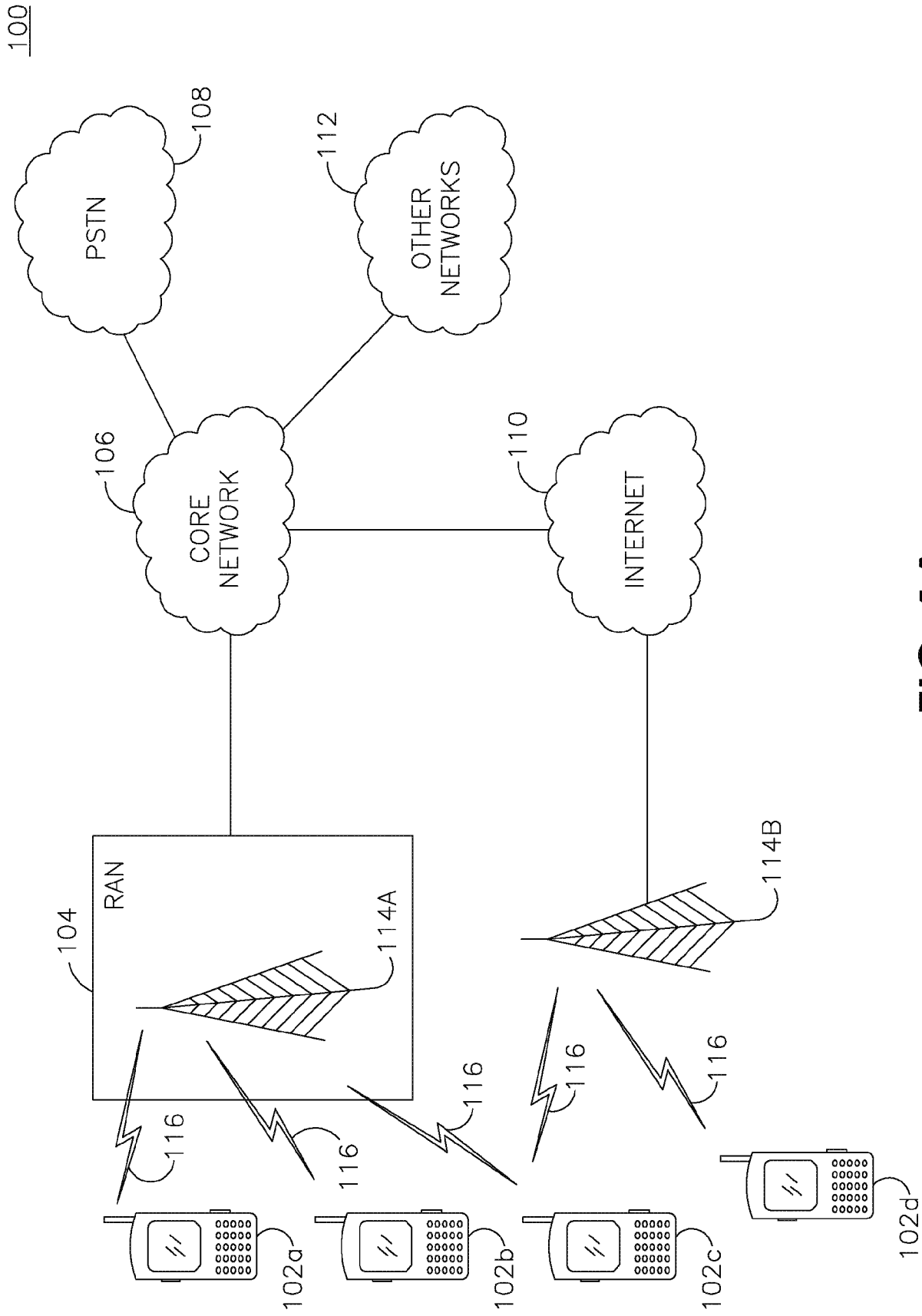

100
PSTN
108
OTHER NETWORKS
112
CORE NETWORK
106
INTERNET
110
RAN
104
114A
114B
116
116
116
116
102a
102b
102c
102d

FIG. 1A

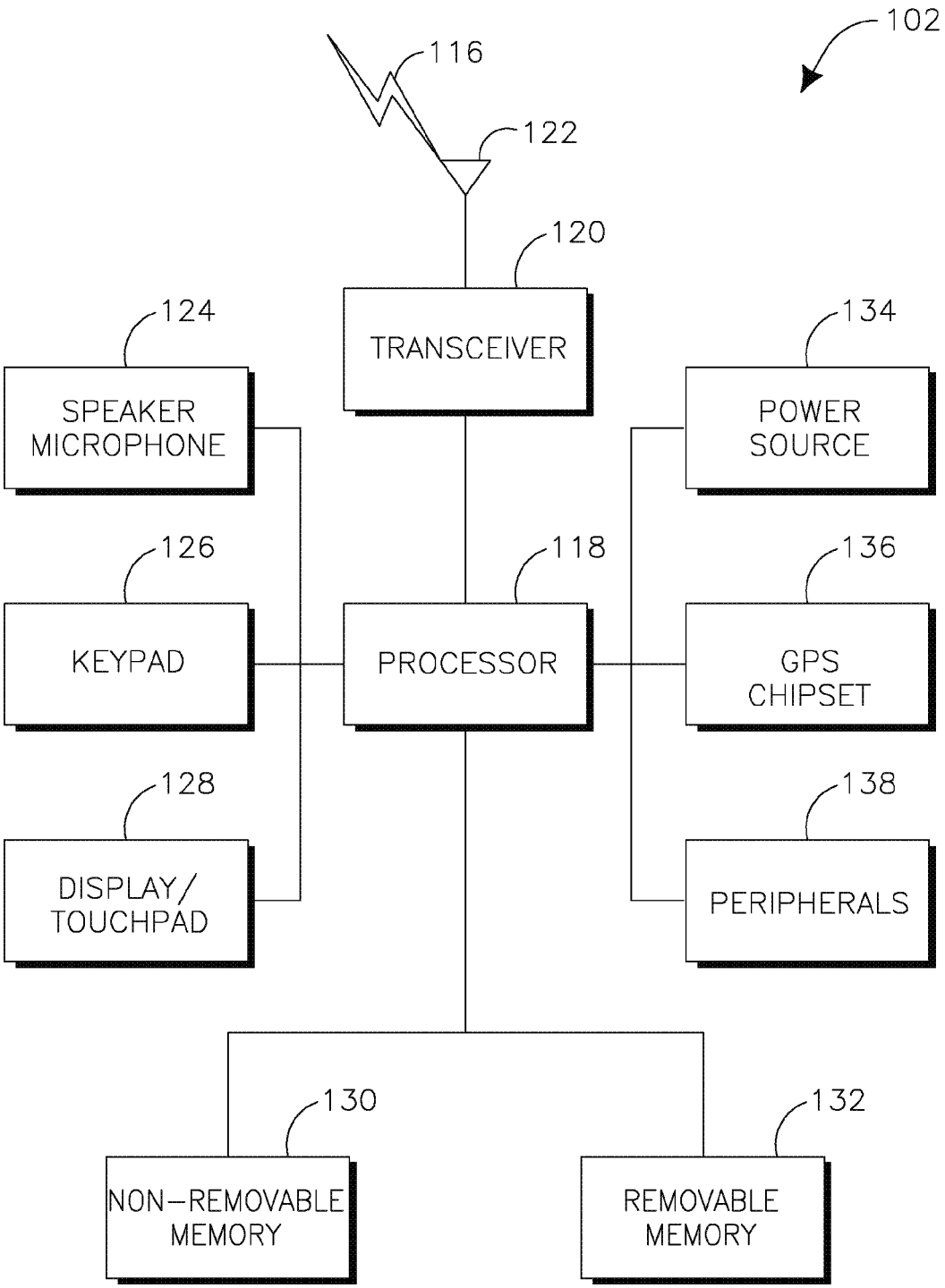

102
116
122
120
TRANSCEIVER
124
SPEAKER MICROPHONE
134
POWER SOURCE
126
KEYPAD
118
PROCESSOR
136
GPS CHIPSET
128
DISPLAY/ TOUCHPAD
138
PERIPHERALS
130
NON-REMOVABLE MEMORY
132
REMOVABLE MEMORY

