FIG. 1

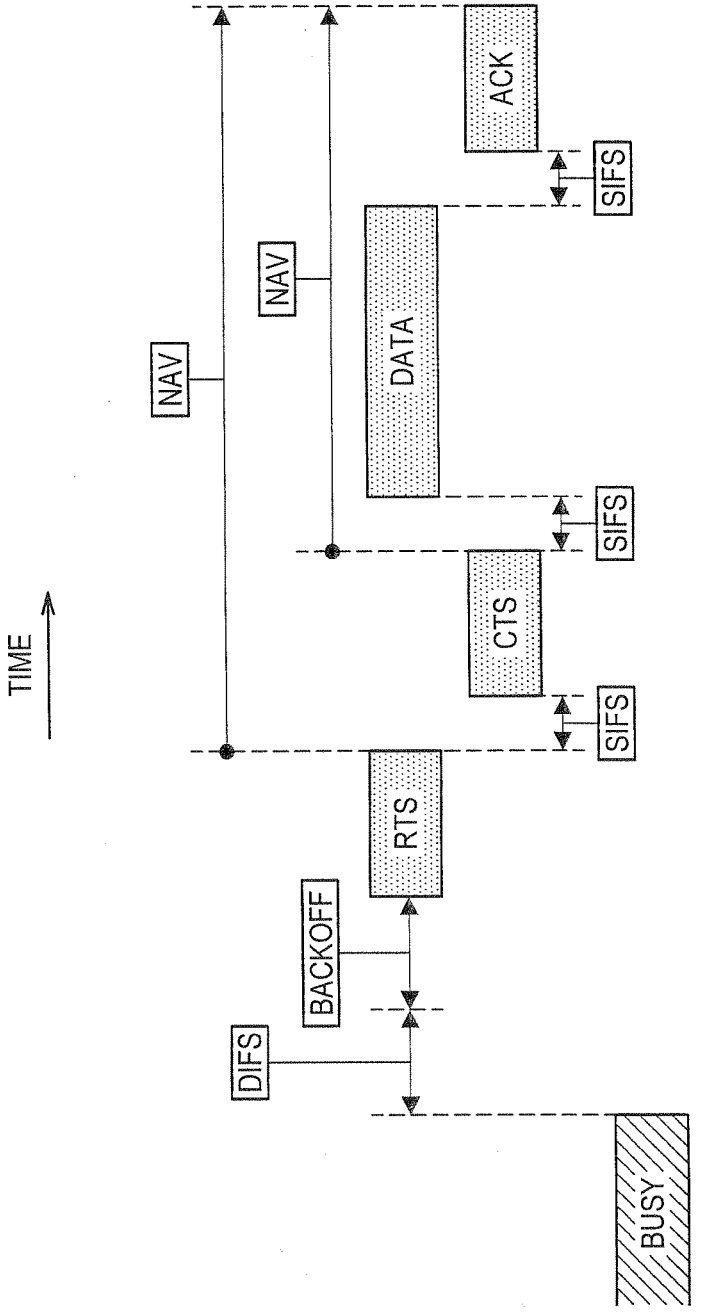

TIME
DIFS
BACKOFF
RTS
SIFS
CTS
SIFS
DATA
SIFS
ACK
NAV
NAV
BUSY

FIG. 2

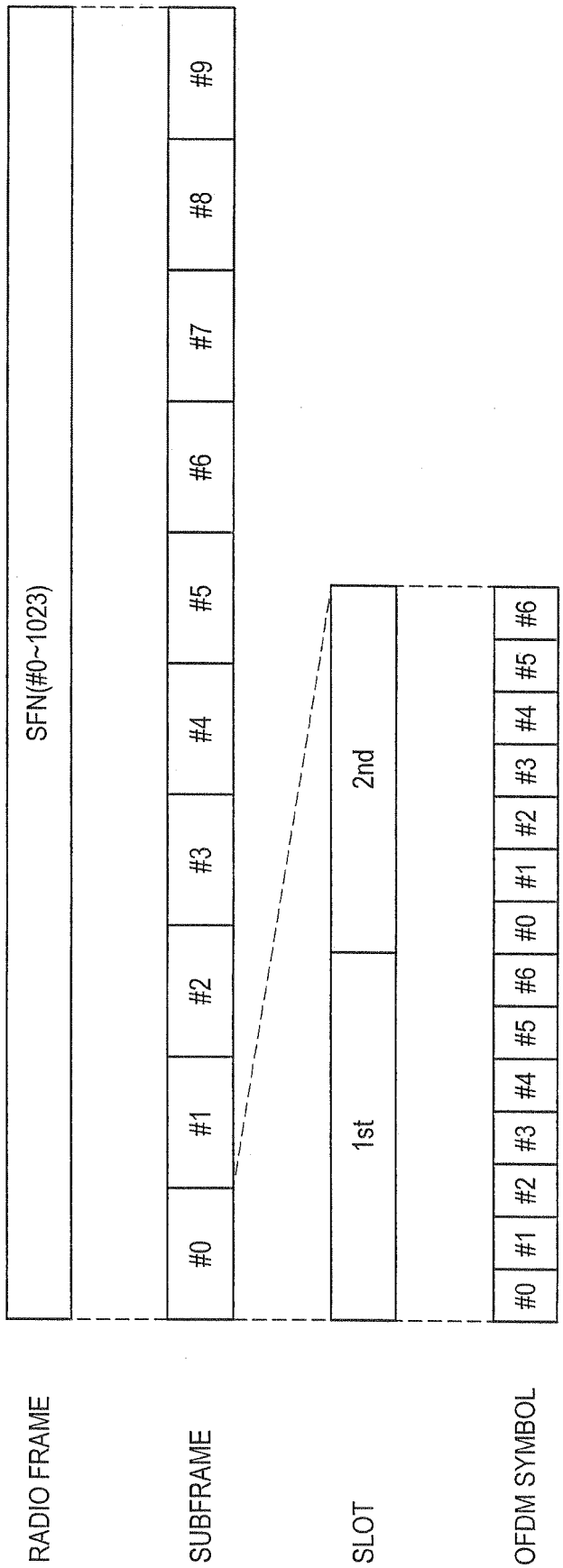

RADIO FRAME
SFN(#0~1023)
SUBFRAME
#0
#1
#2
#3
#4
#5
#6
#7
#8
#9
SLOT
1st
2nd
OFDM SYMBOL
#0
#1
#2
#3
#4
#5
#6

FIG. 3

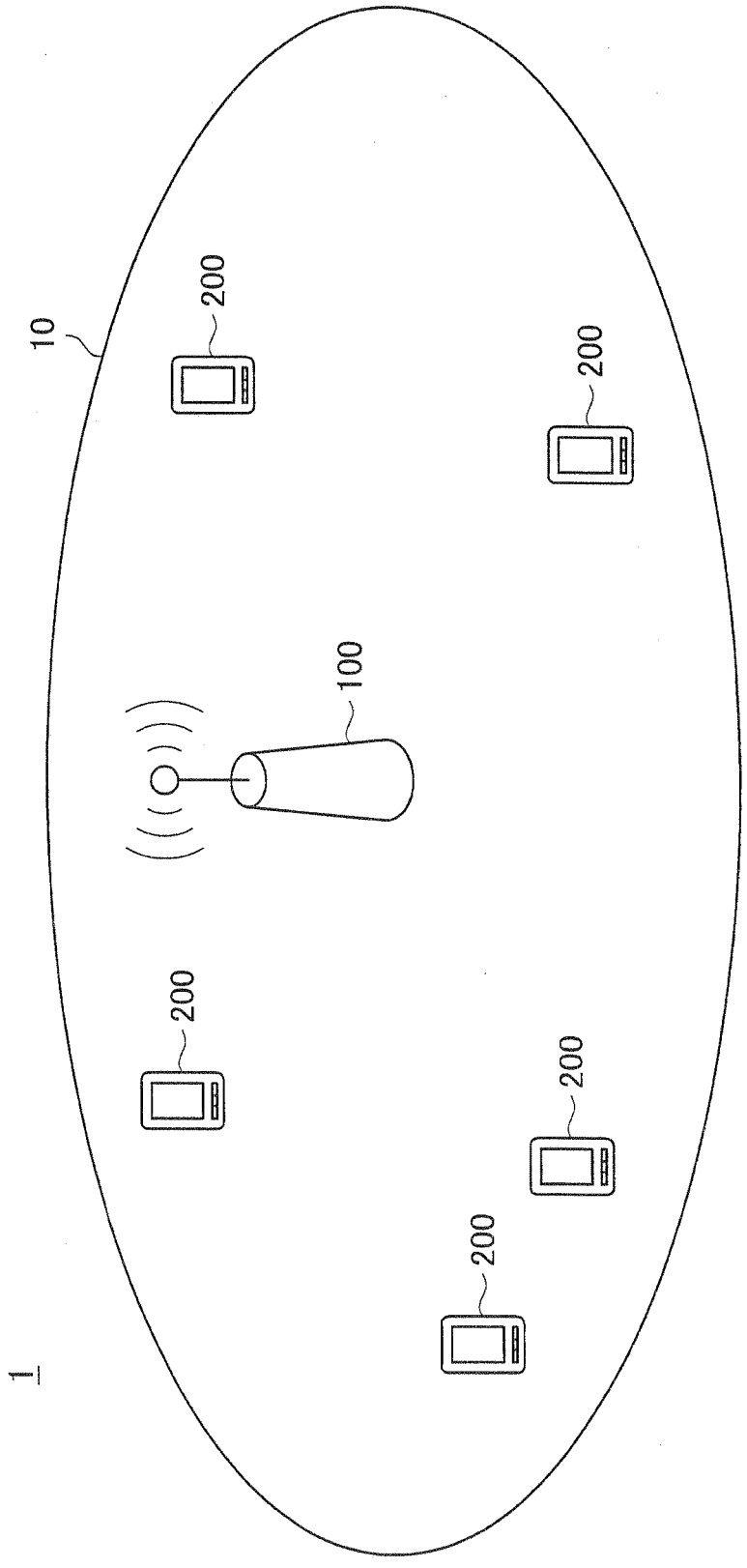


