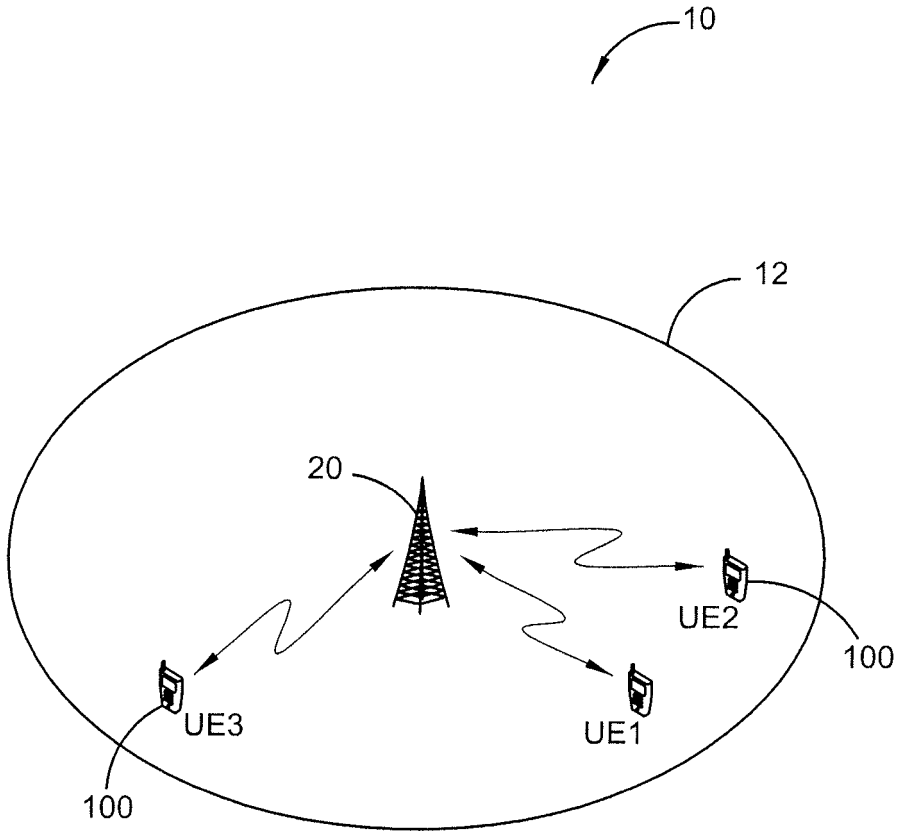

FIG. 1

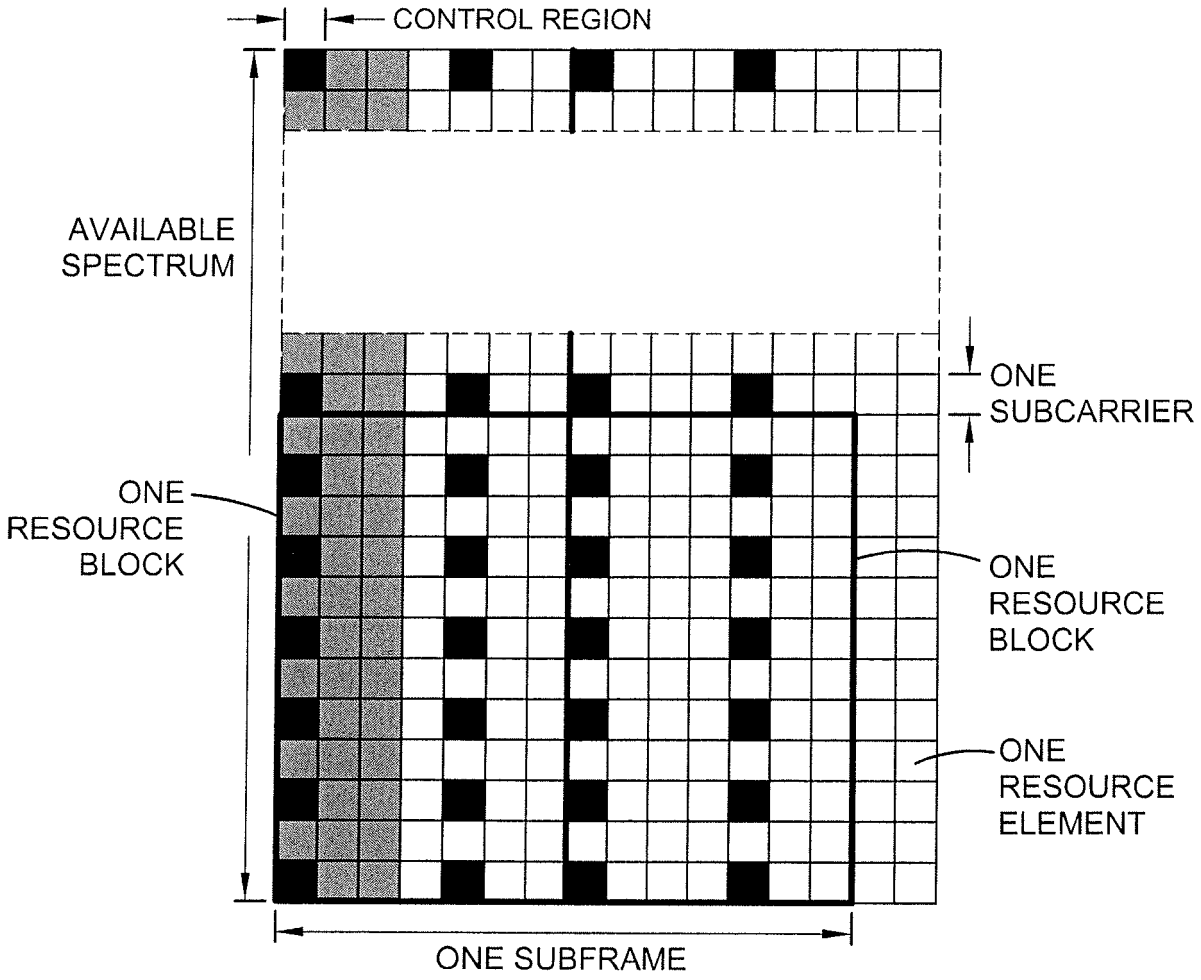
CONTROL REGION
AVAILABLE SPECTRUM
ONE SUBCARRIER
ONE RESOURCE BLOCK
ONE RESOURCE BLOCK
ONE RESOURCE ELEMENT
ONE SUBFRAME