FIG. 1B

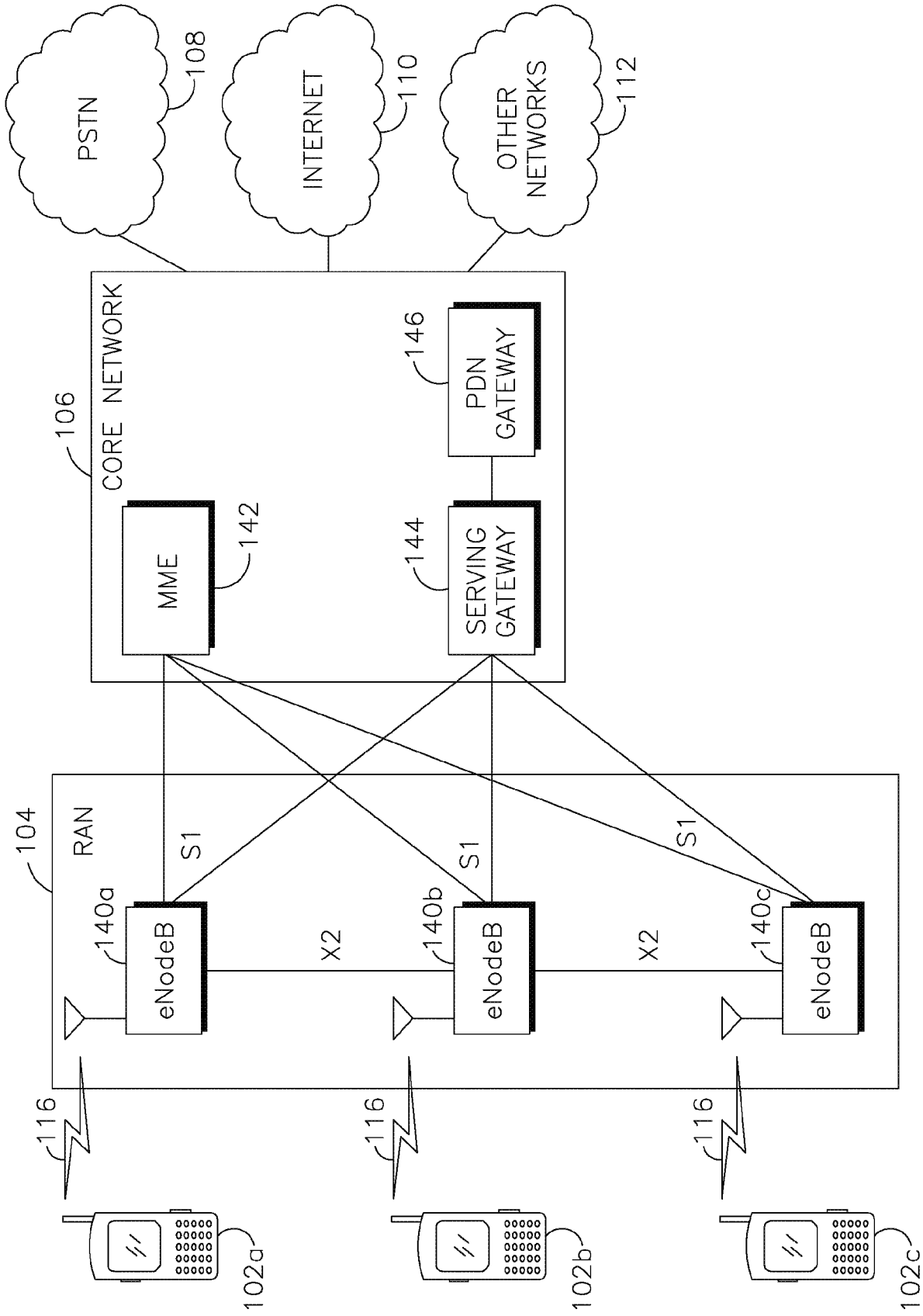

PSTN
108
INTERNET
110
OTHER NETWORKS
112
CORE NETWORK
106
PDN GATEWAY
146
MME
142
SERVING GATEWAY
144
RAN
104
S1
S1
S1
140a
eNodeB
X2
140b
eNodeB
X2
140c
eNodeB
116
116
116
102a
102b
102c