FIG. 4

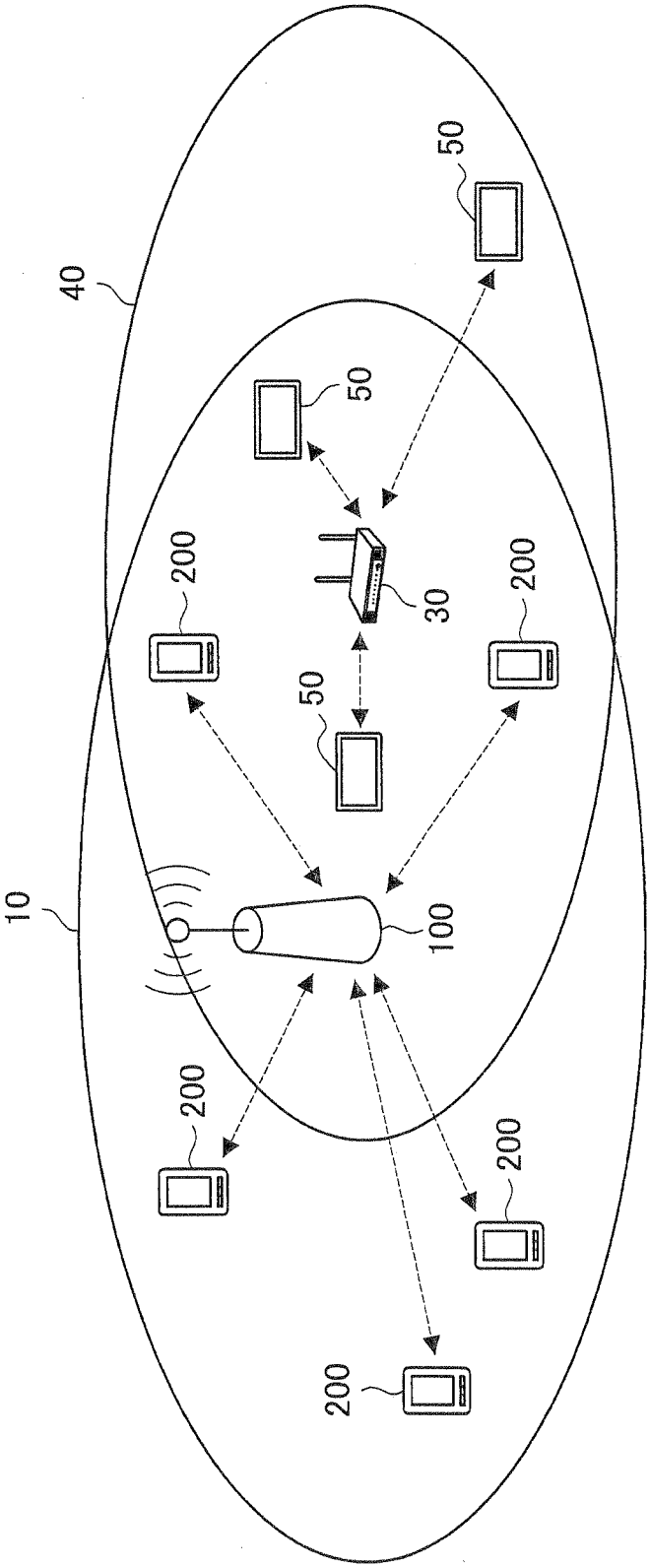


FIG. 5

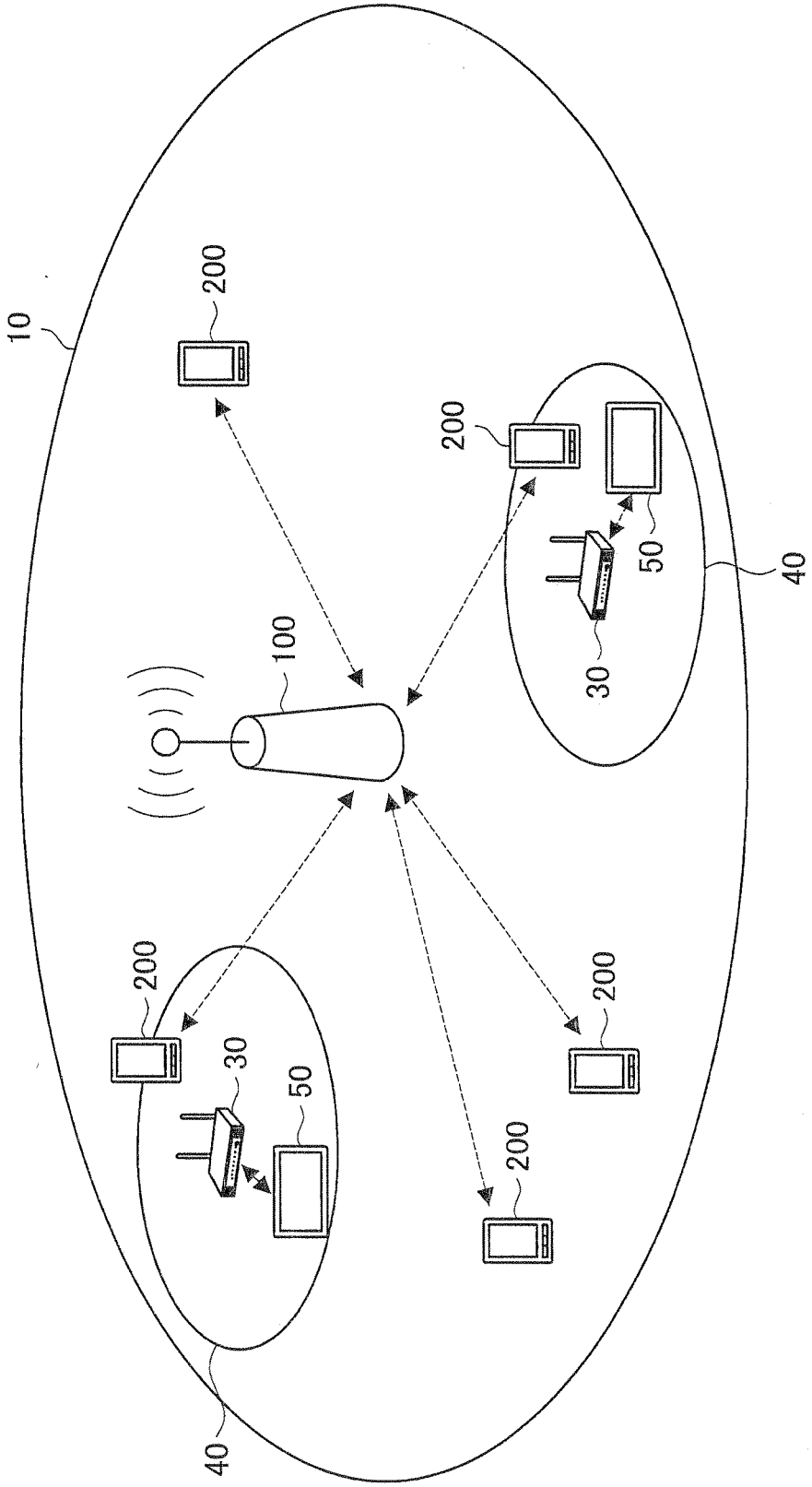


FIG. 6

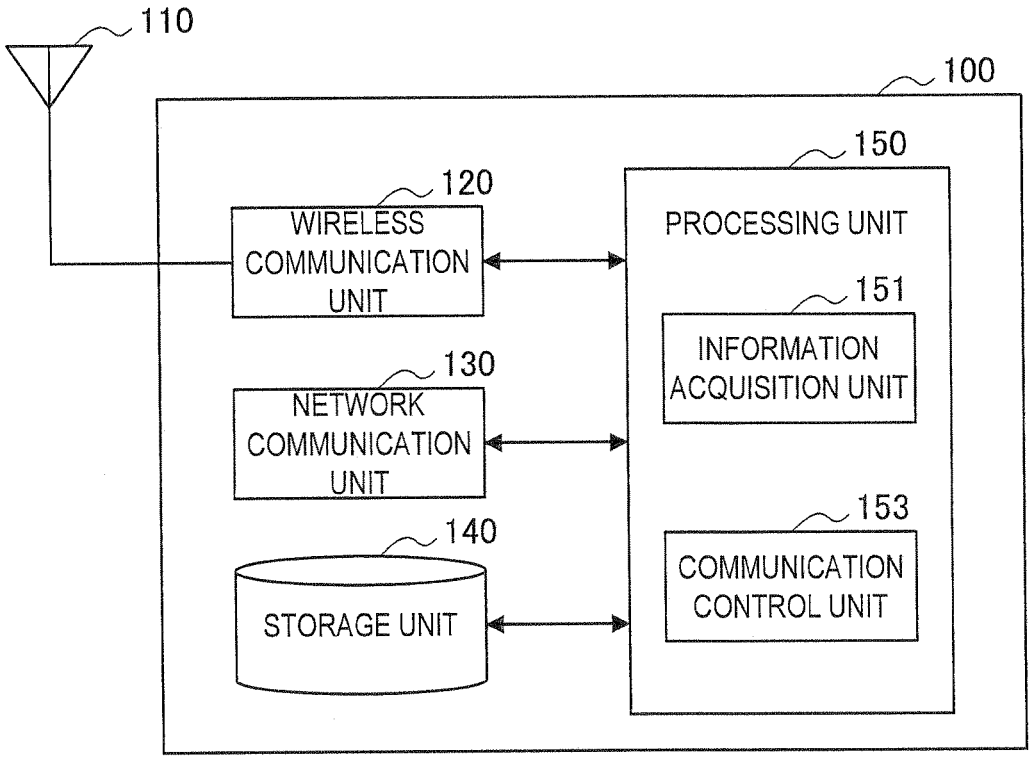

110
100
150
120
WIRELESS COMMUNICATION UNIT
PROCESSING UNIT
151
INFORMATION ACQUISITION UNIT
130
NETWORK COMMUNICATION UNIT
153
COMMUNICATION CONTROL UNIT
140
STORAGE UNIT

