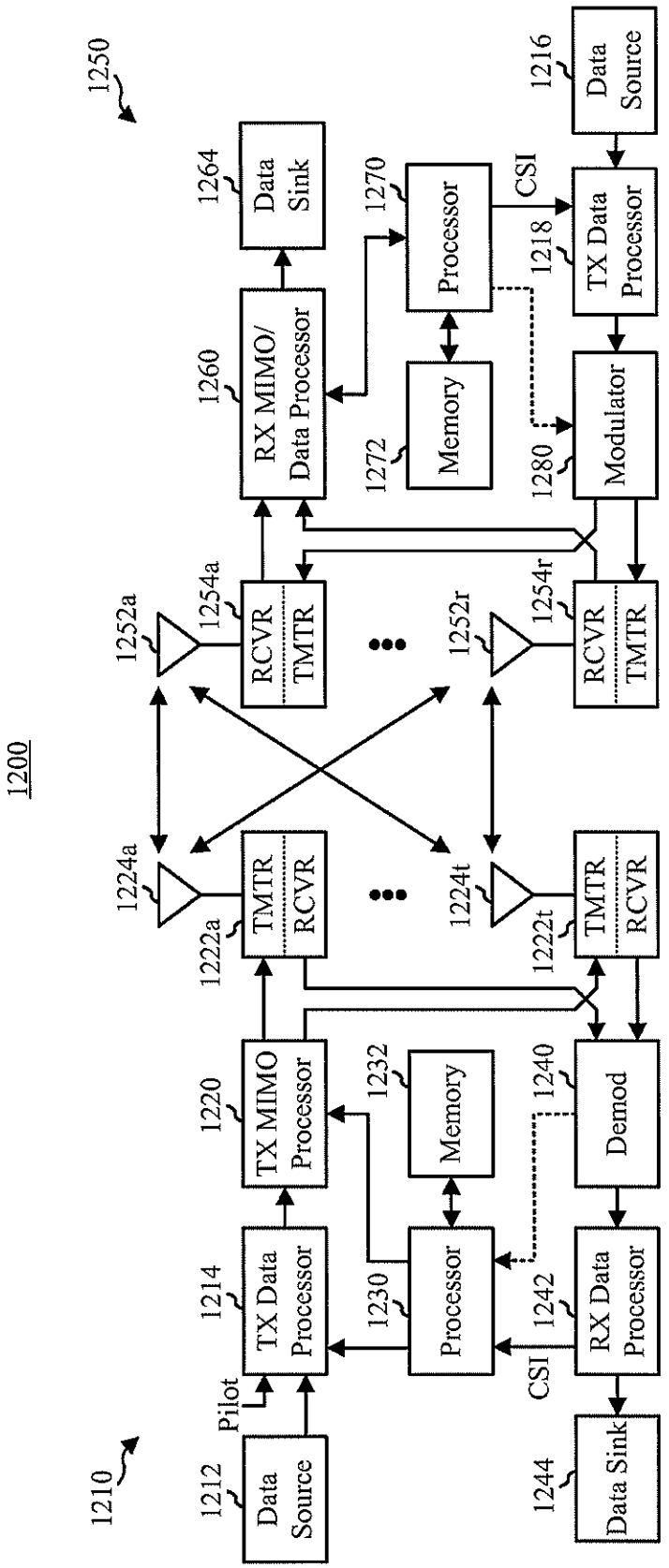

1200
1210
1212
Data Source
Pilot
1214
TX Data Processor
1220
TX MIMO Processor
1222a
TMTR
RCVR
1224a
1224t
1222t
TMTR
RCVR
1230
Processor
1232
Memory
1240
Demod
1242
RX Data Processor
CSI
1244
Data Sink
1250
1252a
1254a
RCVR
TMTR
1252r
1254r
RCVR
TMTR
1260
RX MIMO/ Data Processor
1264
Data Sink
1270
Processor
1272
Memory
CSI
1216
Data Source
1218
TX Data Processor
1280
Modulator