FIG. 1C

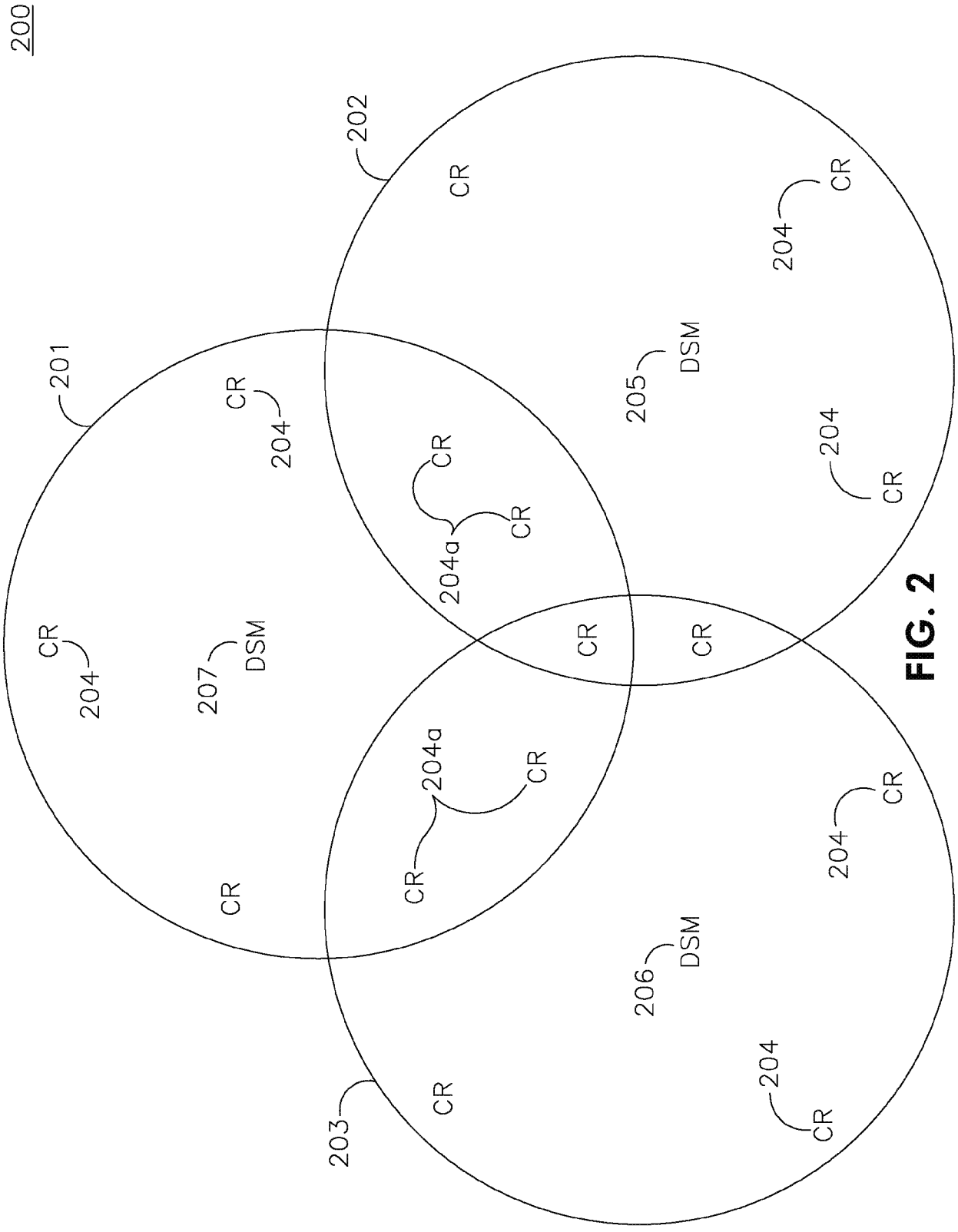


FIG. 2

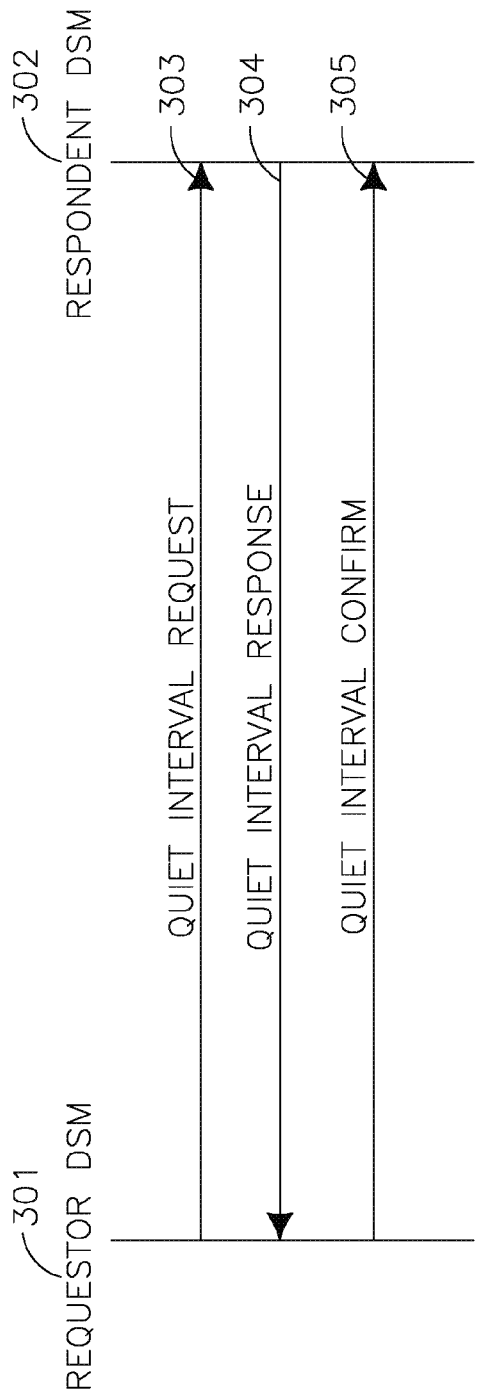

302
RESPONDENT DSM
303
304
305
QUIET INTERVAL REQUEST
QUIET INTERVAL RESPONSE
QUIET INTERVAL CONFIRM
301
REQUESTOR DSM

FIG. 3

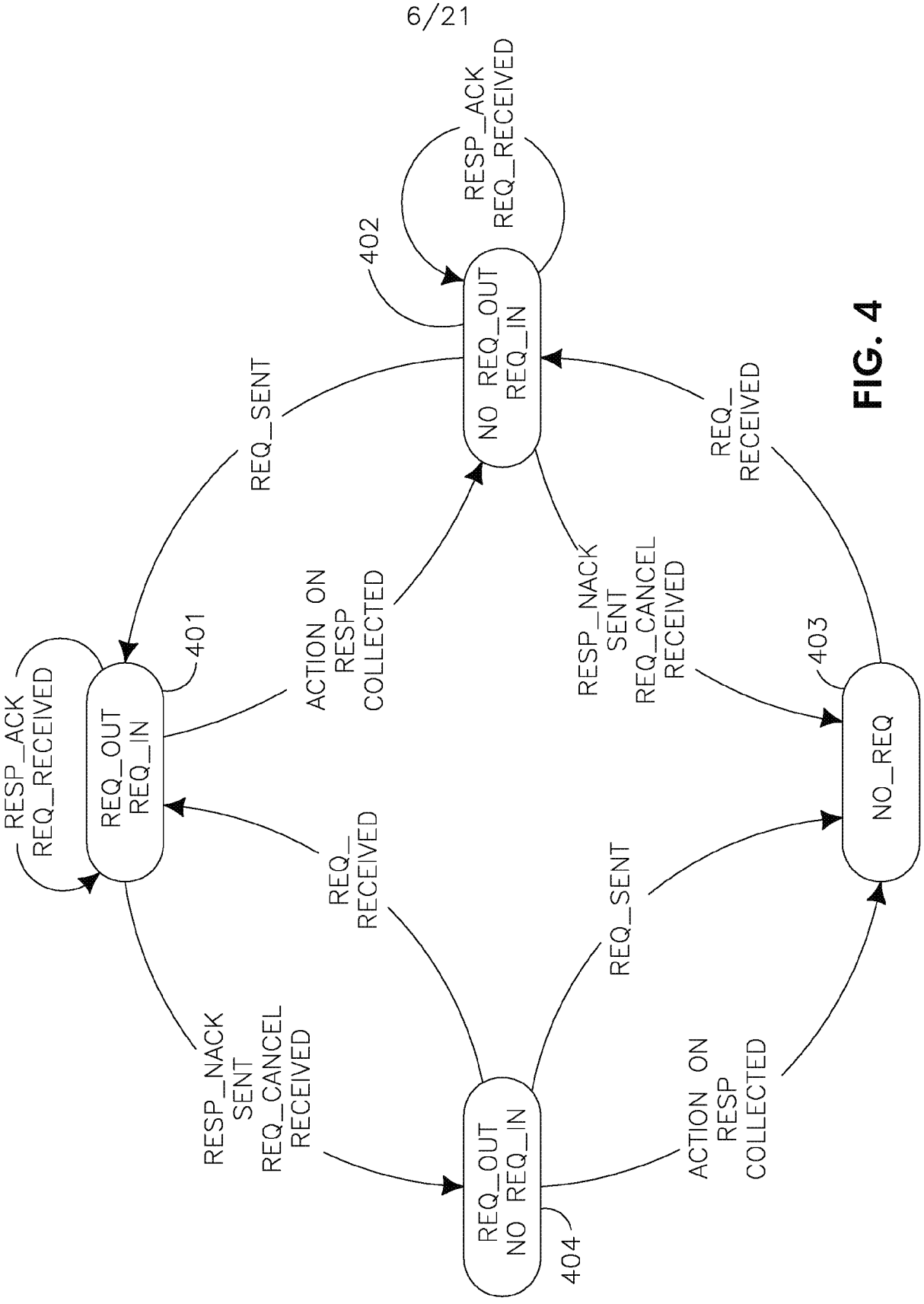

REQ_OUT
REQ_IN
401
NO REQ_OUT
REQ_IN
402
REQ_OUT
NO REQ_IN
404
NO_REQ
403
RESP_ACK
REQ_RECEIVED
RESP_ACK
REQ_RECEIVED
REQ_SENT
ACTION ON
RESP
COLLECTED
RESP_NACK
SENT
REQ_CANCEL
RECEIVED
REQ_
RECEIVED
REQ_SENT
RESP_NACK
SENT
REQ_CANCEL
RECEIVED
REQ_
RECEIVED
ACTION ON
RESP
COLLECTED

FIG. 4

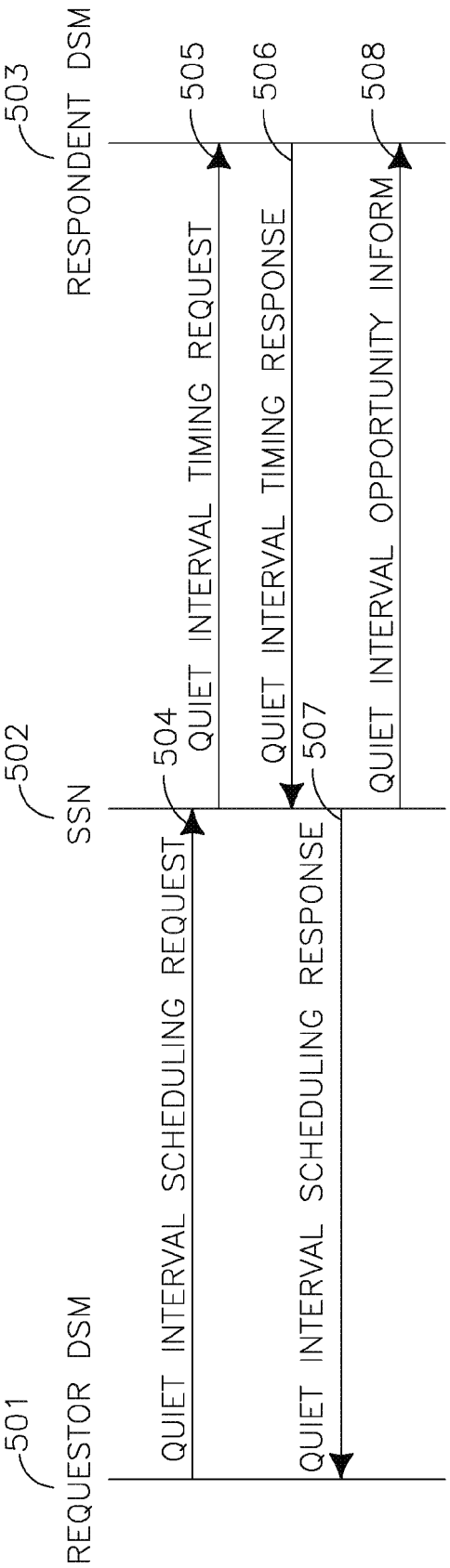

501
REQUESTOR DSM
502
SSN
503
RESPONDENT DSM
504
QUIET INTERVAL SCHEDULING REQUEST
505
QUIET INTERVAL TIMING REQUEST
506
QUIET INTERVAL TIMING RESPONSE
507
QUIET INTERVAL SCHEDULING RESPONSE
508
QUIET INTERVAL OPPORTUNITY INFORM

FIG. 5

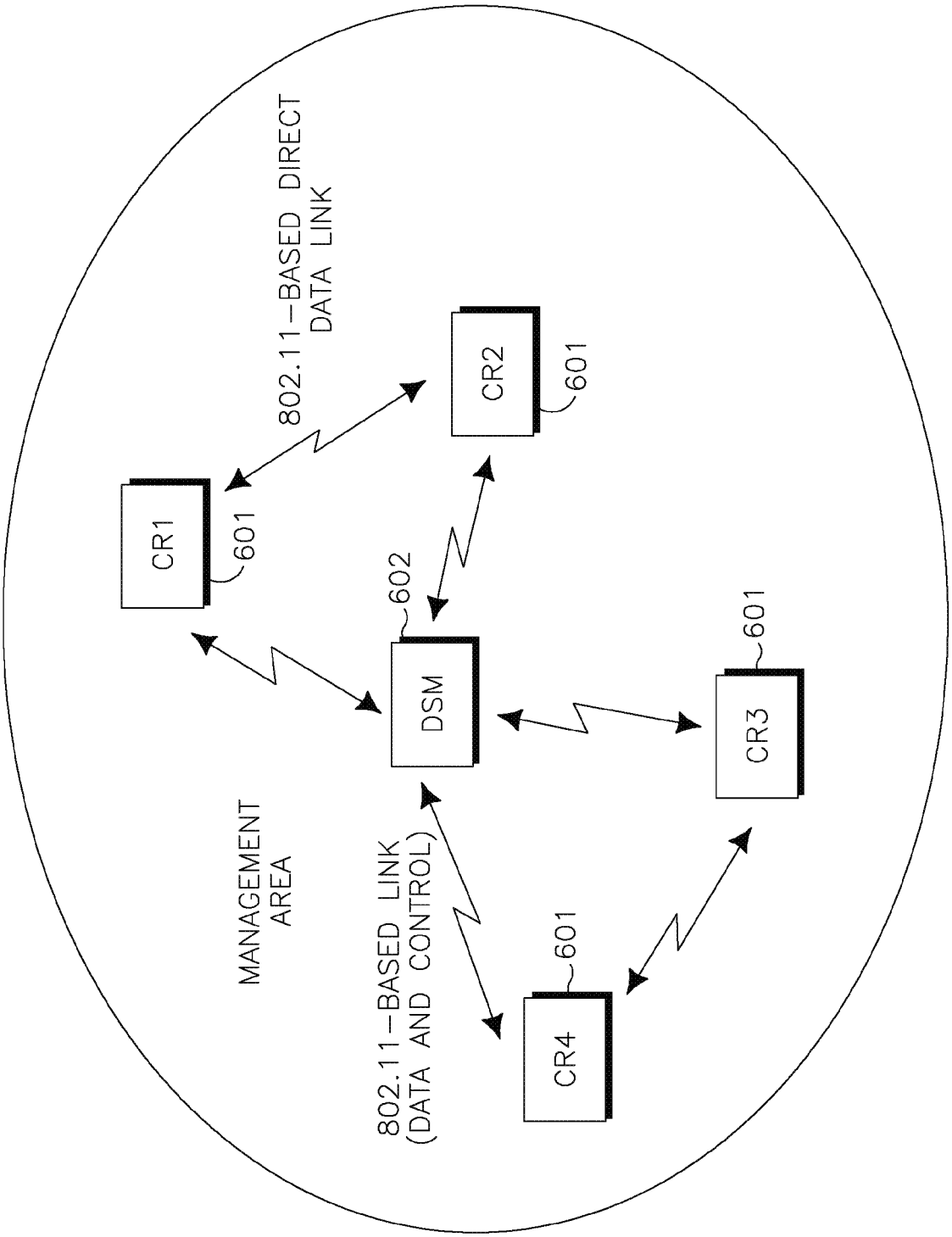

802.11-BASED DIRECT DATA LINK
CR1
601
CR2
601
602
DSM
CR3
601
MANAGEMENT AREA
802.11-BASED LINK (DATA AND CONTROL)
CR4
601

FIG. 6

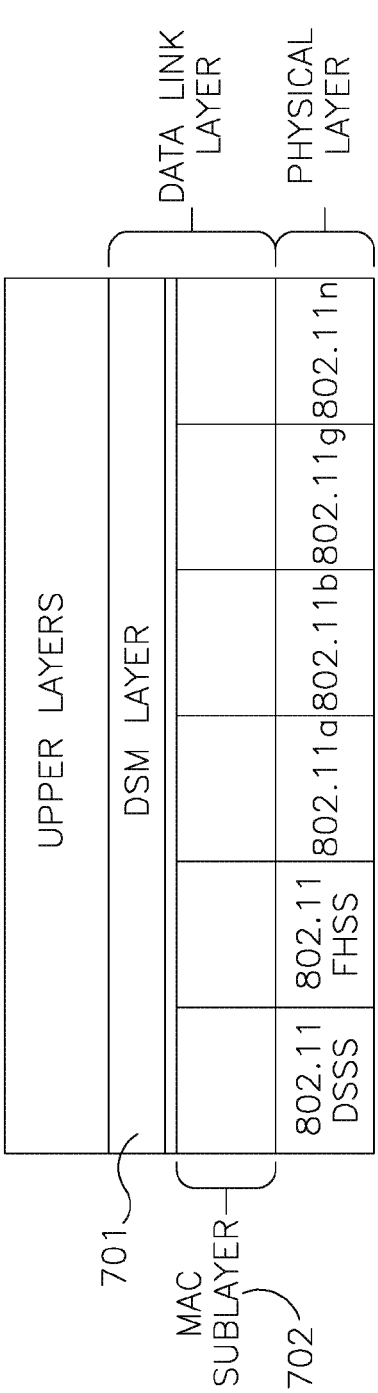

UPPER LAYERS
DSM LAYER
DATA LINK LAYER
PHYSICAL LAYER
802.11 DSSS
802.11 FHSS
802.11a
802.11b
802.11g
802.11n
701
MAC SUBLAYER
702