FIG. 7

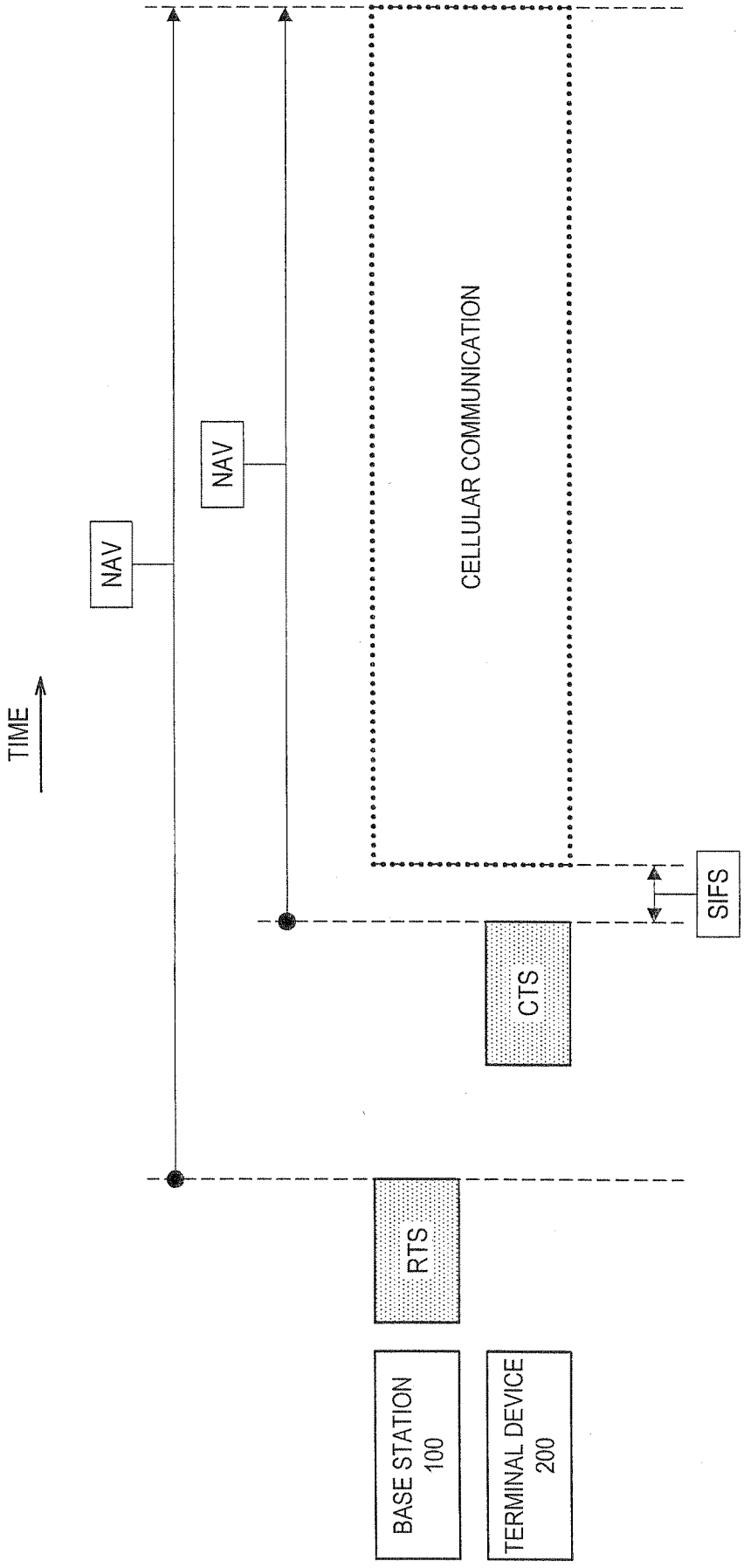

BASE STATION 100
TERMINAL DEVICE 200
RTS
CTS
SIFS
NAV
NAV
CELLULAR COMMUNICATION
TIME

FIG. 8

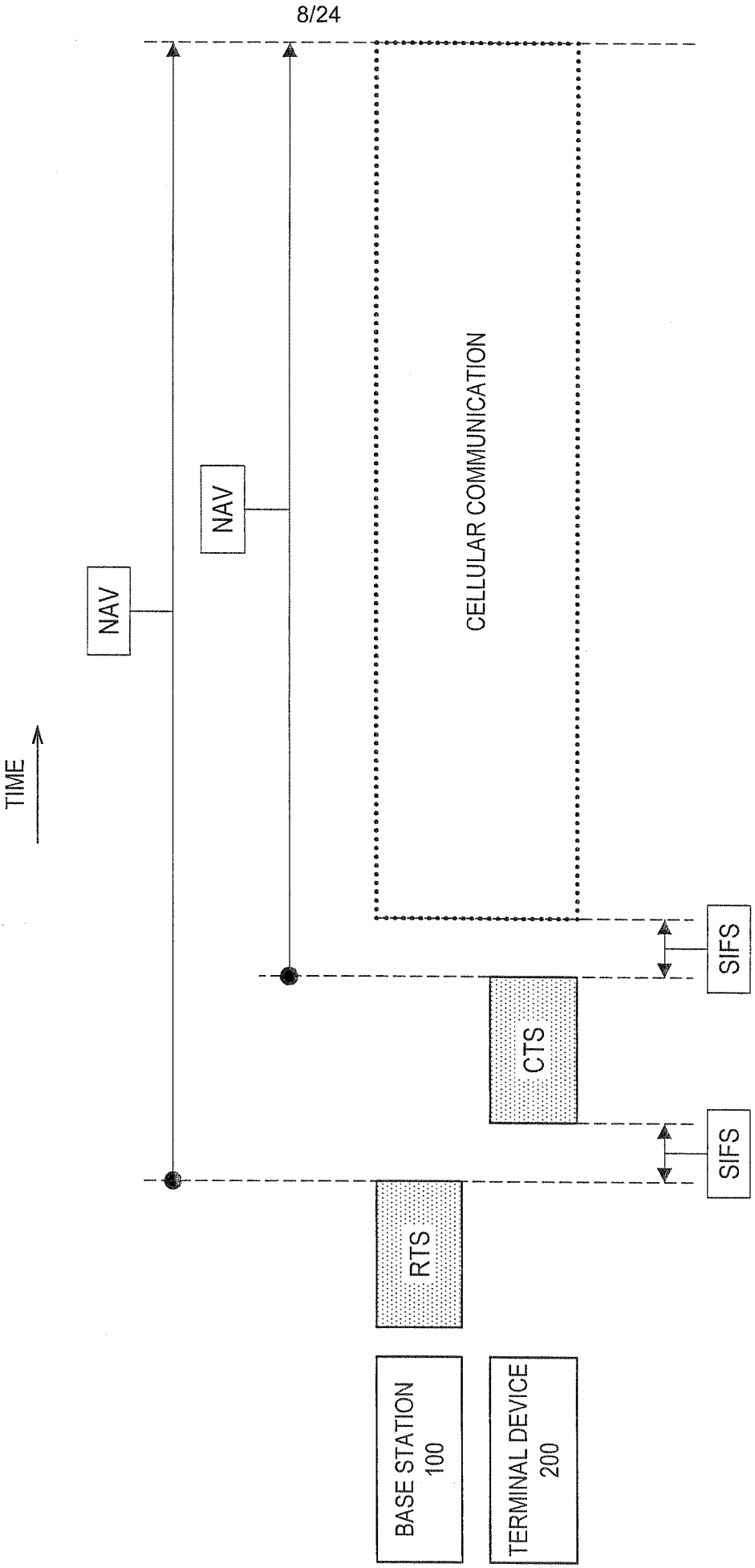

TIME
NAV
NAV
CELLULAR COMMUNICATION
SIFS
CTS
SIFS
RTS
BASE STATION 100
TERMINAL DEVICE 200

FIG. 9

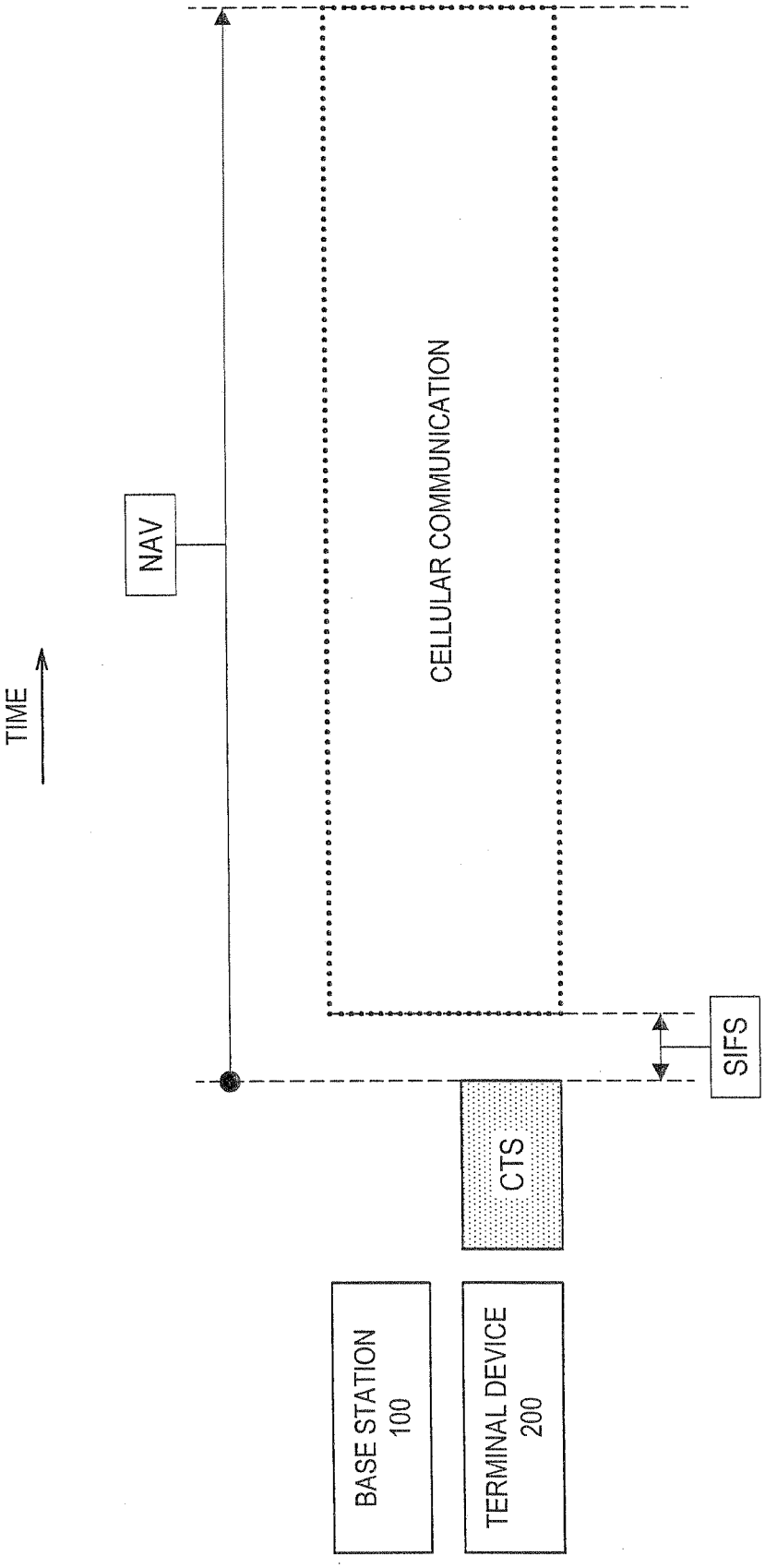

BASE STATION
100
TERMINAL DEVICE
200
CTS
SIFS
NAV
CELLULAR COMMUNICATION
TIME

FIG. 10

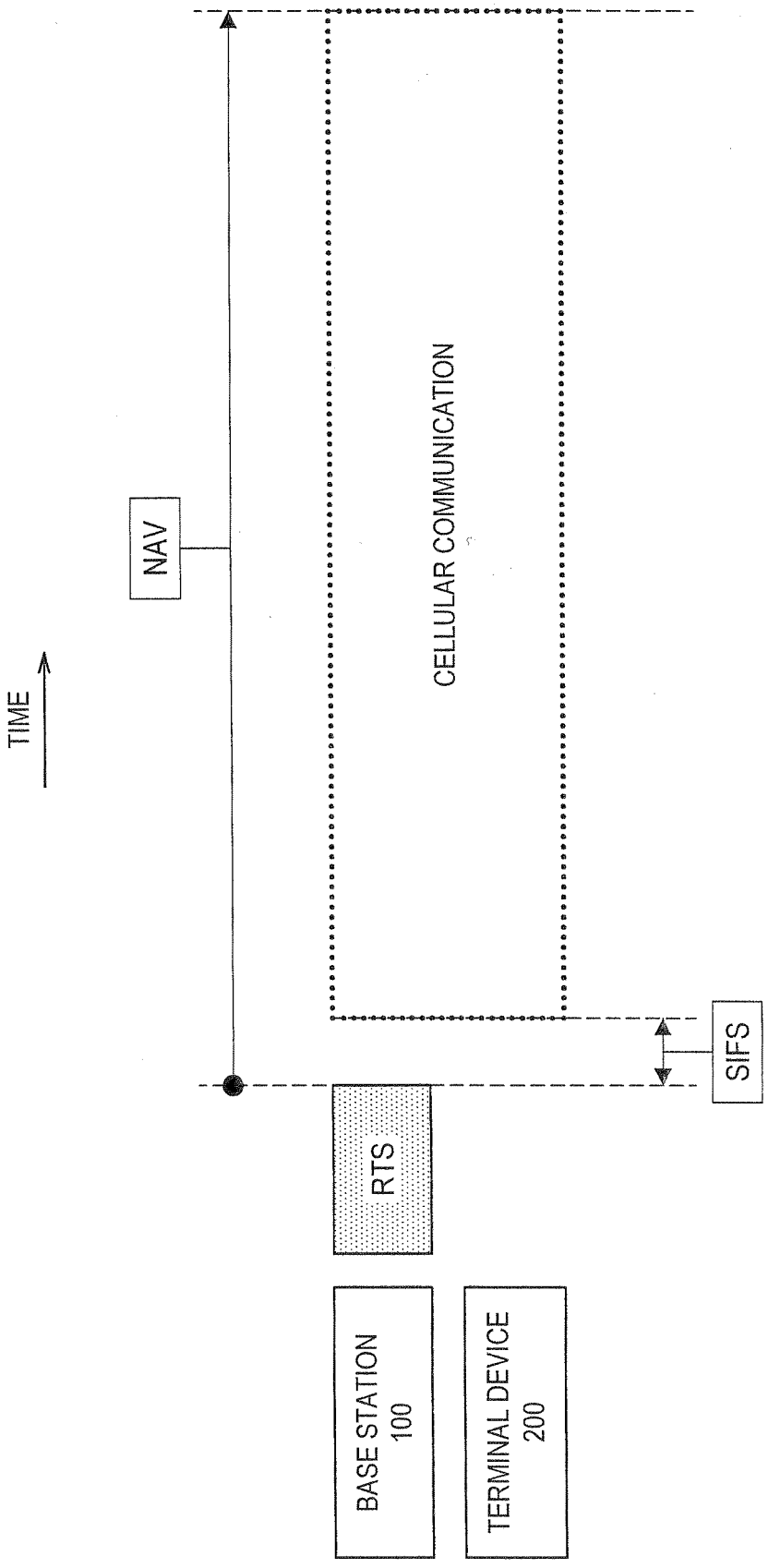