FIG. 12

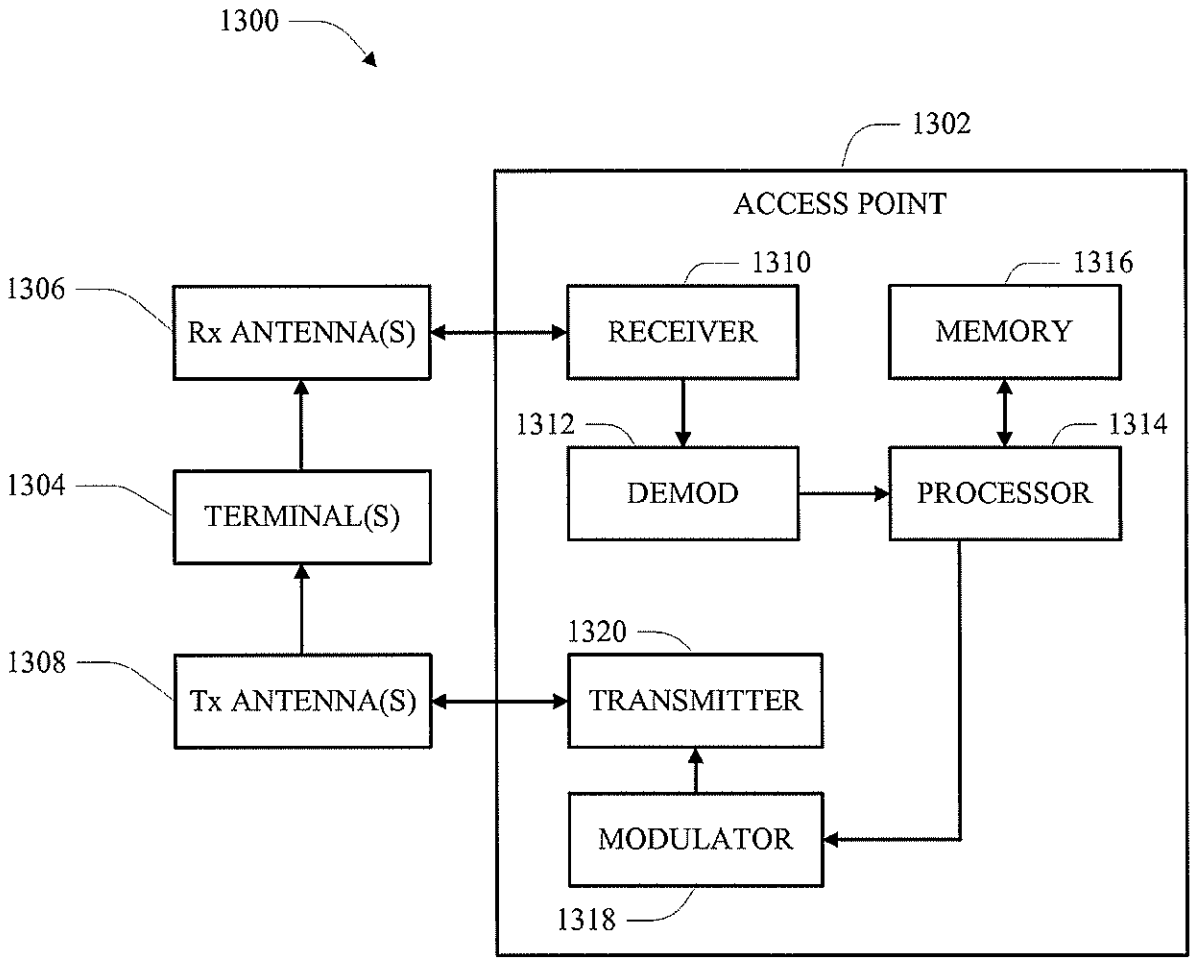

1300
1302
ACCESS POINT
1306
Rx ANTENNA(S)
1310
RECEIVER
1316
MEMORY
1312
DEMOD
1314
PROCESSOR
1304
TERMINAL(S)
1308
Tx ANTENNA(S)
1320
TRANSMITTER
MODULATOR
1318