FIG. 7

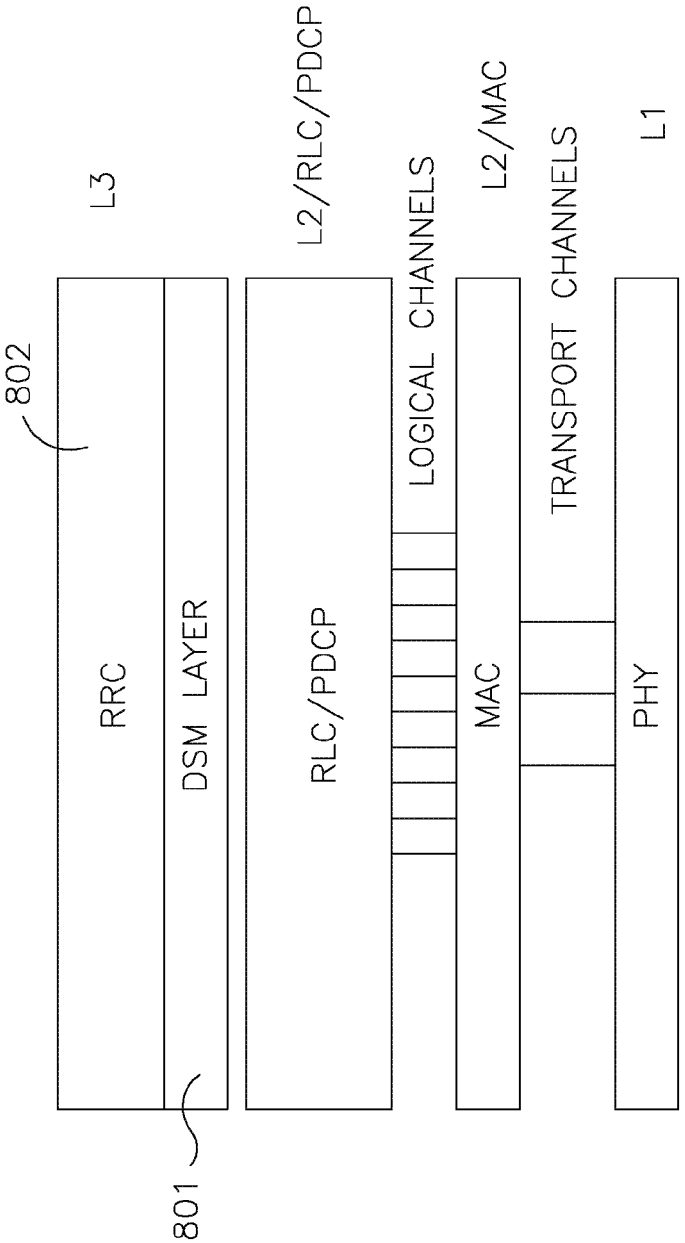

L3
L2/RLC/PDCP
L2/MAC
L1
802
RRC
DSM LAYER
RLC/PDCP
MAC
PHY
LOGICAL CHANNELS
TRANSPORT CHANNELS
801

FIG. 8

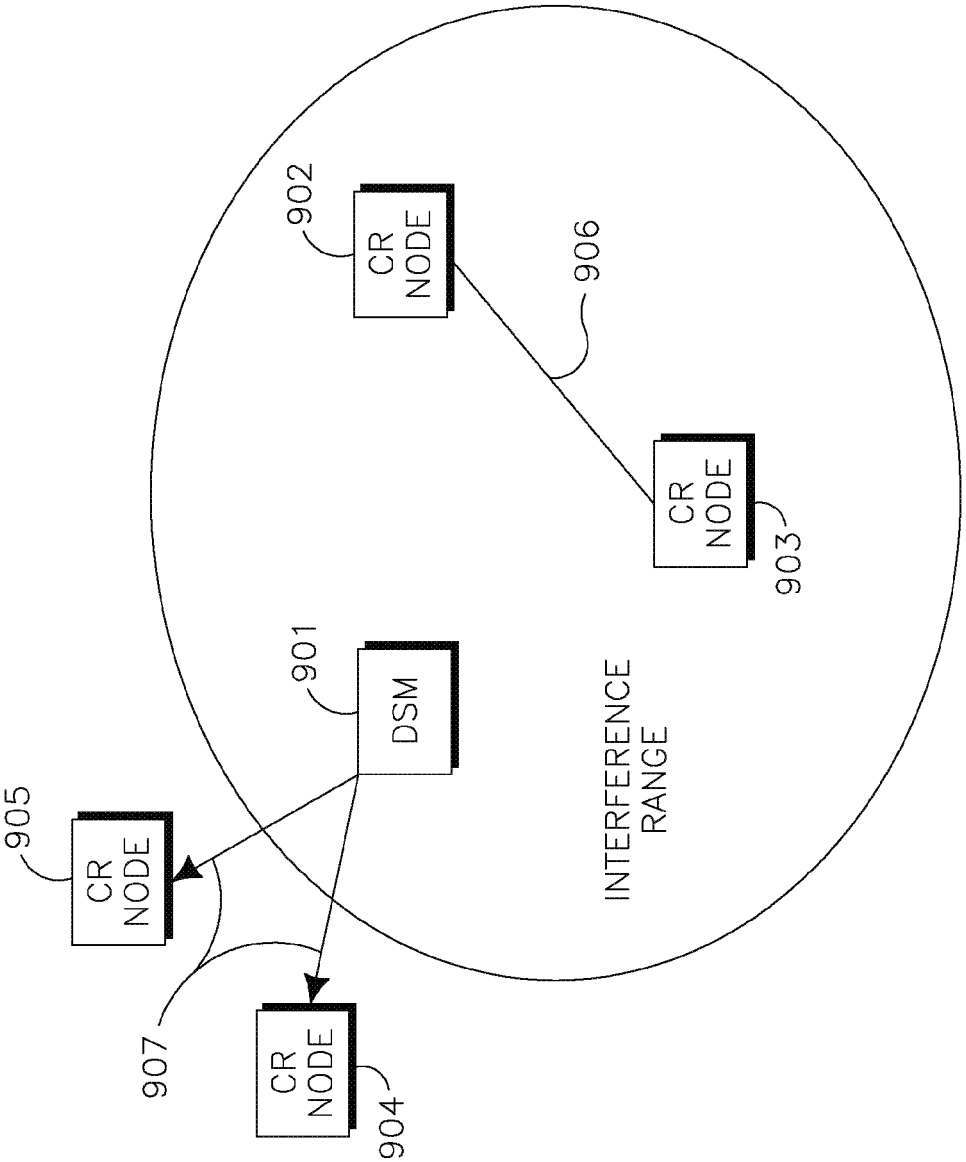

902
CR NODE
906
CR NODE
903
901
DSM
INTERFERENCE RANGE
905
CR NODE
907
CR NODE
904

FIG. 9

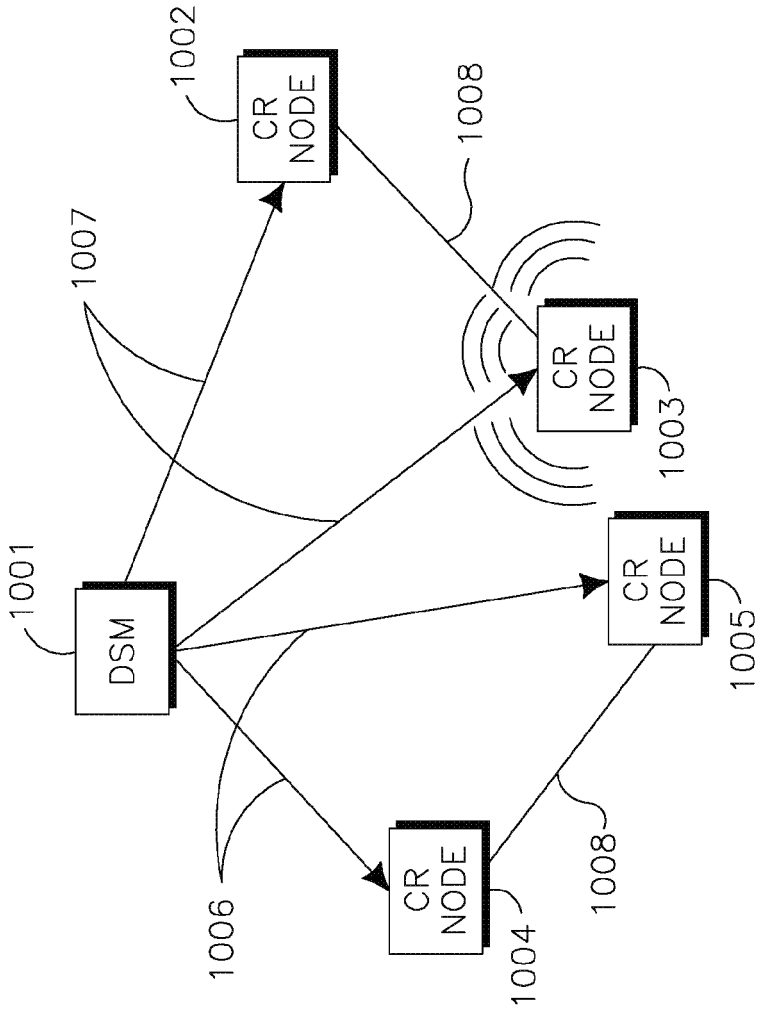

DSM
1001
CR NODE
1002
CR NODE
1003
CR NODE
1004
CR NODE
1005
1006
1007
1008
1008

FIG. 10

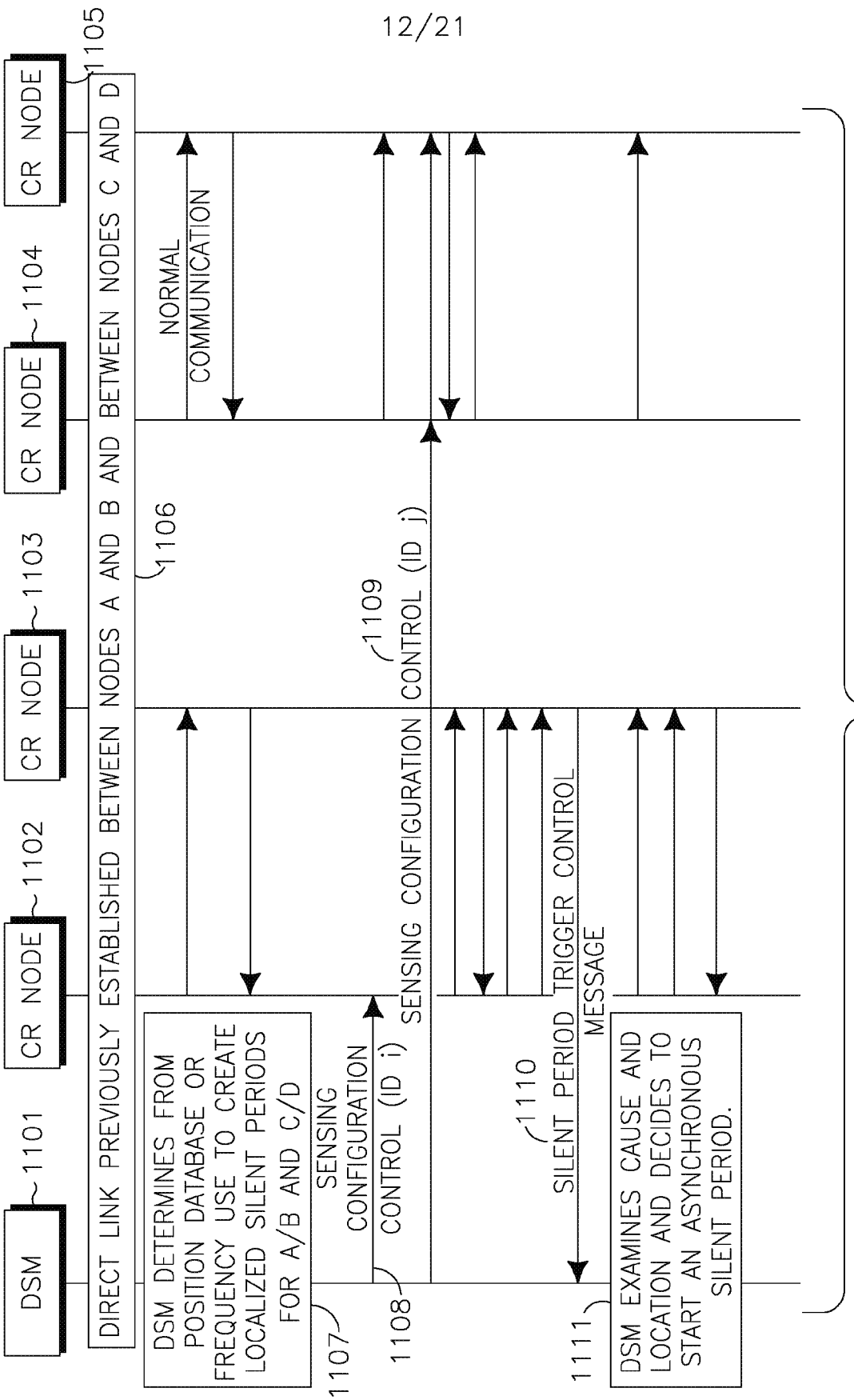

DSM
1101
CR NODE
1102
CR NODE
1103
CR NODE
1104
CR NODE
1105
DIRECT LINK PREVIOUSLY ESTABLISHED BETWEEN NODES A AND B AND BETWEEN NODES C AND D
1106
NORMAL COMMUNICATION
DSM DETERMINES FROM POSITION DATABASE OR FREQUENCY USE TO CREATE LOCALIZED SILENT PERIODS FOR A/B AND C/D
1107
SENSING CONFIGURATION CONTROL (ID i)
1108
SENSING CONFIGURATION CONTROL (ID j)
1109