TIME
NAV
CELLULAR COMMUNICATION
SIFS
RTS
BASE STATION
100
TERMINAL DEVICE
200

FIG. 11

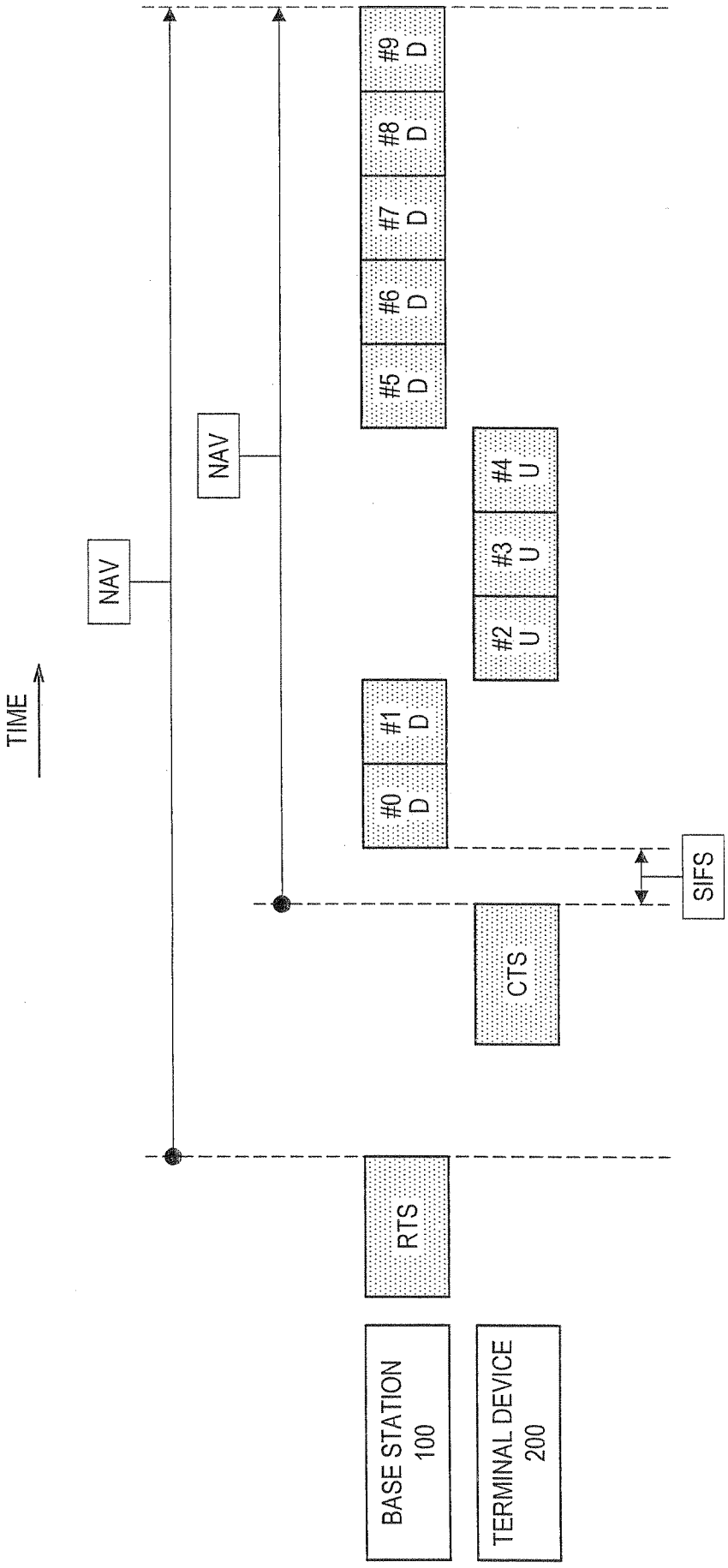

BASE STATION 100
TERMINAL DEVICE 200
RTS
CTS
SIFS
NAV
NAV
TIME
#0 D
#1 D
#2 U
#3 U
#4 U
#5 D
#6 D
#7 D
#8 D
#9 D

FIG. 12

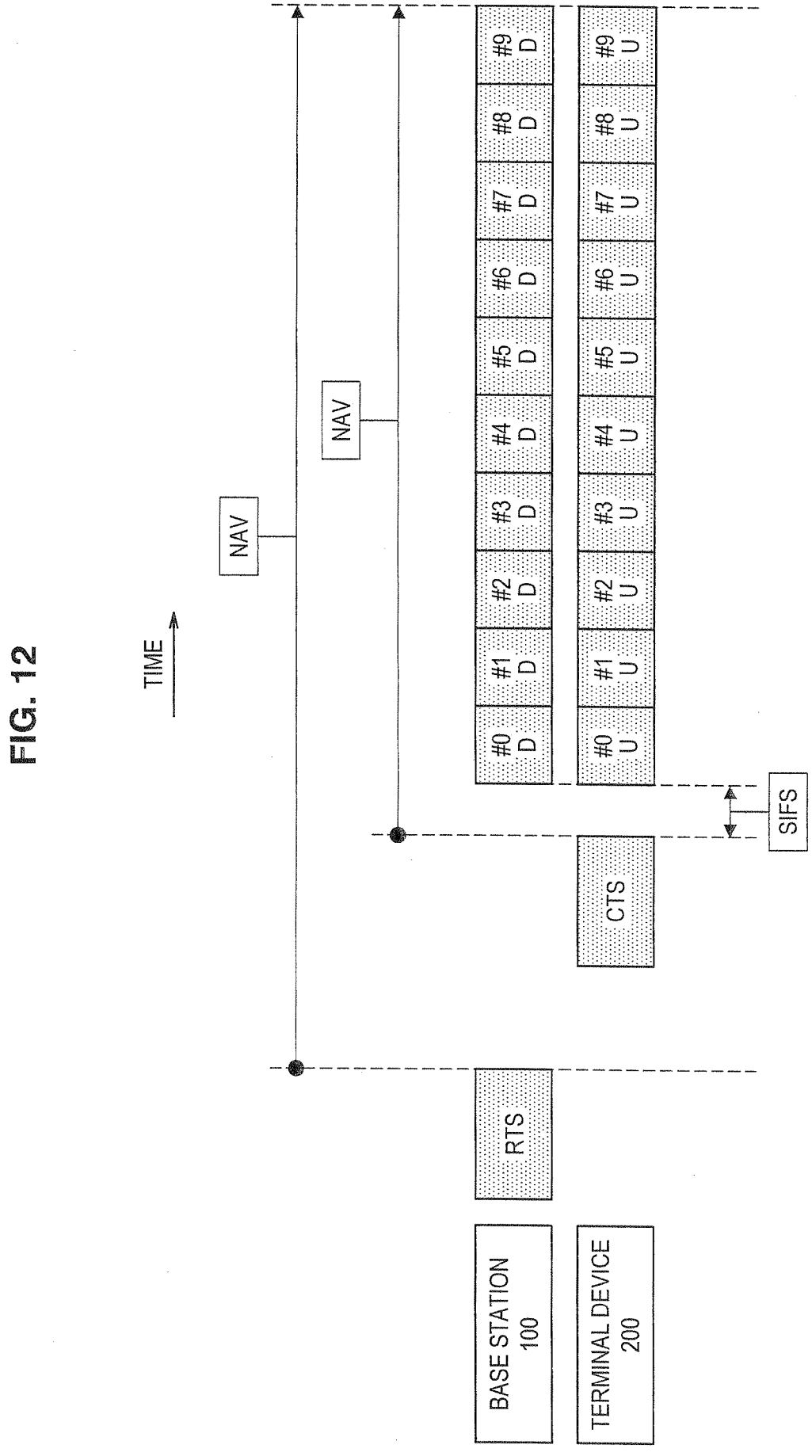

BASE STATION 100
TERMINAL DEVICE 200
RTS
CTS
SIFS
NAV
NAV
TIME
#0 D
#1 D
#2 D
#3 D
#4 D
#5 D
#6 D
#7 D
#8 D
#9 D
#0 U
#1 U
#2 U
#3 U
#4 U
#5 U
#6 U
#7 U
#8 U
#9 U