FIG. 2

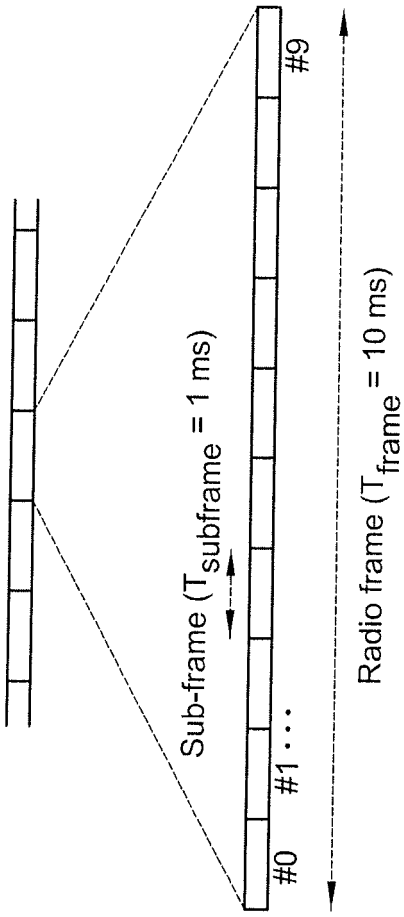

FIG. 3

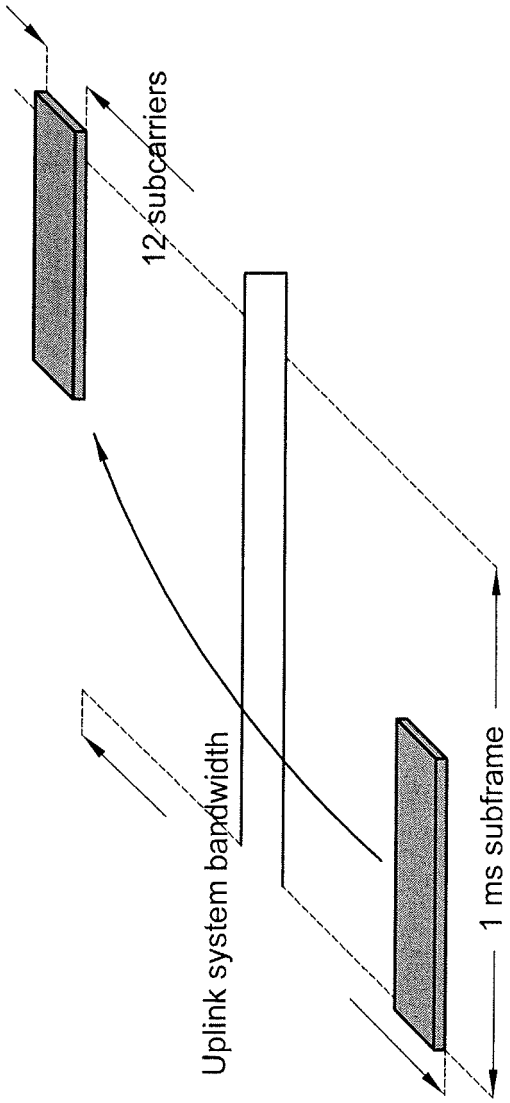

FIG. 4

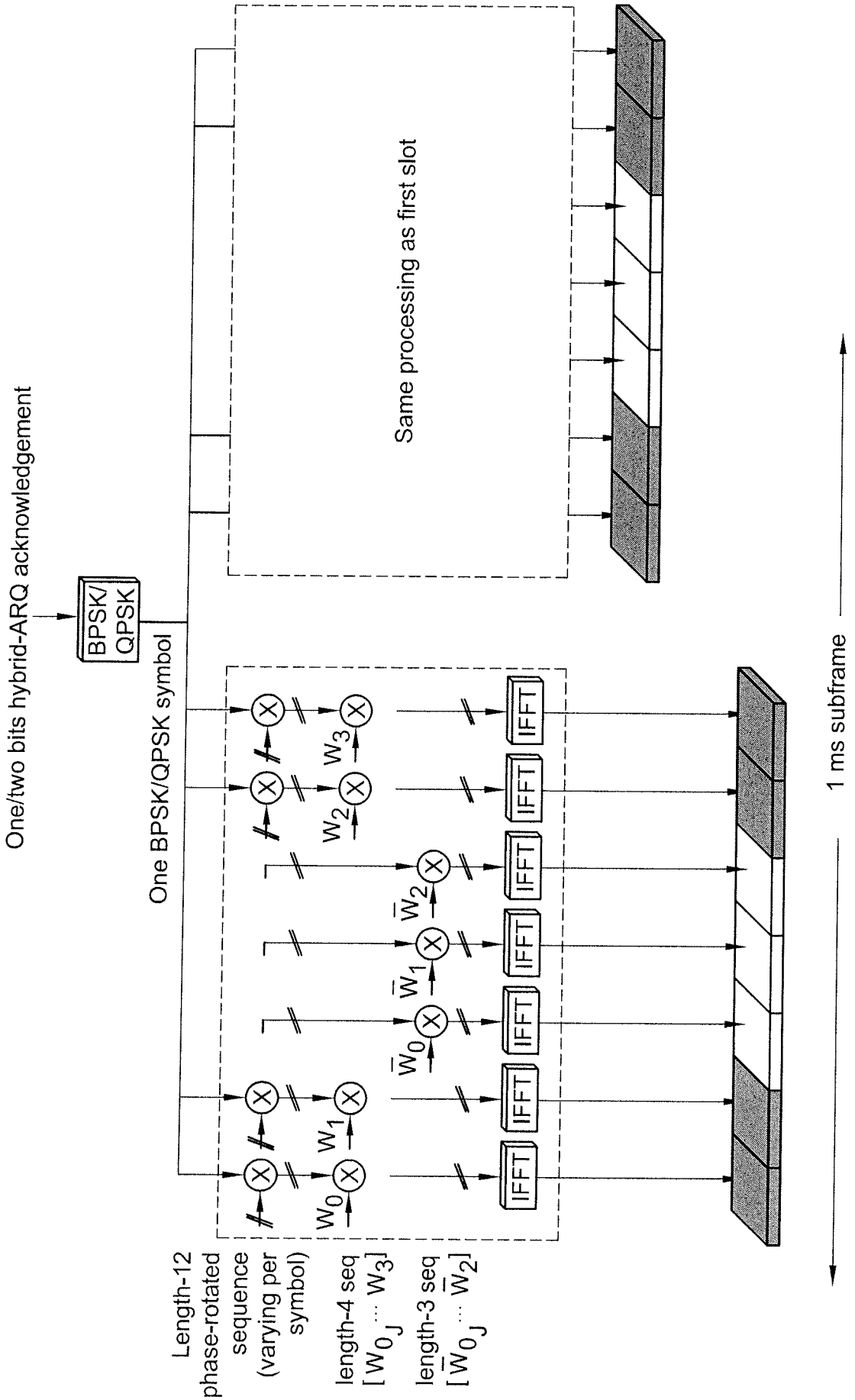
One/two bits hybrid-ARQ acknowledgement
BPSK/ QPSK
One BPSK/QPSK symbol
Same processing as first slot
Length-12 phase-rotated sequence (varying per symbol)
length-4 seq [W0J ... W3]
length-3 seq [W̄0J ... W̄2]
IFFT
1 ms subframe