SILENT PERIOD TRIGGER CONTROL MESSAGE
1110
DSM EXAMINES CAUSE AND LOCATION AND DECIDES TO START AN ASYNCHRONOUS SILENT PERIOD.
1111
CONTINUED ON FIG. 11B

FIG. 11A

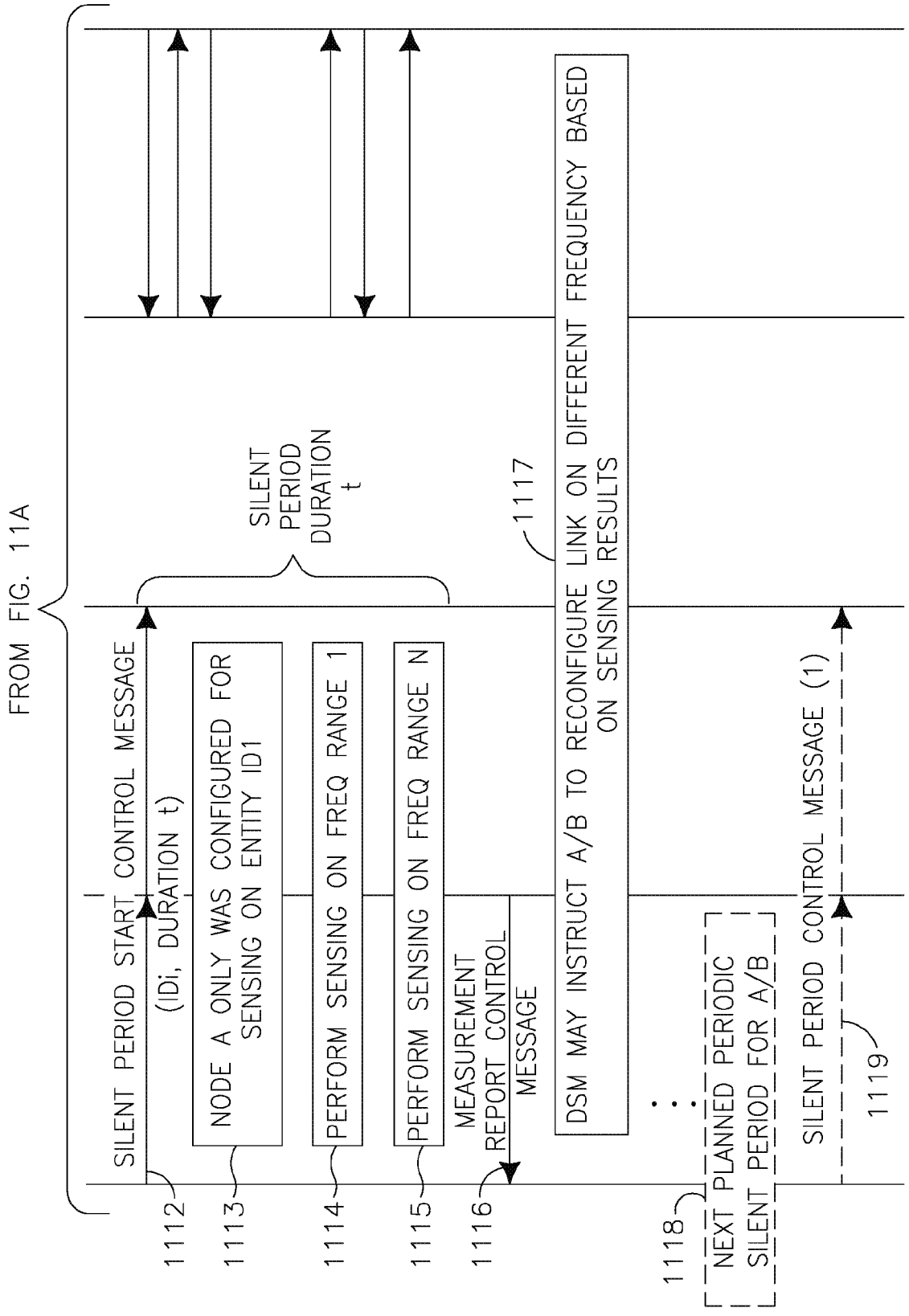

FROM FIG. 11A
SILENT PERIOD START CONTROL MESSAGE
(IDi, DURATION t)
NODE A ONLY WAS CONFIGURED FOR SENSING ON ENTITY ID1
PERFORM SENSING ON FREQ RANGE 1
PERFORM SENSING ON FREQ RANGE N
MEASUREMENT REPORT CONTROL MESSAGE
SILENT PERIOD DURATION t
1117
DSM MAY INSTRUCT A/B TO RECONFIGURE LINK ON DIFFERENT FREQUENCY BASED ON SENSING RESULTS
NEXT PLANNED PERIODIC SILENT PERIOD FOR A/B
SILENT PERIOD CONTROL MESSAGE (1)
1112
1113
1114
1115
1116
1118
1119

FIG. 11B

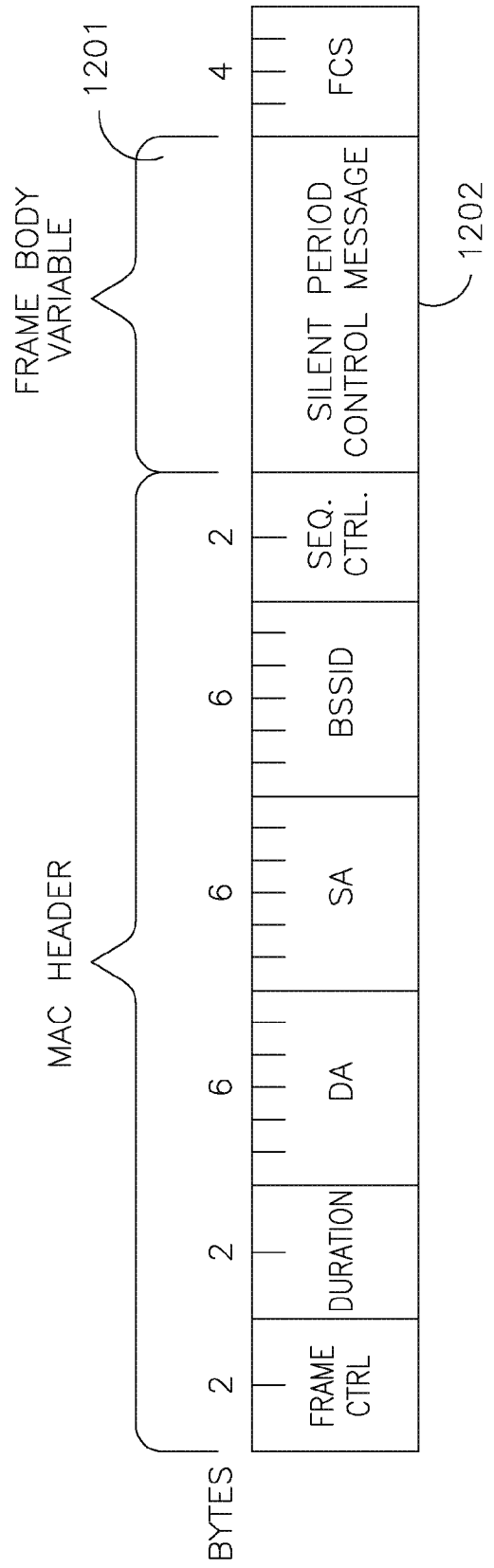

1201
1202
FRAME BODY VARIABLE
MAC HEADER
BYTES
2
2
6
6
6
2
4
FRAME CTRL
DURATION
DA
SA
BSSID
SEQ. CTRL.
SILENT PERIOD CONTROL MESSAGE
FCS