FIG. 13

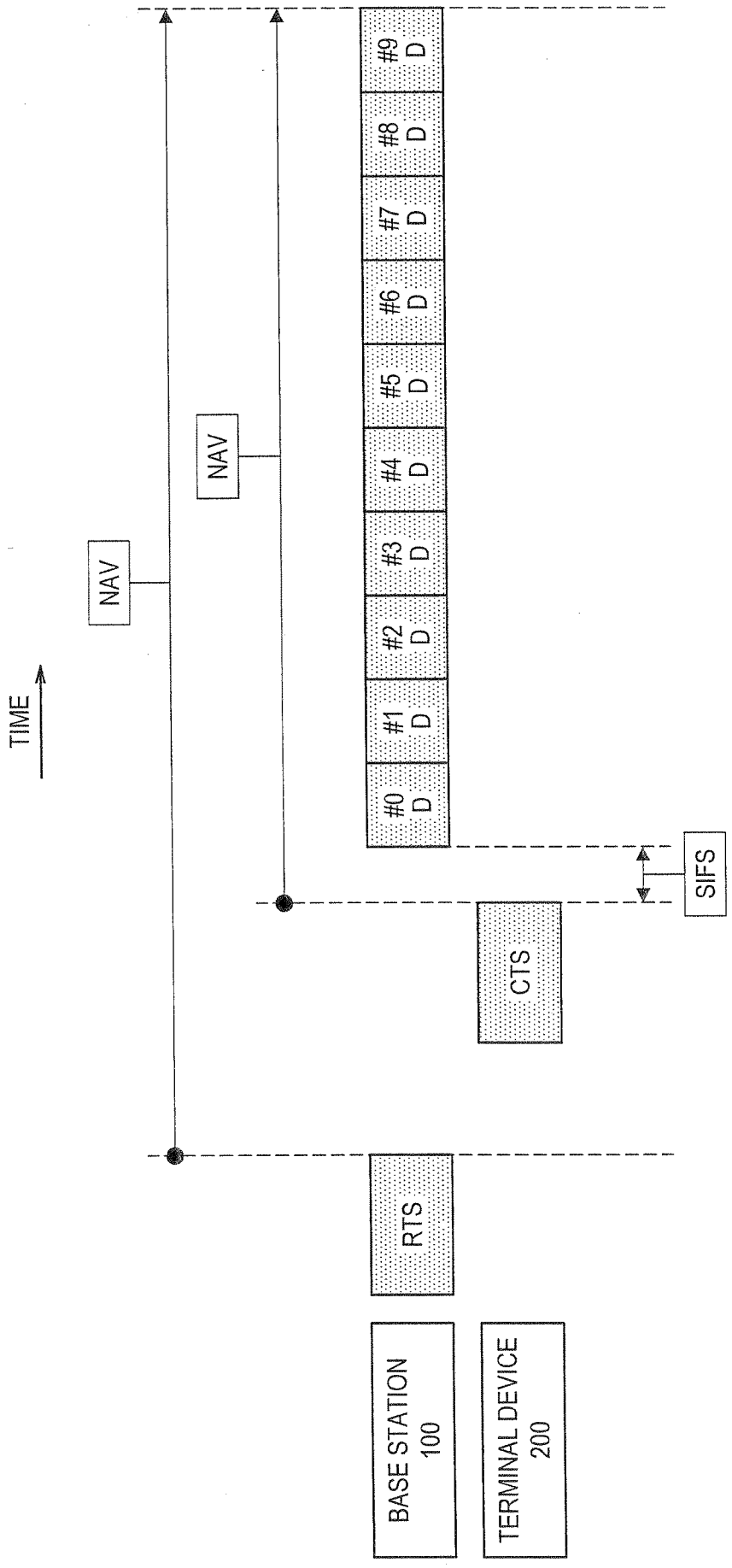

BASE STATION 100
TERMINAL DEVICE 200
RTS
CTS
SIFS
NAV
NAV
TIME
#0 D
#1 D
#2 D
#3 D
#4 D
#5 D
#6 D
#7 D
#8 D
#9 D

FIG. 14

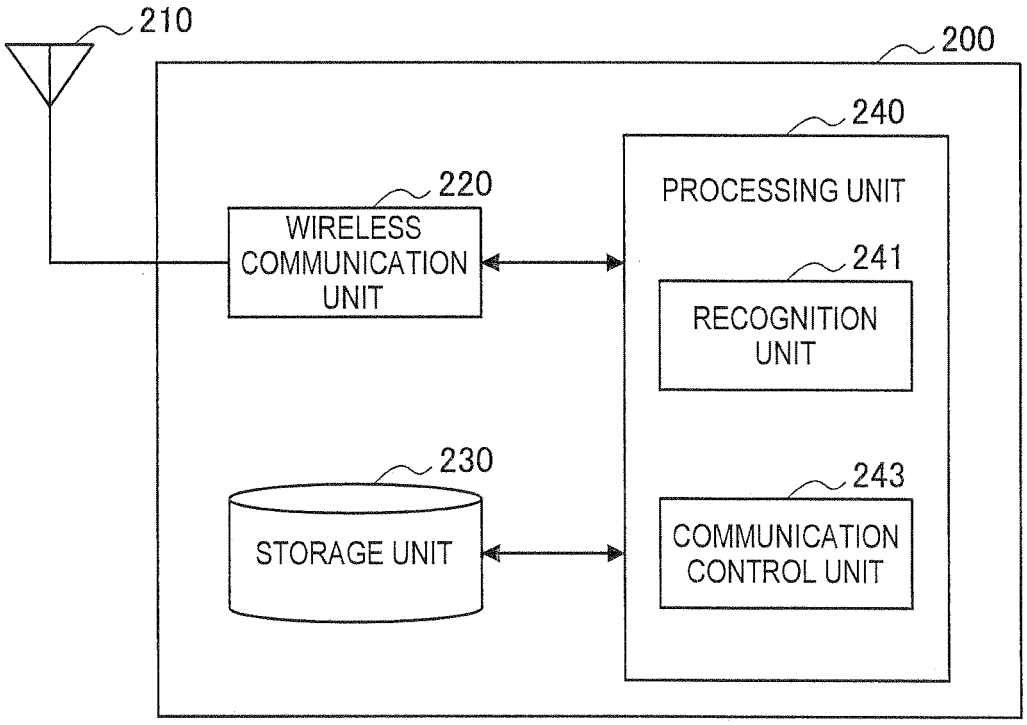

210
200
240
220
PROCESSING UNIT
WIRELESS COMMUNICATION UNIT
241
RECOGNITION UNIT
230
243
STORAGE UNIT
COMMUNICATION CONTROL UNIT

FIG. 15

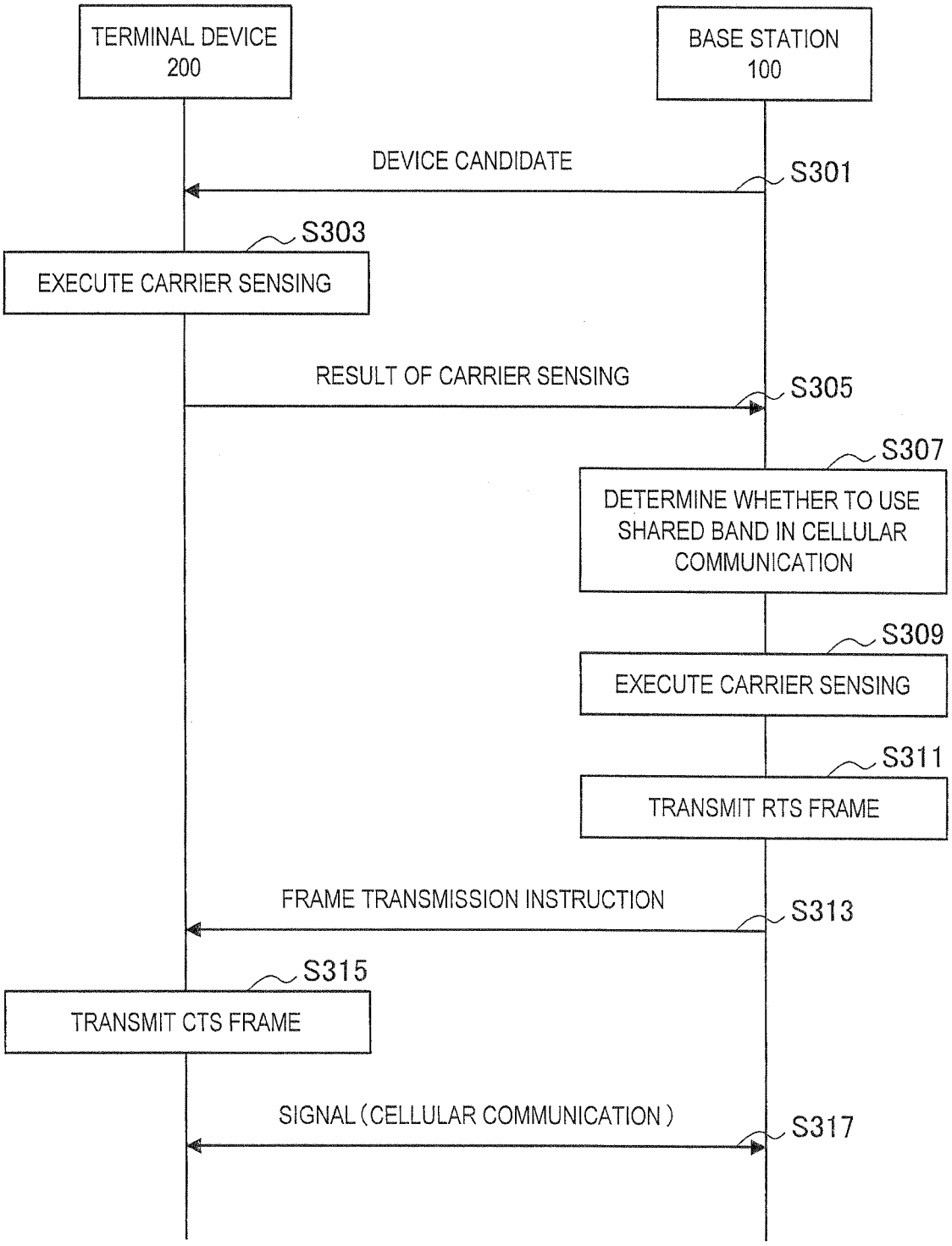

TERMINAL DEVICE
200
BASE STATION
100
DEVICE CANDIDATE
S301
S303
EXECUTE CARRIER SENSING
RESULT OF CARRIER SENSING
S305
S307
DETERMINE WHETHER TO USE SHARED BAND IN CELLULAR COMMUNICATION
S309
EXECUTE CARRIER SENSING
S311
TRANSMIT RTS FRAME
FRAME TRANSMISSION INSTRUCTION
S313
S315
TRANSMIT CTS FRAME
SIGNAL (CELLULAR COMMUNICATION)
S317