FIG. 5

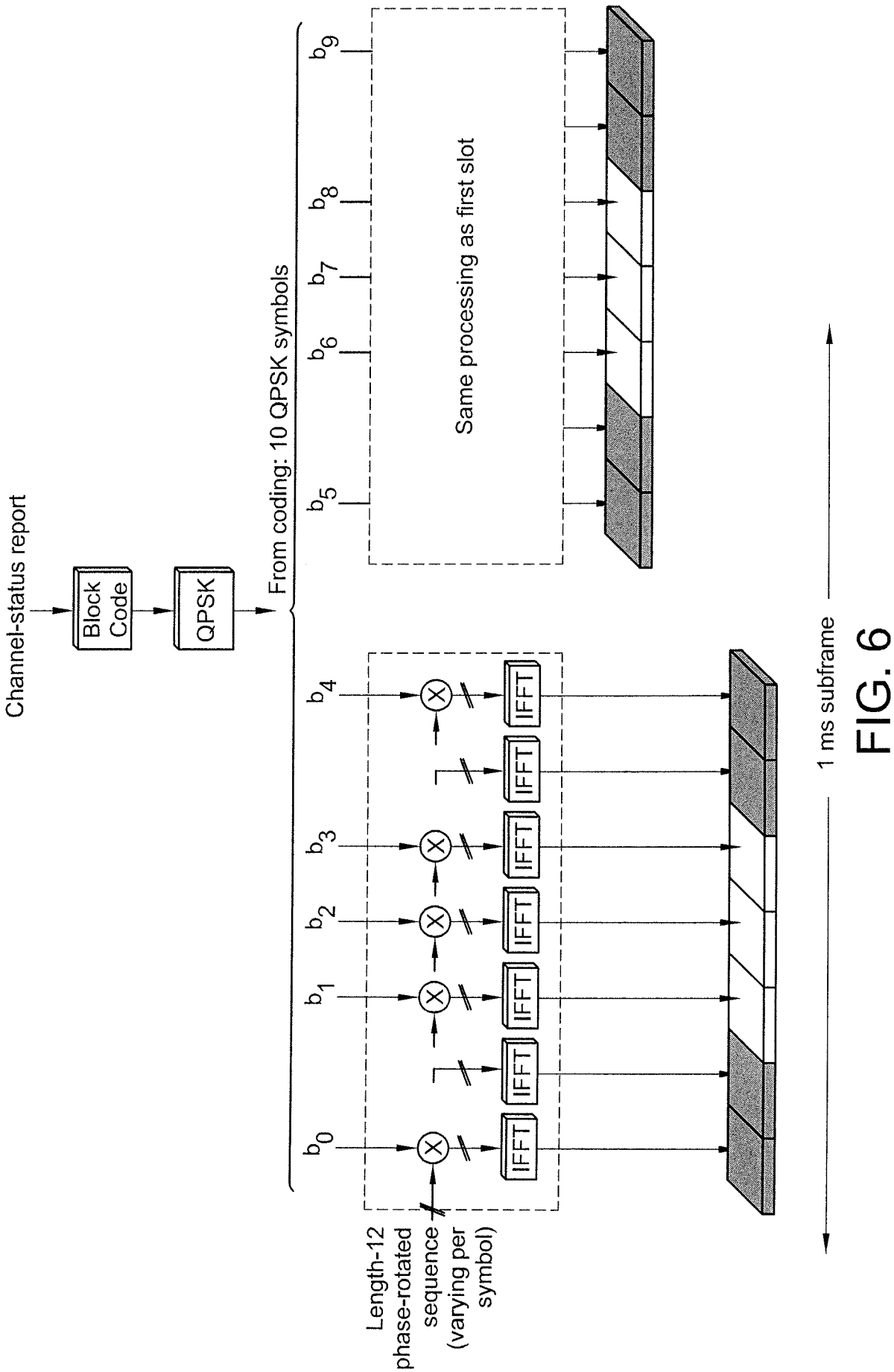
Channel-status report
Block Code
QPSK
From coding: 10 QPSK symbols
b0
b1
b2
b3
b4
b5
b6
b7
b8
b9
IFFT
Length-12 phase-rotated sequence (varying per symbol)
Same processing as first slot
1 ms subframe