FIG. 12

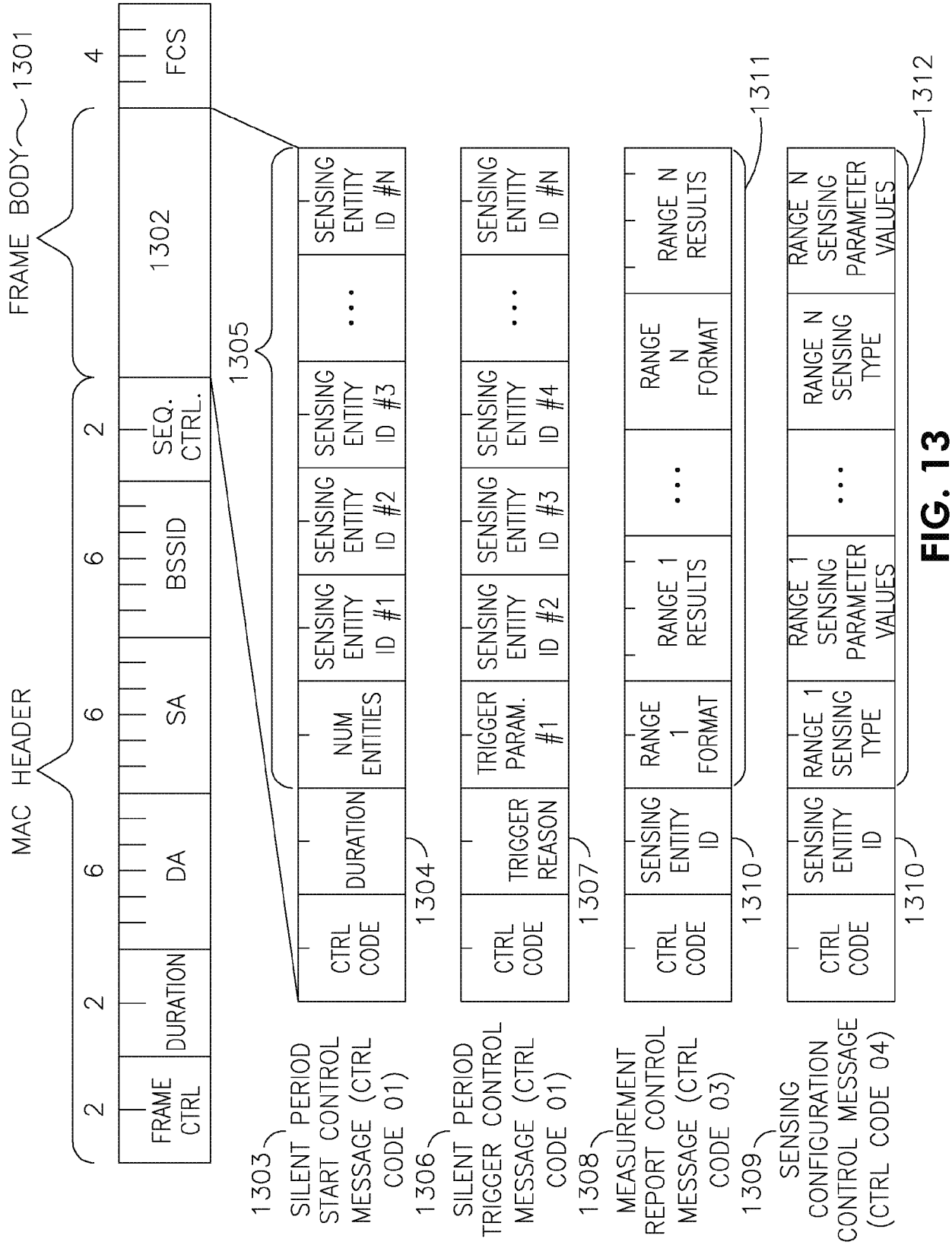

MAC HEADER
FRAME BODY 1301
2
2
6
6
6
2
4
FRAME CTRL
DURATION
DA
SA
BSSID
SEQ. CTRL.
1302
FCS
1305
CTRL CODE
DURATION
NUM ENTITIES
SENSING ENTITY ID #1
SENSING ENTITY ID #2
SENSING ENTITY ID #3
...
SENSING ENTITY ID #N
1303
SILENT PERIOD START CONTROL MESSAGE (CTRL CODE 01)
1304
CTRL CODE
TRIGGER REASON
TRIGGER PARAM. #1
SENSING ENTITY ID #2
SENSING ENTITY ID #3
SENSING ENTITY ID #4
...
SENSING ENTITY ID #N
1306
SILENT PERIOD TRIGGER CONTROL MESSAGE (CTRL CODE 01)
1307
CTRL CODE
SENSING ENTITY ID
RANGE 1 FORMAT
RANGE 1 RESULTS
...
RANGE N FORMAT
RANGE N RESULTS
1308
MEASUREMENT REPORT CONTROL MESSAGE (CTRL CODE 03)
1310
1311
CTRL CODE
SENSING ENTITY ID
RANGE 1 SENSING TYPE
RANGE 1 SENSING PARAMETER VALUES
...
RANGE N SENSING TYPE
RANGE N SENSING PARAMETER VALUES
1309
SENSING CONFIGURATION CONTROL MESSAGE (CTRL CODE 04)
1310
1312

FIG. 13

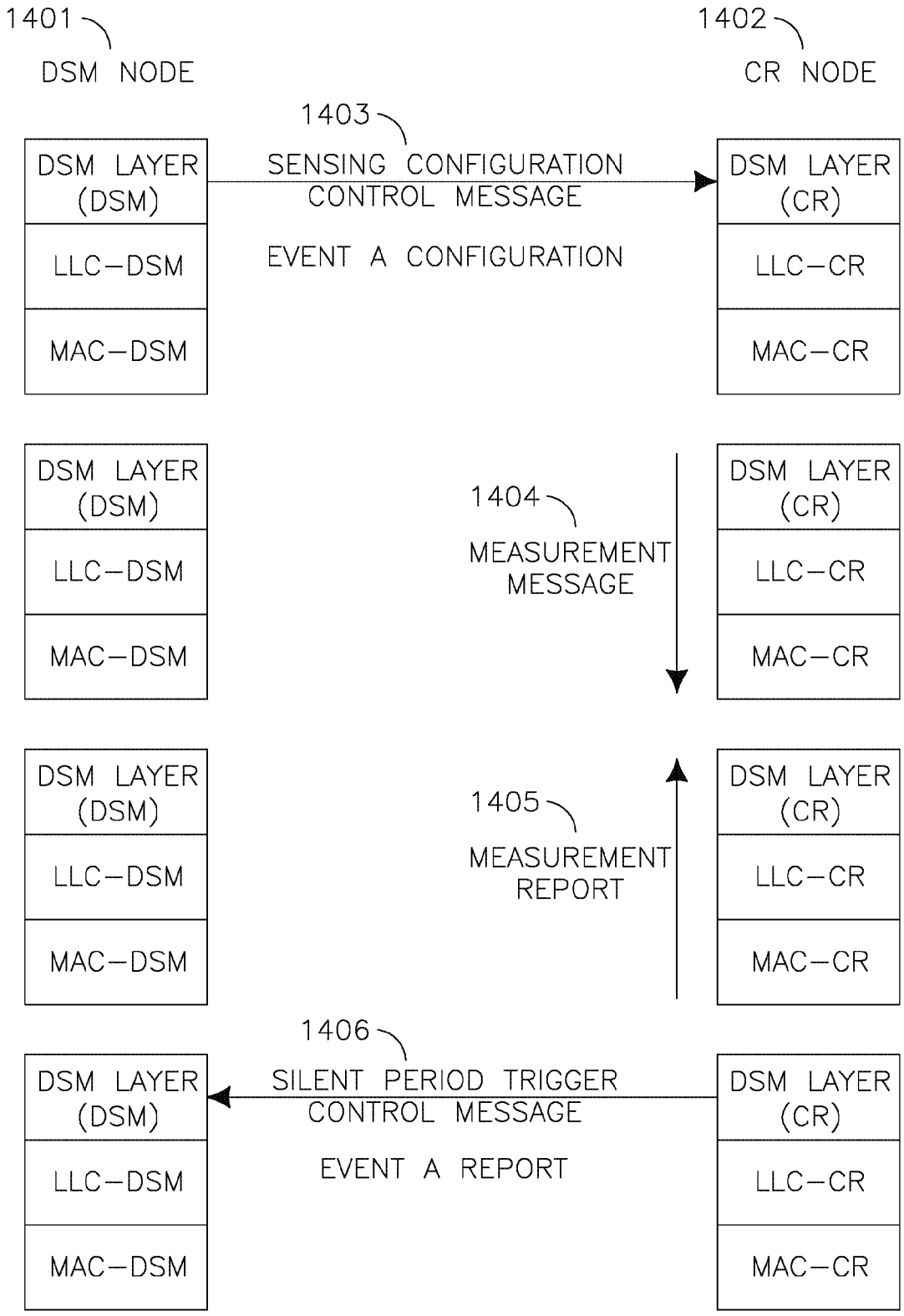

1401
DSM NODE
1402
CR NODE
1403
DSM LAYER (DSM)
LLC–DSM
MAC–DSM
SENSING CONFIGURATION CONTROL MESSAGE
EVENT A CONFIGURATION
DSM LAYER (CR)
LLC–CR
MAC–CR
1404
MEASUREMENT MESSAGE
1405
MEASUREMENT REPORT
1406
SILENT PERIOD TRIGGER CONTROL MESSAGE
EVENT A REPORT