FIG. 13

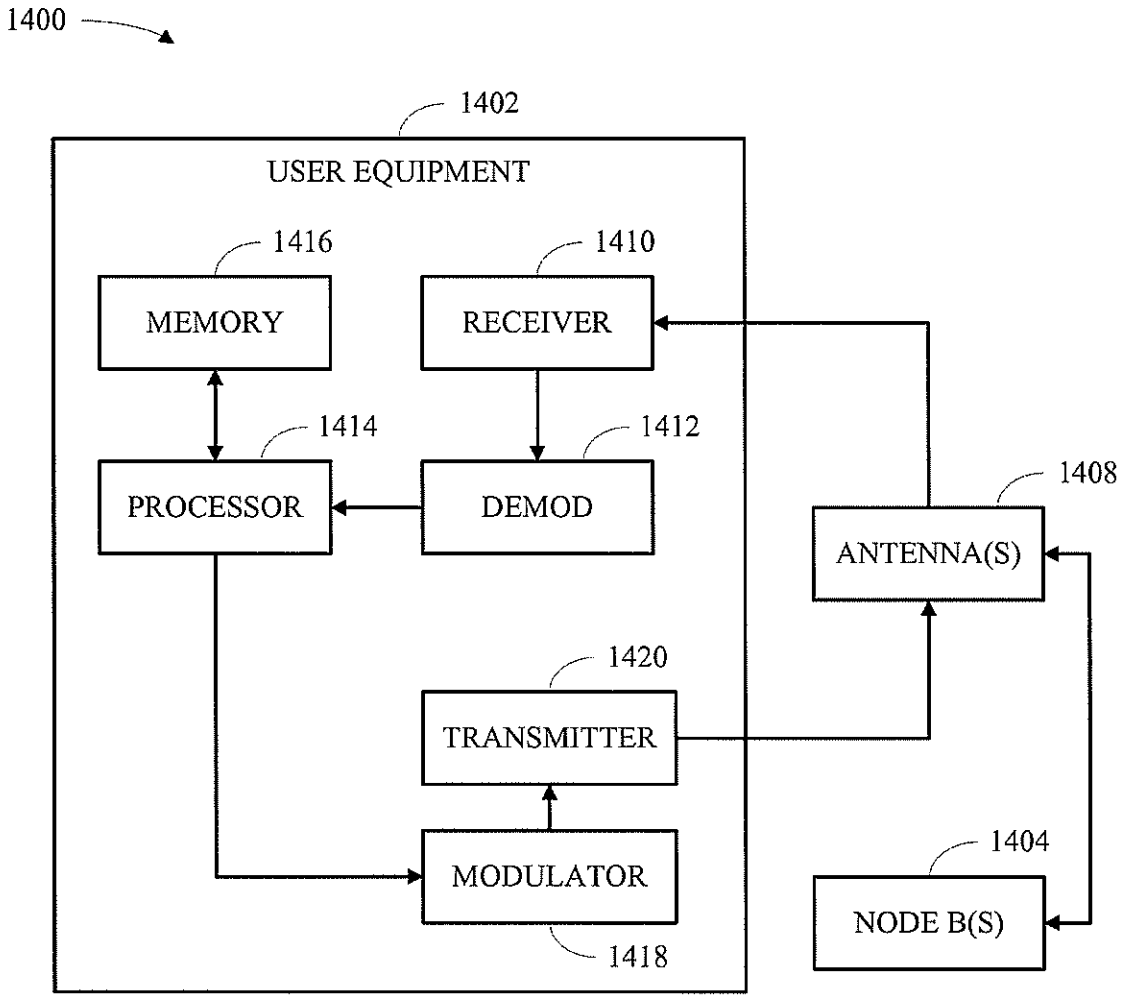

1400
1402
USER EQUIPMENT
1416
MEMORY
1410
RECEIVER
1414
PROCESSOR
1412
DEMOD
1408
ANTENNA(S)
1420
TRANSMITTER
MODULATOR
1418
1404
NODE B(S)