FIG. 6

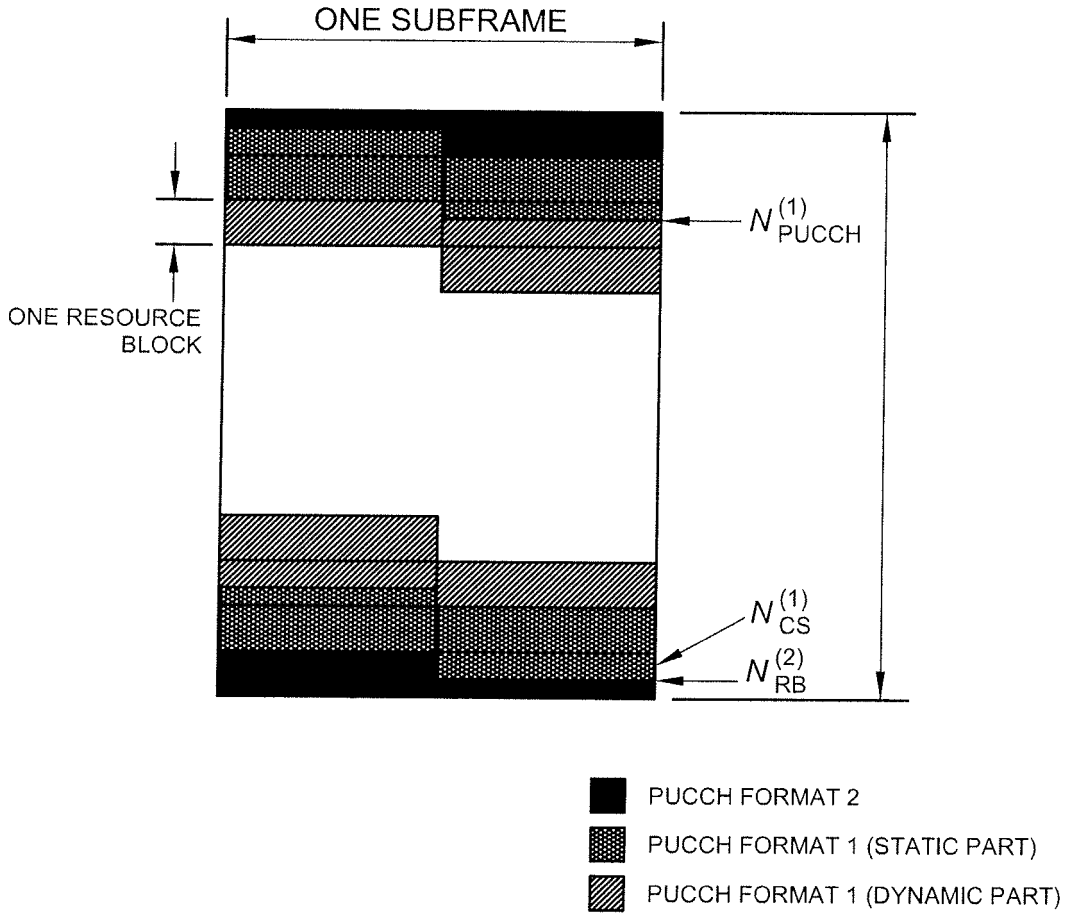
ONE SUBFRAME
ONE RESOURCE BLOCK
$N^{(1)}_{PUCCH}$
$N^{(1)}_{CS}$
$N^{(2)}_{RB}$
PUCCH FORMAT 2
PUCCH FORMAT 1 (STATIC PART)
PUCCH FORMAT 1 (DYNAMIC PART)