FIG. 14

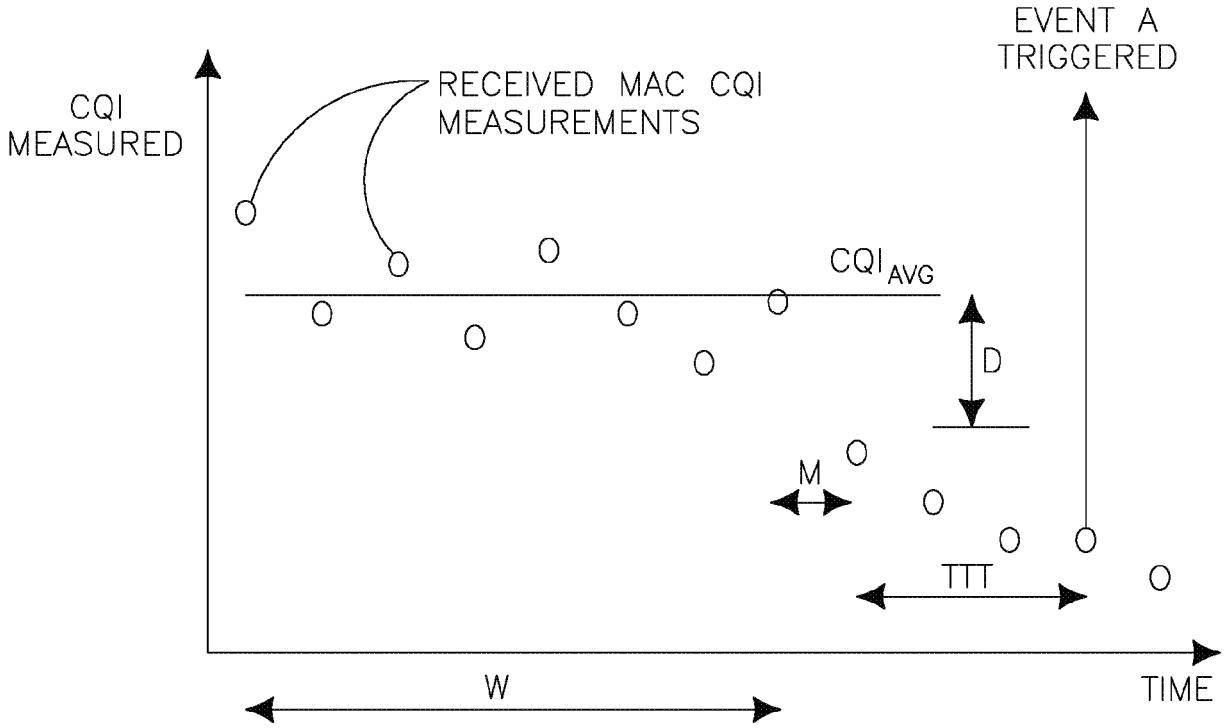

EVENT A
TRIGGERED
CQI
MEASURED
RECEIVED MAC CQI
MEASUREMENTS
CQI AVG
D
M
TTT
W
TIME

FIG. 15

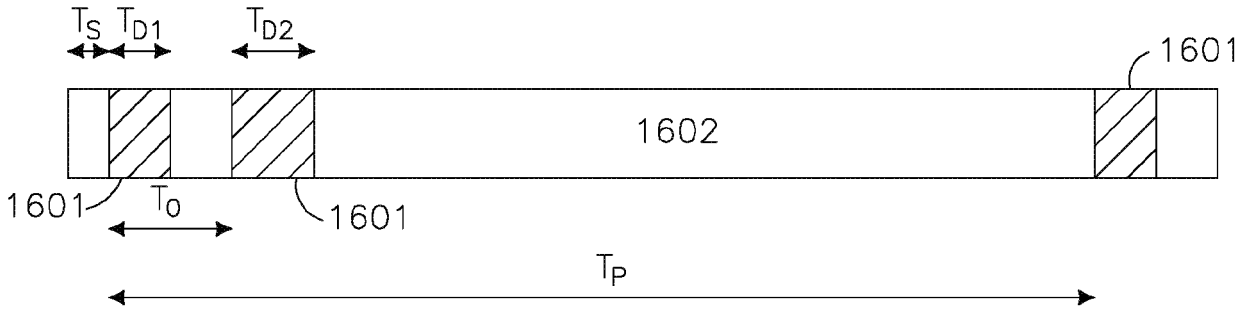

TS
TD1
TD2
1601
1602
1601
T0
1601
TP

FIG. 16

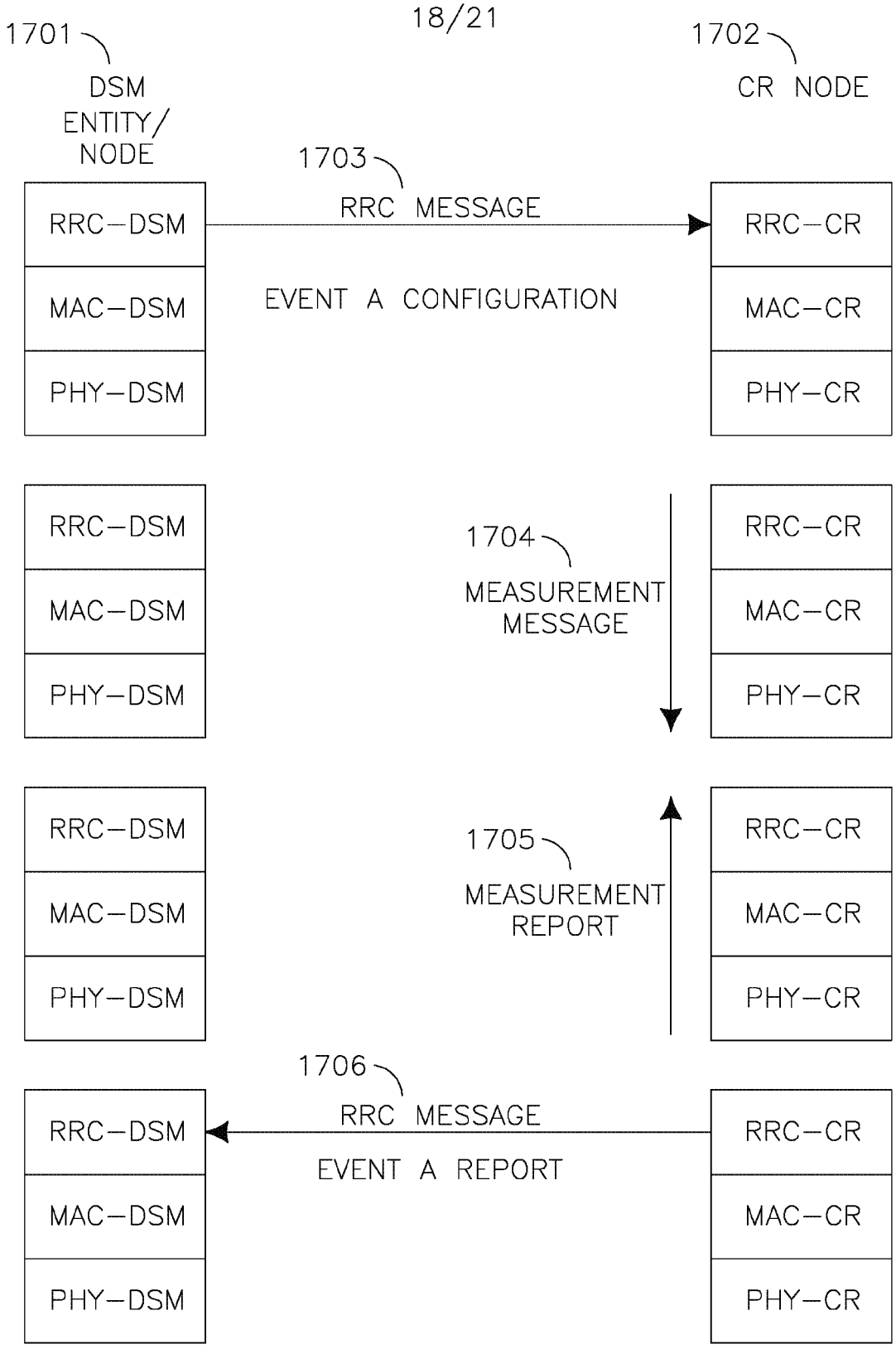

1701
DSM ENTITY/ NODE
1702
CR NODE
1703
RRC MESSAGE
EVENT A CONFIGURATION
RRC-DSM
MAC-DSM
PHY-DSM
RRC-CR
MAC-CR
PHY-CR
1704
MEASUREMENT MESSAGE
1705
MEASUREMENT REPORT
1706
RRC MESSAGE
EVENT A REPORT