FIG. 16

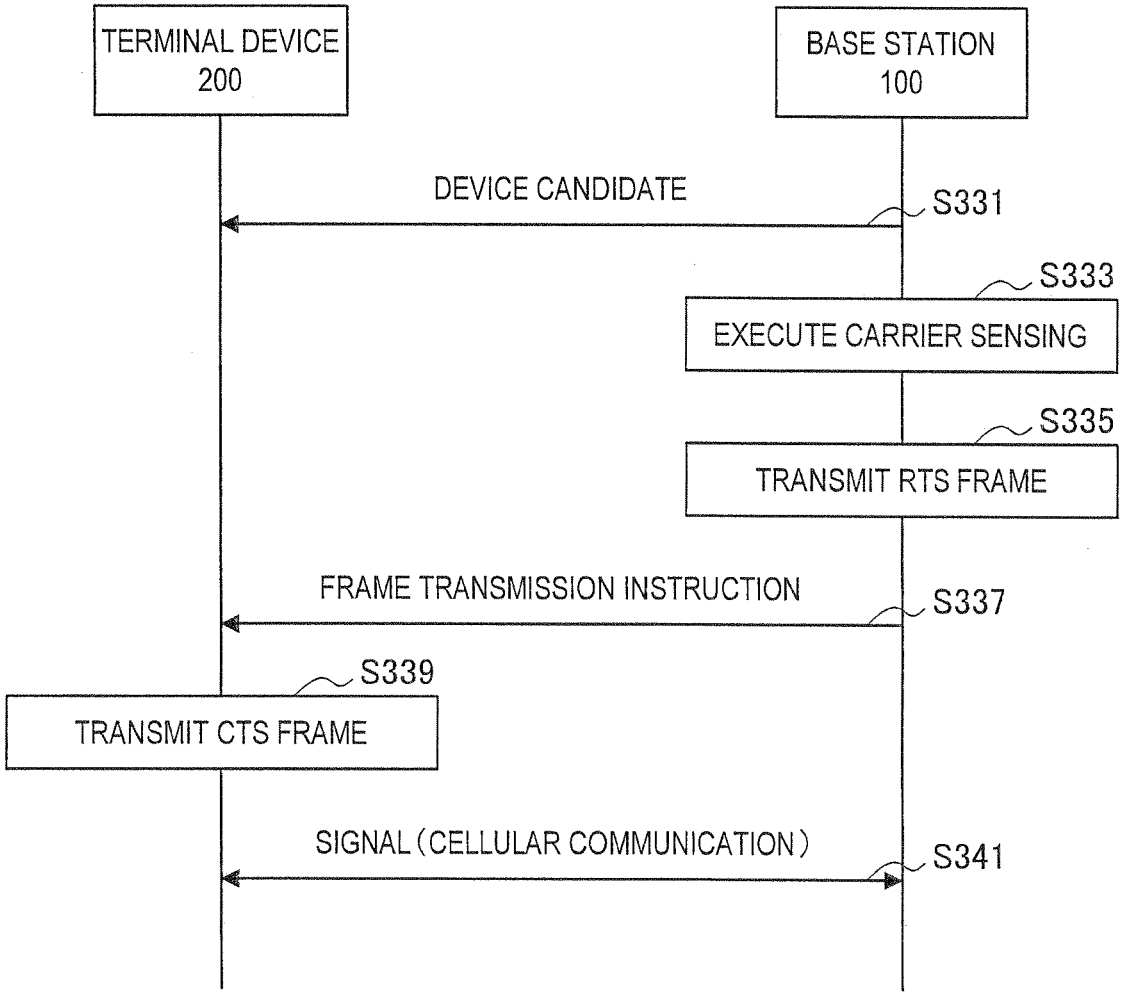

TERMINAL DEVICE
200
BASE STATION
100
DEVICE CANDIDATE
S331
S333
EXECUTE CARRIER SENSING
S335
TRANSMIT RTS FRAME
FRAME TRANSMISSION INSTRUCTION
S337
S339
TRANSMIT CTS FRAME
SIGNAL (CELLULAR COMMUNICATION)
S341

FIG. 17

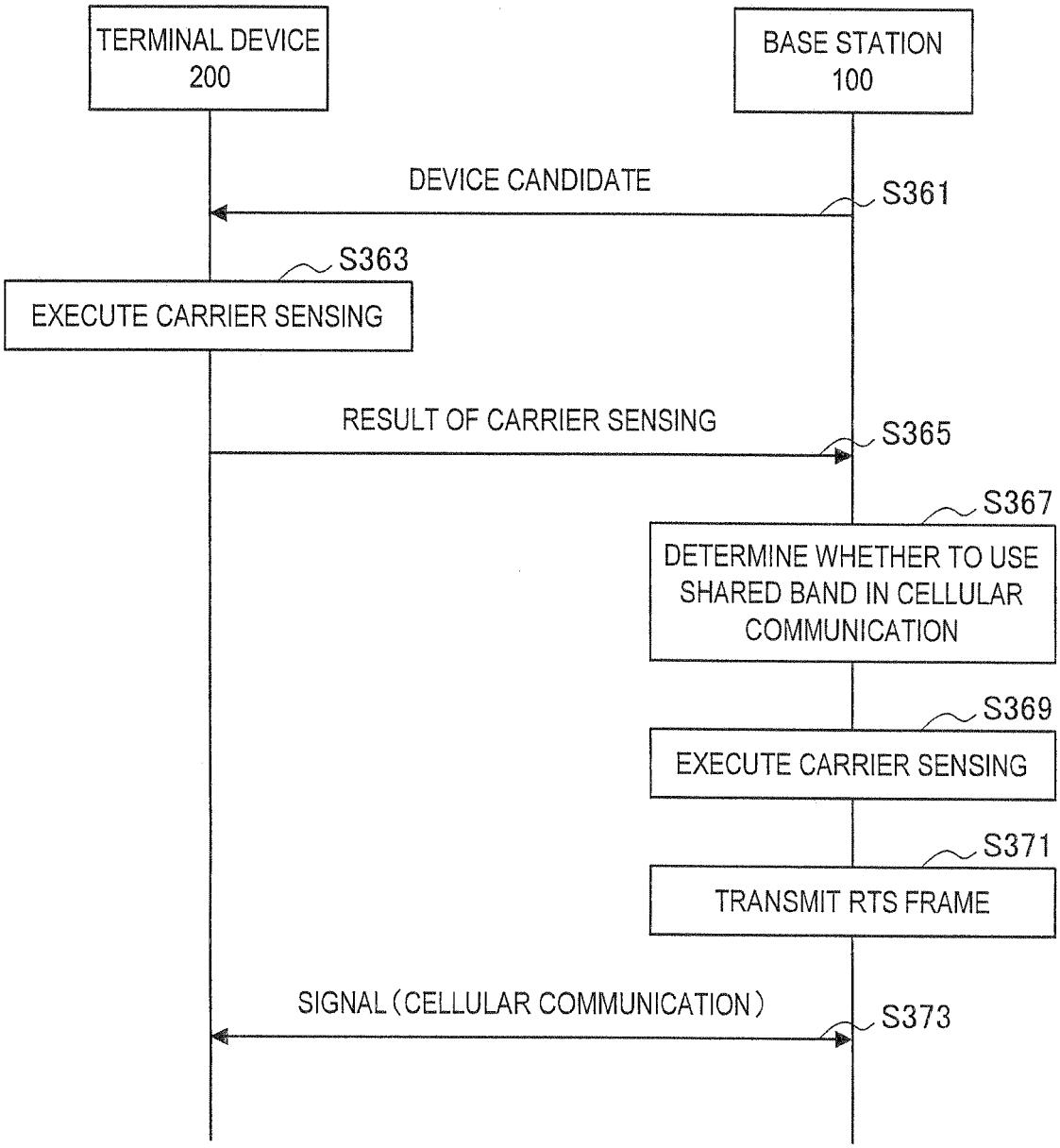

TERMINAL DEVICE
200
BASE STATION
100
DEVICE CANDIDATE
S361
S363
EXECUTE CARRIER SENSING
RESULT OF CARRIER SENSING
S365
S367
DETERMINE WHETHER TO USE SHARED BAND IN CELLULAR COMMUNICATION
S369
EXECUTE CARRIER SENSING
S371
TRANSMIT RTS FRAME
SIGNAL (CELLULAR COMMUNICATION)
S373