FIG. 7

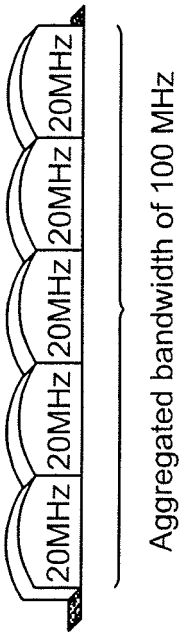
20MHz
20MHz
20MHz
20MHz
20MHz
Aggregated bandwidth of 100 MHz

FIG. 8

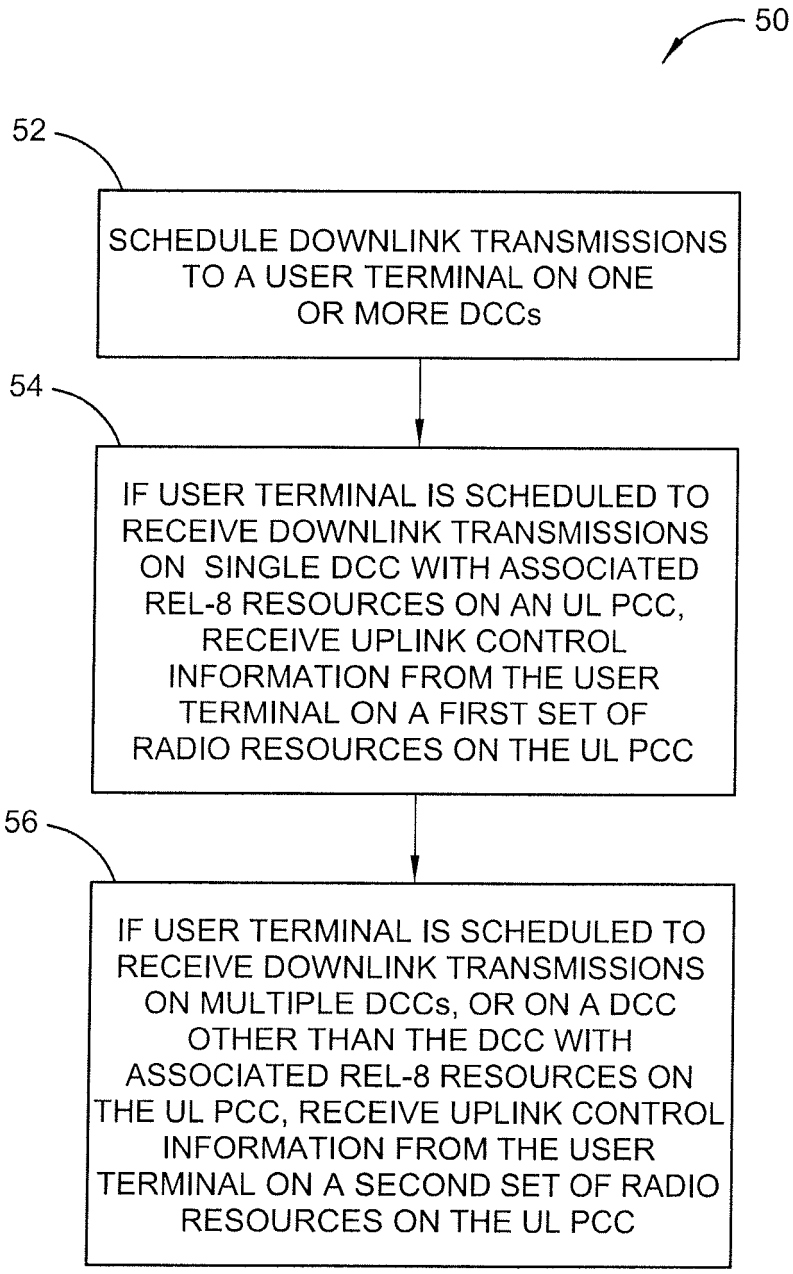
50
52
SCHEDULE DOWNLINK TRANSMISSIONS TO A USER TERMINAL ON ONE OR MORE DCCs
54
IF USER TERMINAL IS SCHEDULED TO RECEIVE DOWNLINK TRANSMISSIONS ON SINGLE DCC WITH ASSOCIATED REL-8 RESOURCES ON AN UL PCC, RECEIVE UPLINK CONTROL INFORMATION FROM THE USER TERMINAL ON A FIRST SET OF RADIO RESOURCES ON THE UL PCC
56
IF USER TERMINAL IS SCHEDULED TO RECEIVE DOWNLINK TRANSMISSIONS ON MULTIPLE DCCs, OR ON A DCC OTHER THAN THE DCC WITH ASSOCIATED REL-8 RESOURCES ON THE UL PCC, RECEIVE UPLINK CONTROL INFORMATION FROM THE USER TERMINAL ON A SECOND SET OF RADIO RESOURCES ON THE UL PCC