FIG. 17

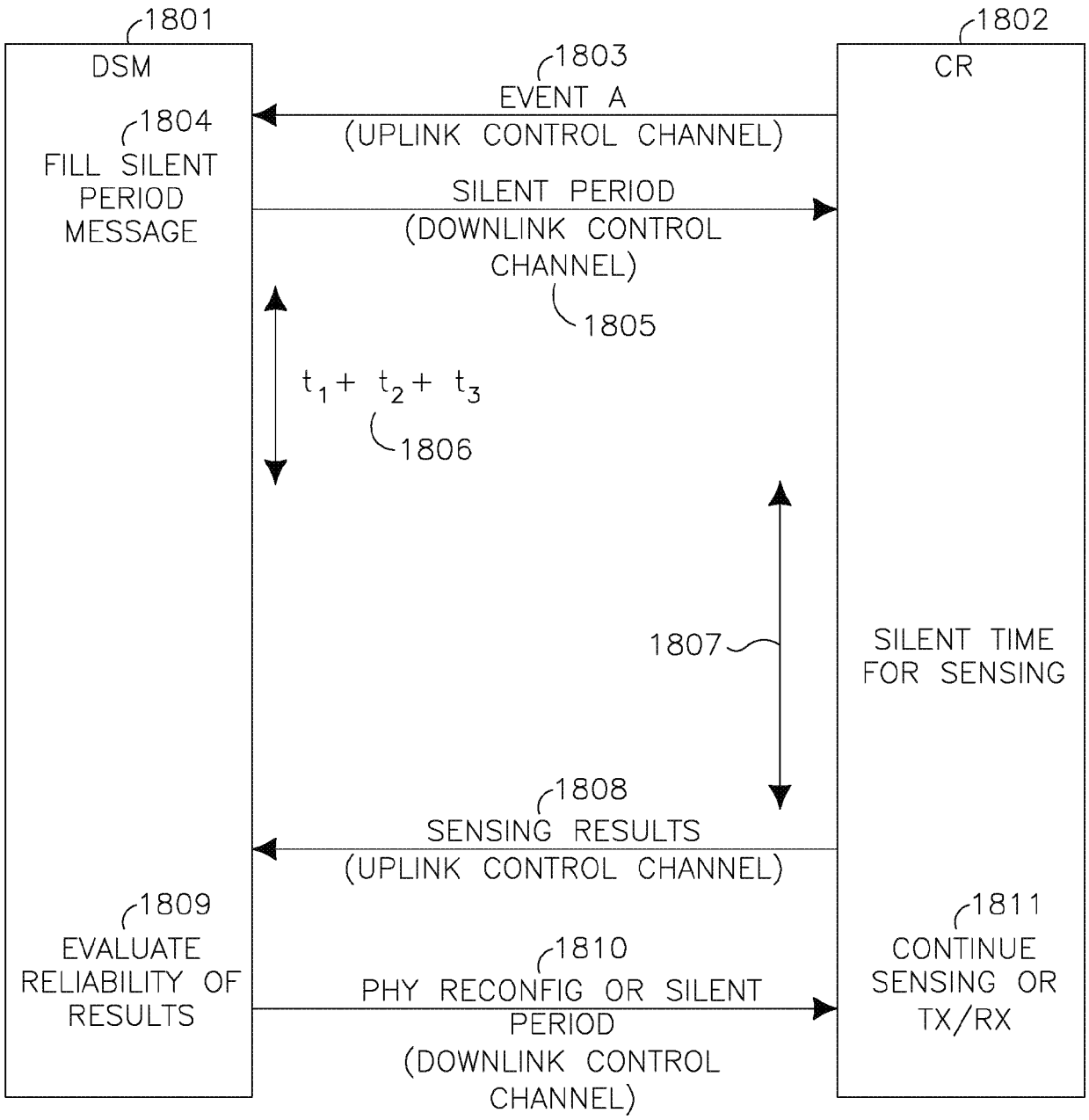

1801
DSM
1802
CR
1803
EVENT A
(UPLINK CONTROL CHANNEL)
1804
FILL SILENT PERIOD MESSAGE
SILENT PERIOD
(DOWNLINK CONTROL CHANNEL)
1805
$t_1 + t_2 + t_3$
1806
1807
SILENT TIME FOR SENSING
1808
SENSING RESULTS
(UPLINK CONTROL CHANNEL)
1809
EVALUATE RELIABILITY OF RESULTS
1810
PHY RECONFIG OR SILENT PERIOD
(DOWNLINK CONTROL CHANNEL)
1811
CONTINUE SENSING OR TX/RX

FIG. 18

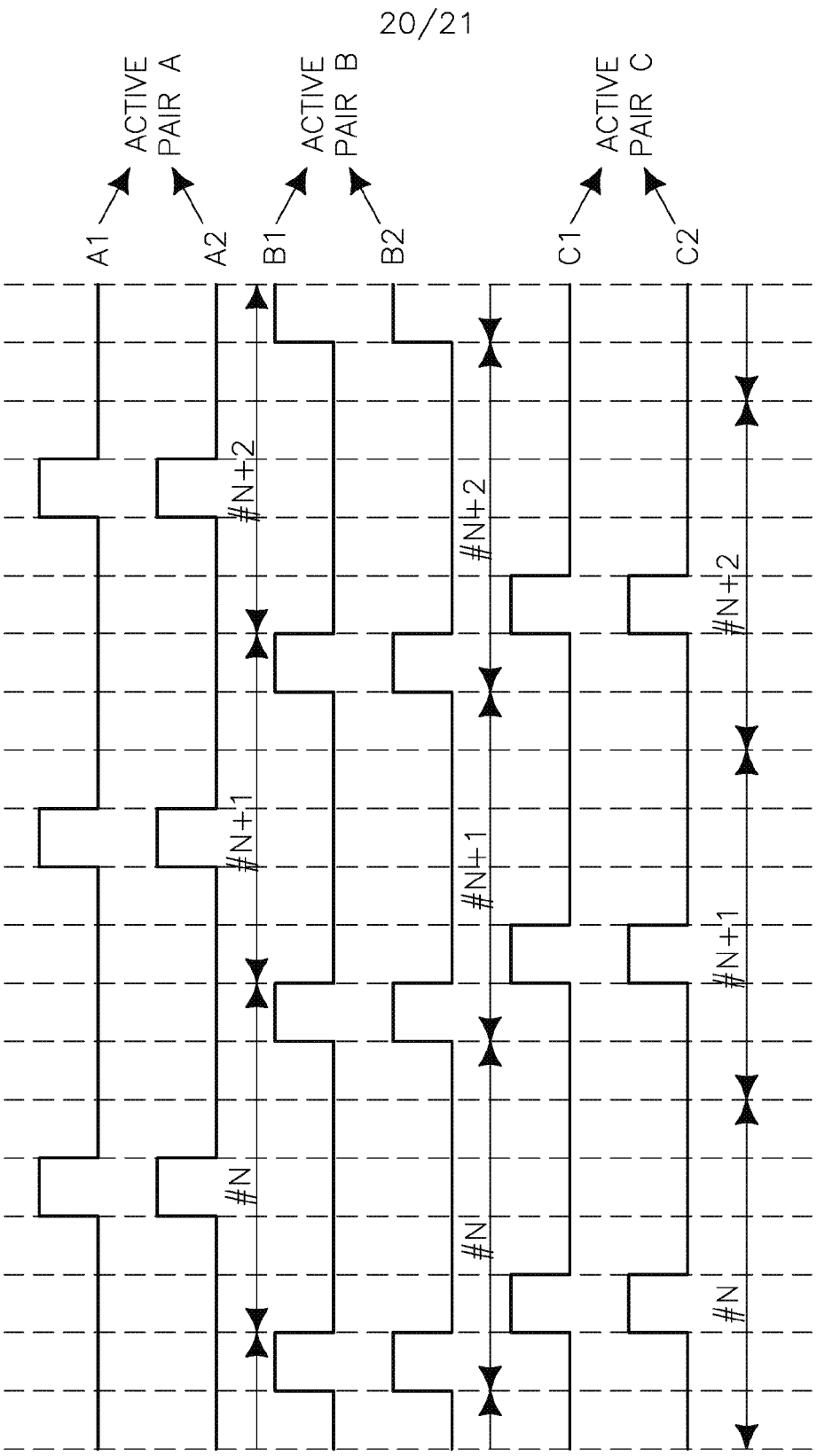

ACTIVE PAIR A
ACTIVE PAIR B
ACTIVE PAIR C
A1
A2
B1
B2
C1
C2
#N+2
#N+1
#N
#N+2
#N+1
#N
#N+2
#N+1
#N

FIG. 19

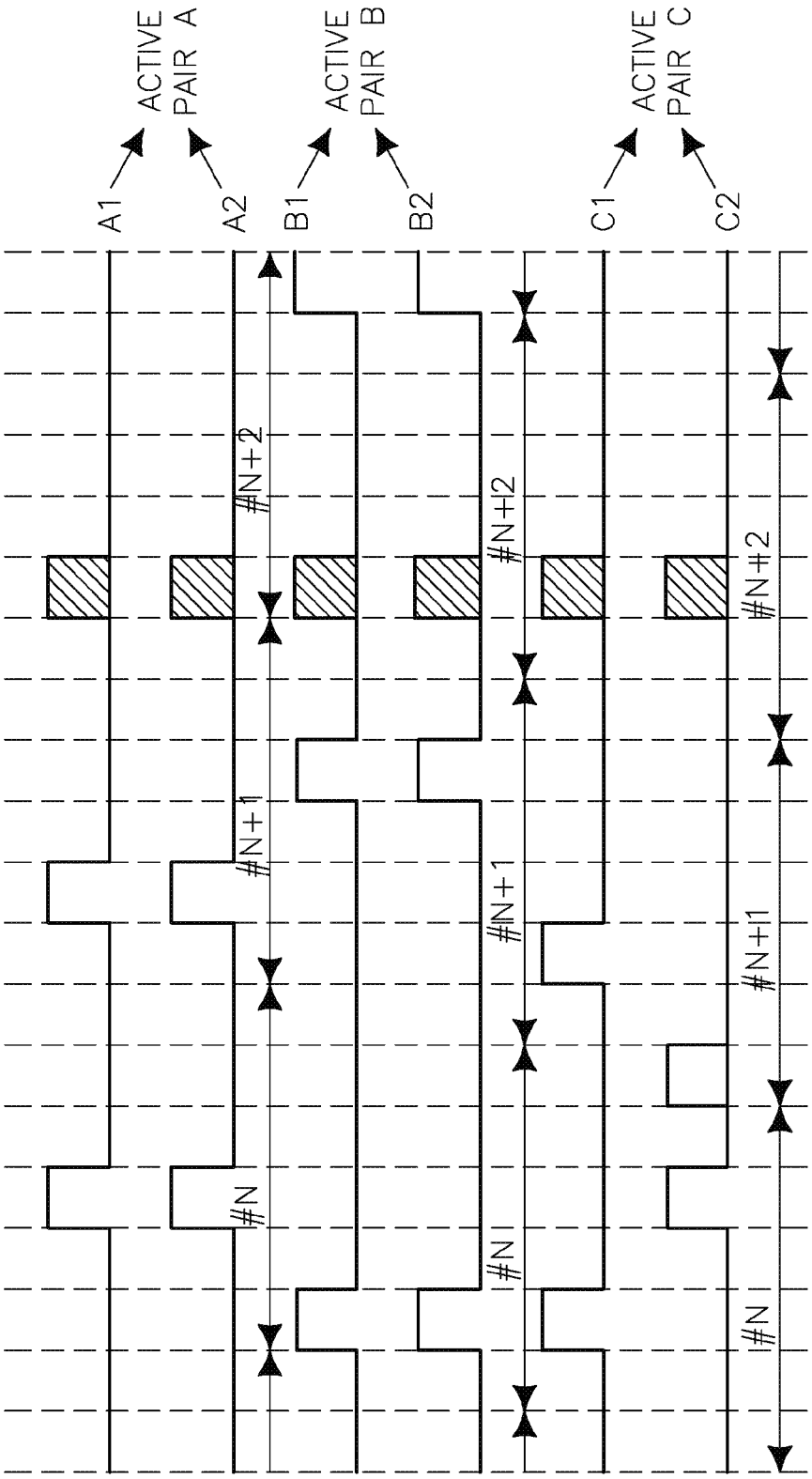

ACTIVE PAIR A
ACTIVE PAIR B
ACTIVE PAIR C
A1
A2
B1
B2
C1
C2
#N+2
#N+1
#N
#N+2
#N+1
#N
#N+2
#N+1
#N

FIG. 20