FIG. 18

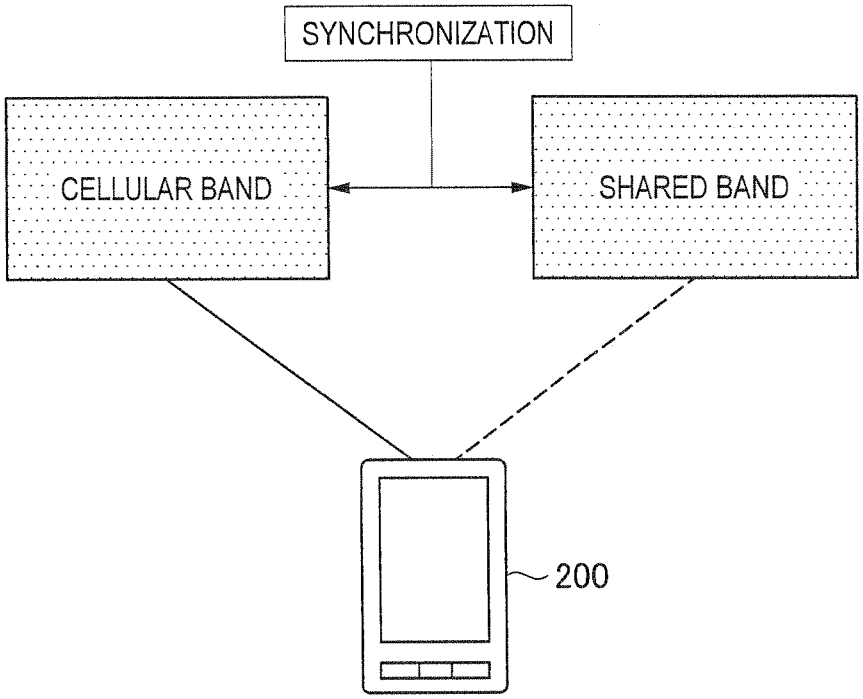


FIG. 19

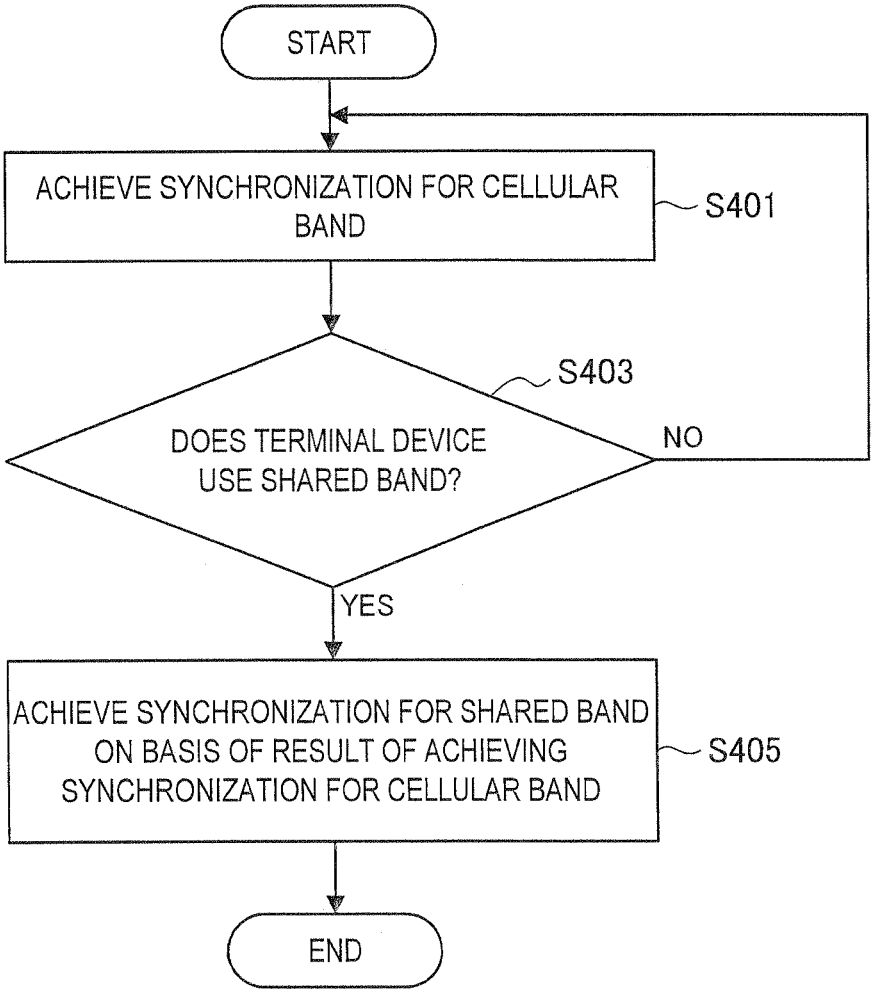

START
ACHIEVE SYNCHRONIZATION FOR CELLULAR BAND
S401
S403
DOES TERMINAL DEVICE USE SHARED BAND?
NO
YES
ACHIEVE SYNCHRONIZATION FOR SHARED BAND ON BASIS OF RESULT OF ACHIEVING SYNCHRONIZATION FOR CELLULAR BAND
S405
END

FIG. 20

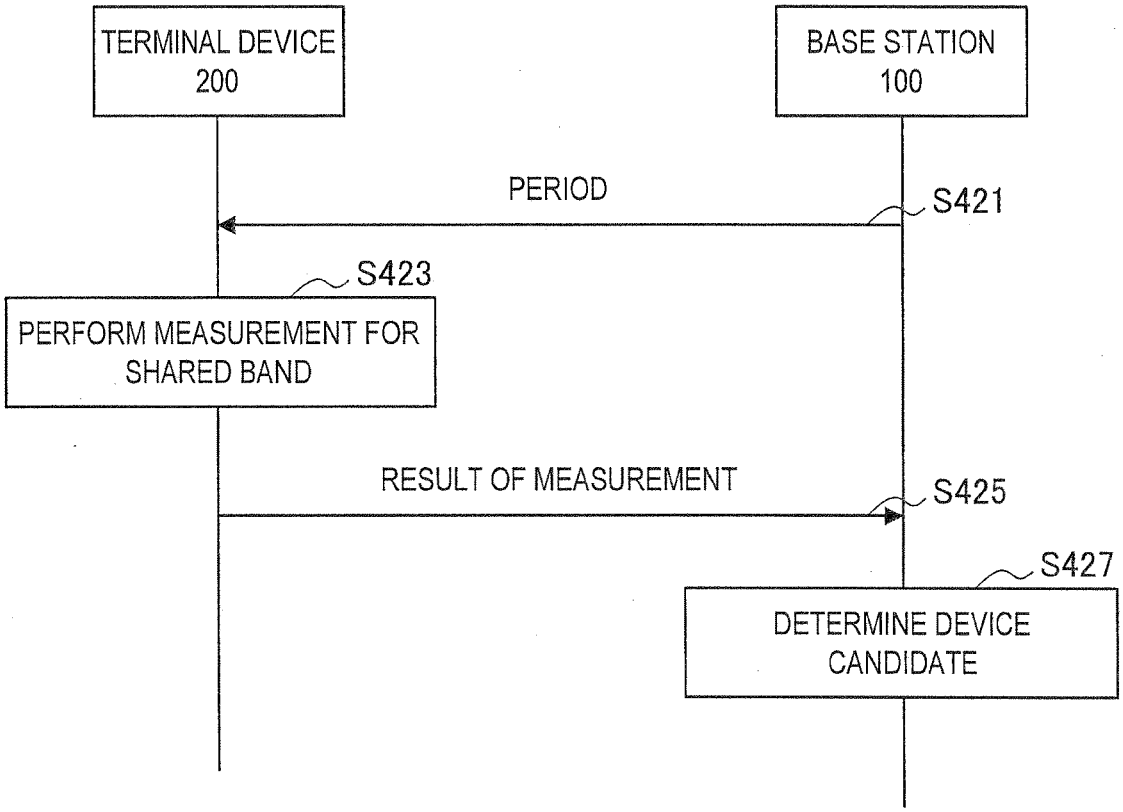

TERMINAL DEVICE
200
BASE STATION
100
PERIOD
S421
S423
PERFORM MEASUREMENT FOR
SHARED BAND
RESULT OF MEASUREMENT
S425
S427
DETERMINE DEVICE
CANDIDATE