FIG. 14

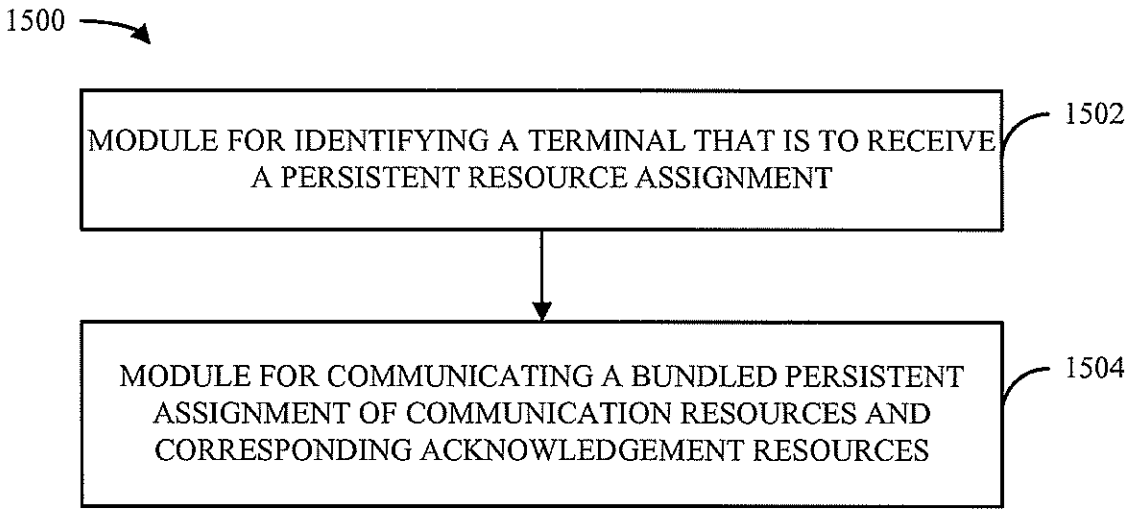

1500
MODULE FOR IDENTIFYING A TERMINAL THAT IS TO RECEIVE A PERSISTENT RESOURCE ASSIGNMENT
1502
MODULE FOR COMMUNICATING A BUNDLED PERSISTENT ASSIGNMENT OF COMMUNICATION RESOURCES AND CORRESPONDING ACKNOWLEDGEMENT RESOURCES
1504

FIG. 15

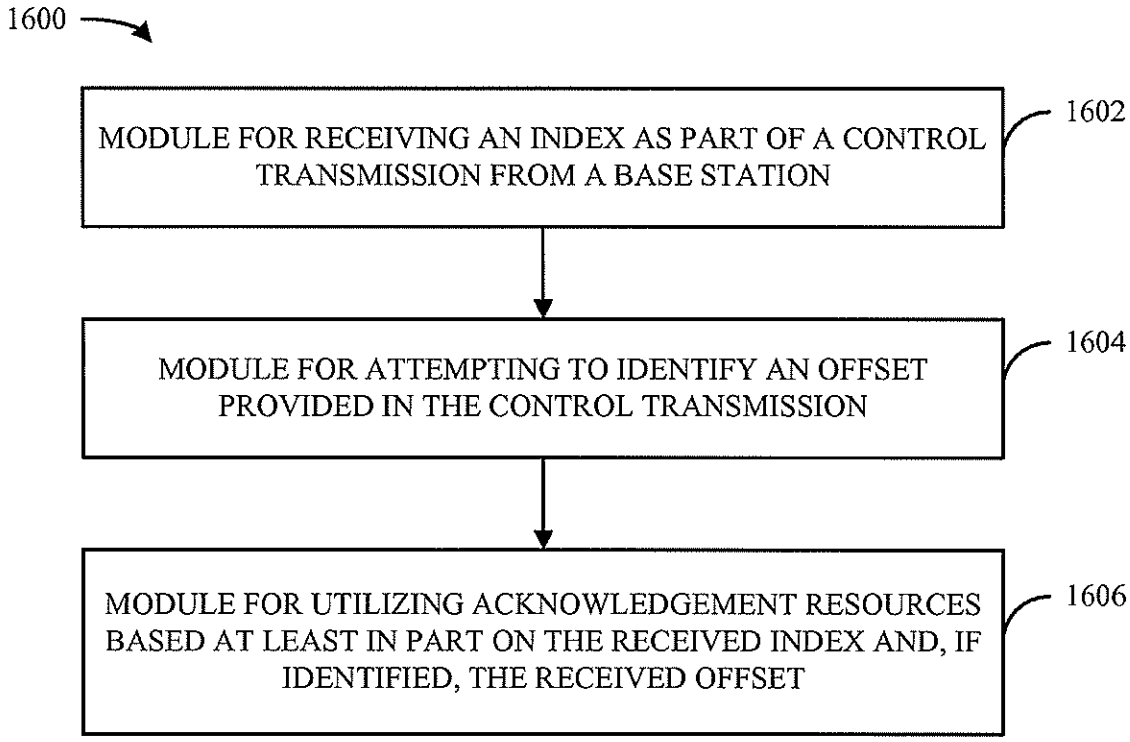

1600
MODULE FOR RECEIVING AN INDEX AS PART OF A CONTROL TRANSMISSION FROM A BASE STATION
1602
MODULE FOR ATTEMPTING TO IDENTIFY AN OFFSET PROVIDED IN THE CONTROL TRANSMISSION
1604
MODULE FOR UTILIZING ACKNOWLEDGEMENT RESOURCES BASED AT LEAST IN PART ON THE RECEIVED INDEX AND, IF IDENTIFIED, THE RECEIVED OFFSET
1606

FIG. 16