FIG. 21

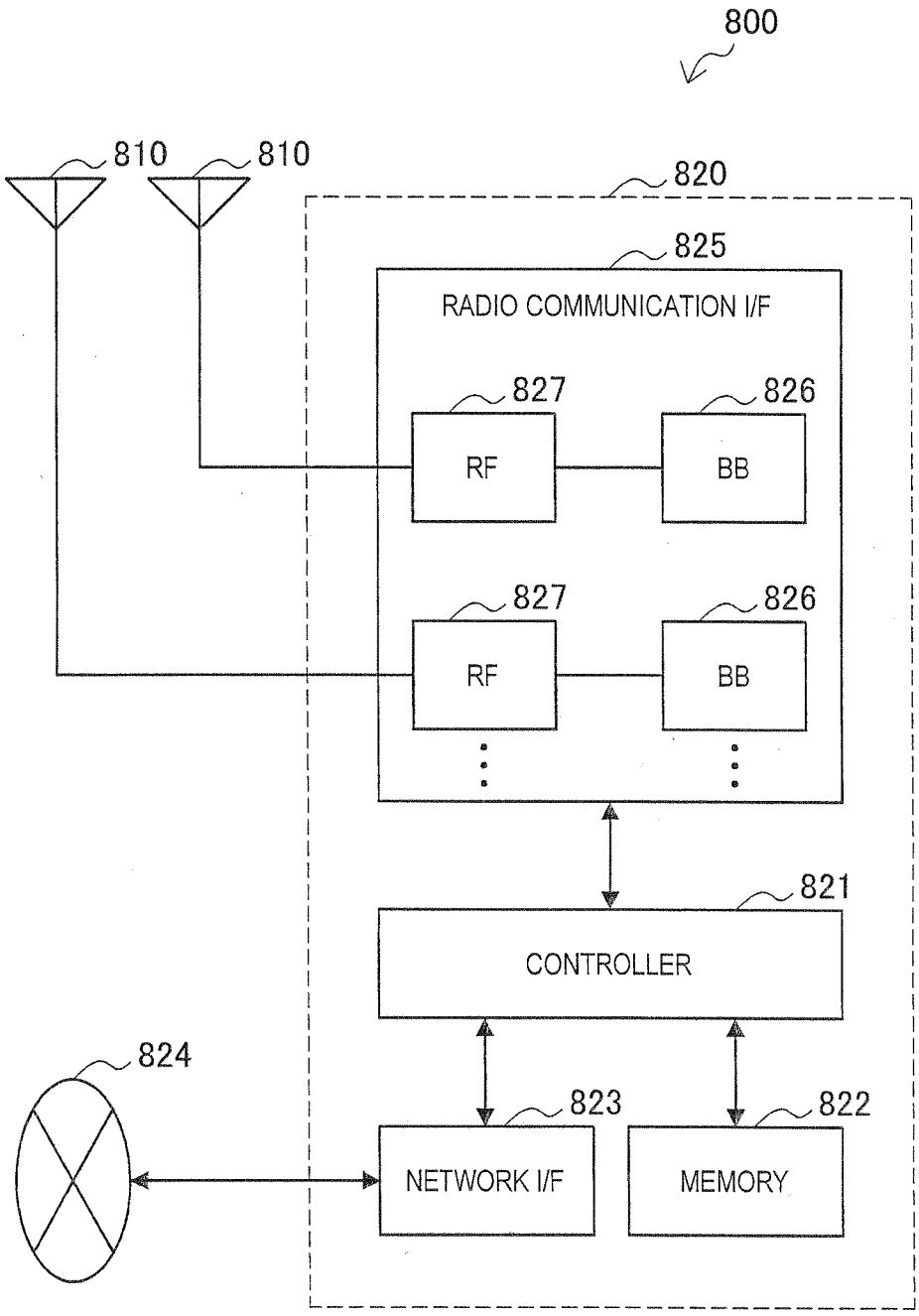

800
810
810
820
825
RADIO COMMUNICATION I/F
827
826
RF
BB
827
826
RF
BB
821
CONTROLLER
824
823
822
NETWORK I/F
MEMORY

FIG. 22

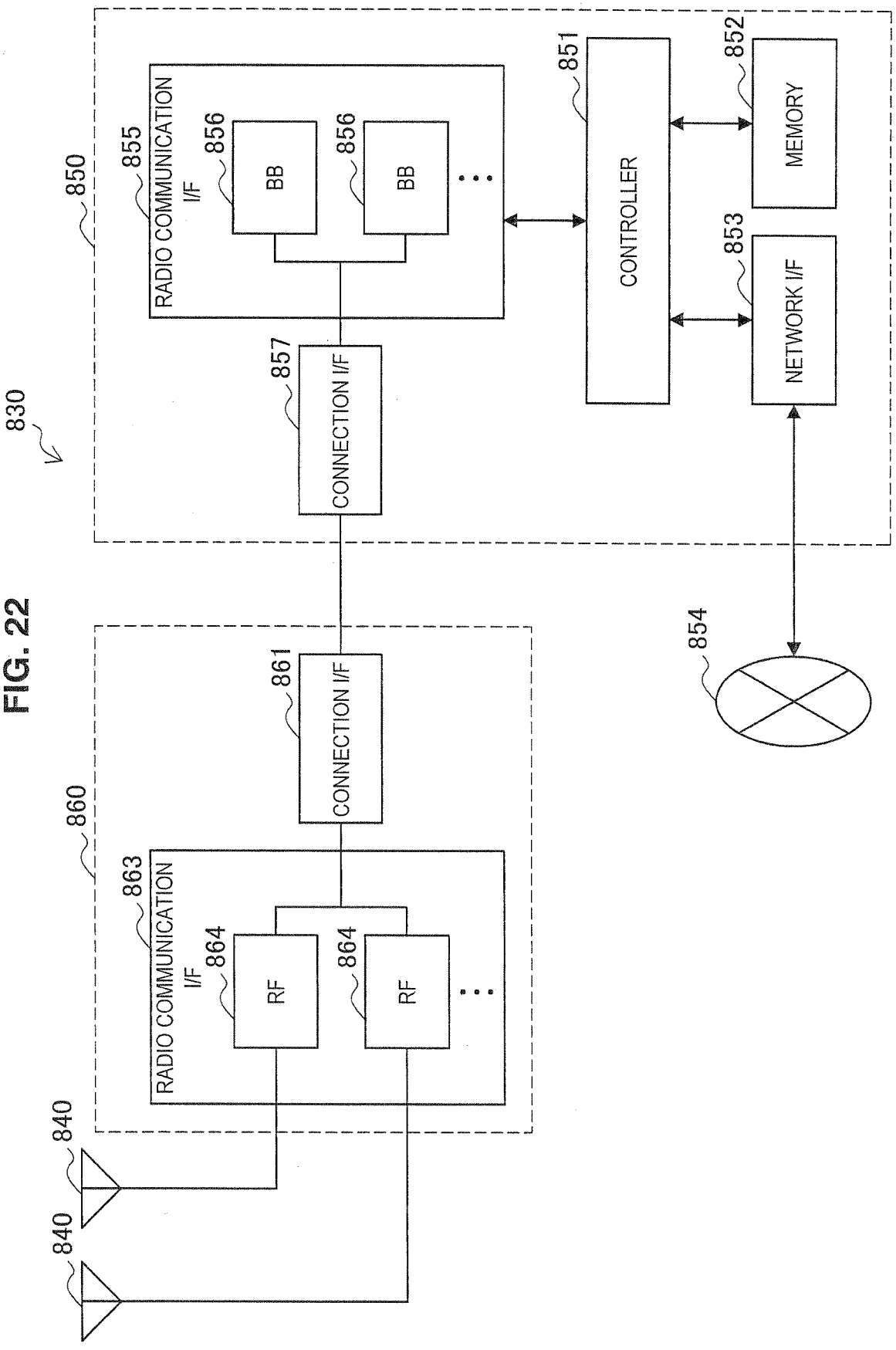

830
850
855
RADIO COMMUNICATION I/F
856
BB
856
BB
851
CONTROLLER
852
MEMORY
853
NETWORK I/F
857
CONNECTION I/F
854
860
863
RADIO COMMUNICATION I/F
864
RF
864
RF
861
CONNECTION I/F
840
840

FIG. 23

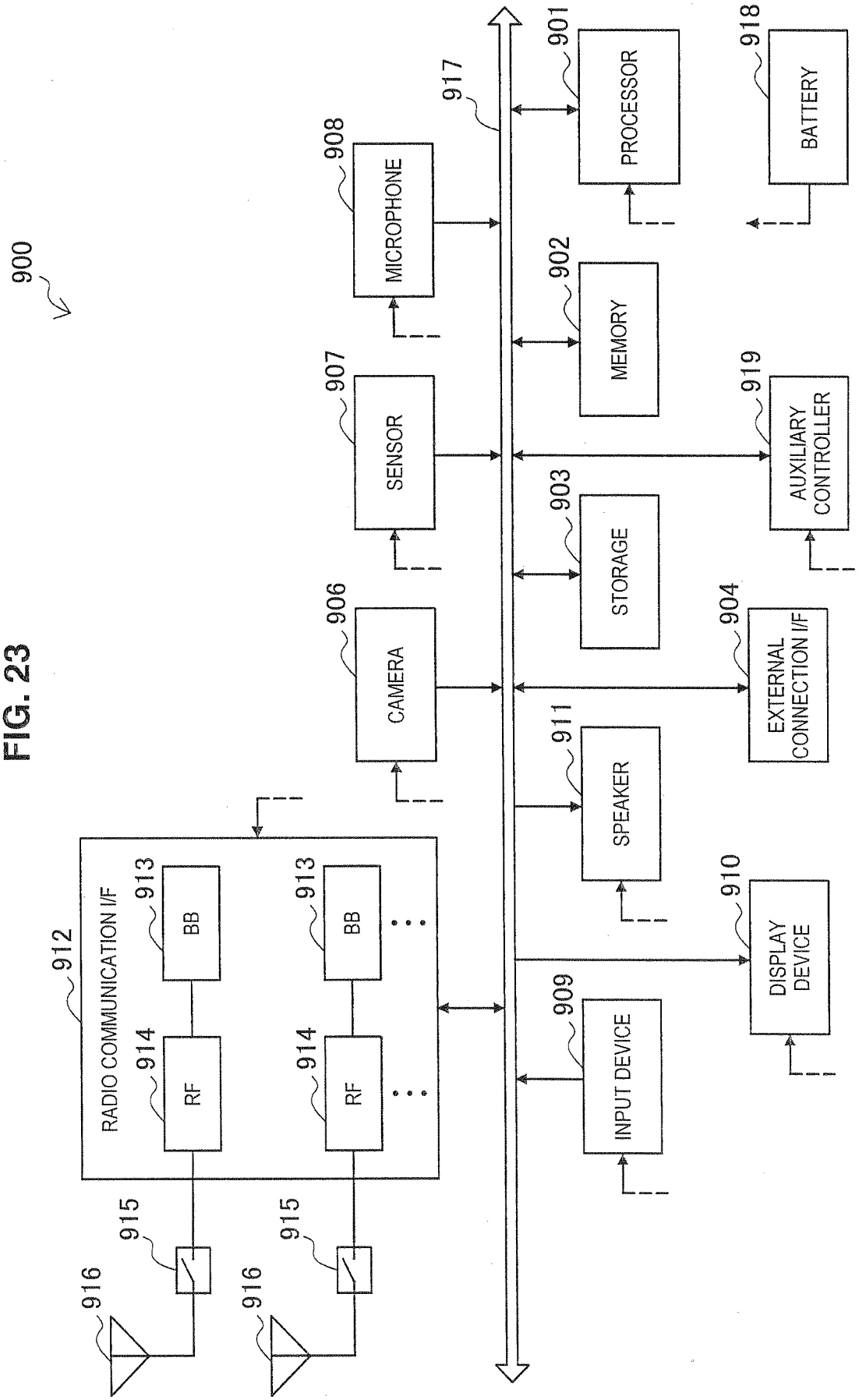
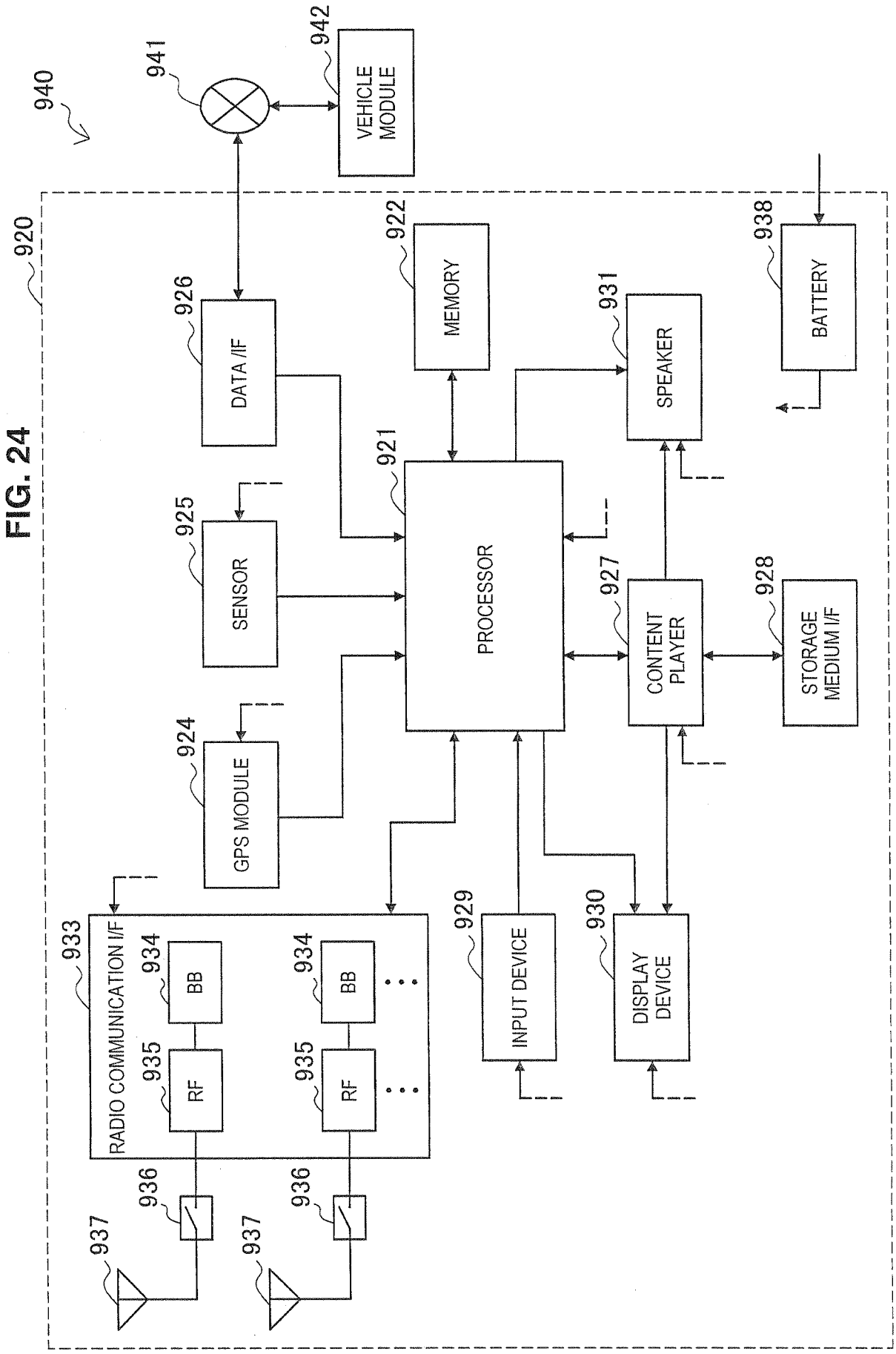

900
PROCESSOR
901
BATTERY
918
MICROPHONE
908
MEMORY
902
SENSOR
907
AUXILIARY CONTROLLER
919
STORAGE
903
CAMERA
906
EXTERNAL CONNECTION I/F
904
SPEAKER
911
DISPLAY DEVICE
910
INPUT DEVICE
909
917
RADIO COMMUNICATION I/F
912
BB
913
RF
914
915
916

FIG. 24


940
941
942
VEHICLE MODULE
920
922
MEMORY
938
BATTERY
926
DATA /IF
931
SPEAKER
921
PROCESSOR
925
SENSOR
927
CONTENT PLAYER
928
STORAGE MEDIUM I/F
924
GPS MODULE
933
RADIO COMMUNICATION I/F
934
BB
935
RF
936
937
929
INPUT DEVICE
930
DISPLAY DEVICE