FIG. 9

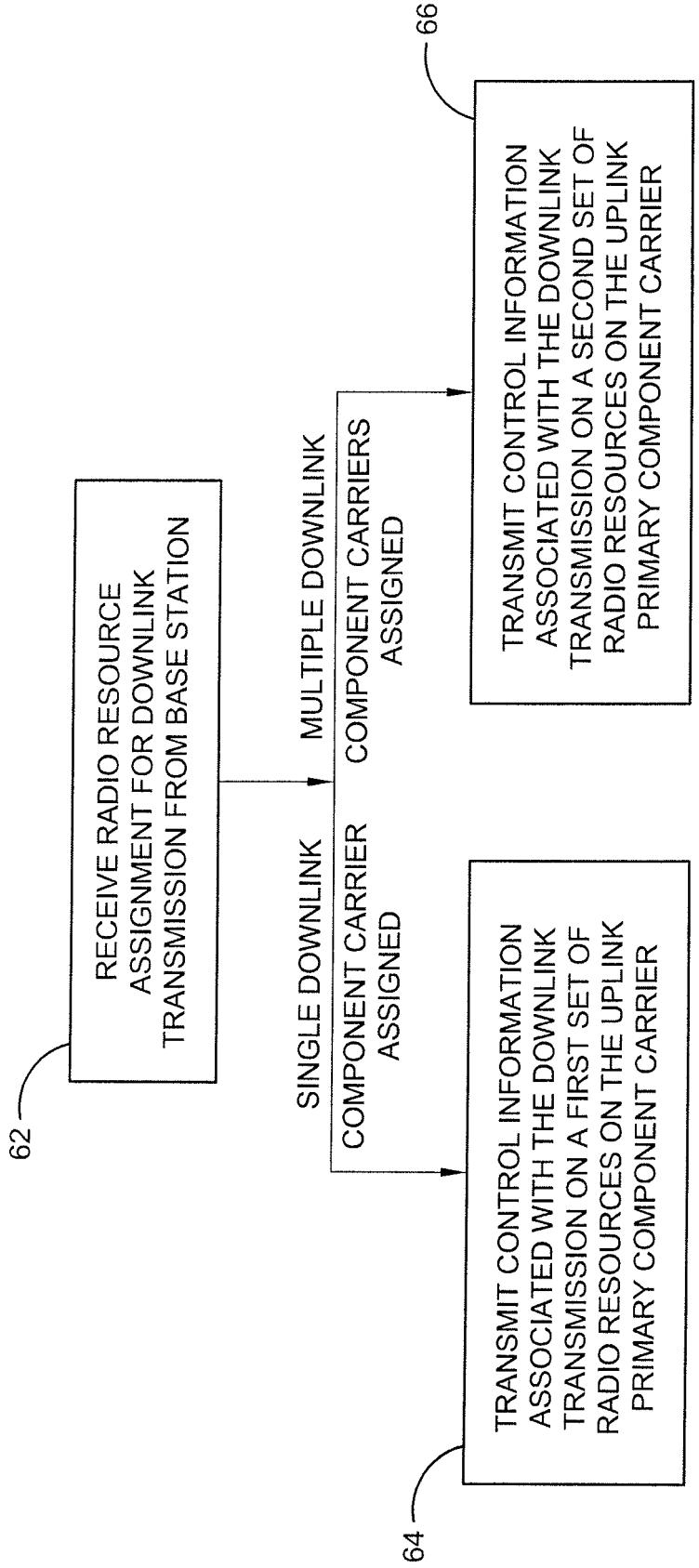
60
62
RECEIVE RADIO RESOURCE ASSIGNMENT FOR DOWNLINK TRANSMISSION FROM BASE STATION
SINGLE DOWNLINK COMPONENT CARRIER ASSIGNED
MULTIPLE DOWNLINK COMPONENT CARRIERS ASSIGNED
64
TRANSMIT CONTROL INFORMATION ASSOCIATED WITH THE DOWNLINK TRANSMISSION ON A FIRST SET OF RADIO RESOURCES ON THE UPLINK PRIMARY COMPONENT CARRIER
66
TRANSMIT CONTROL INFORMATION ASSOCIATED WITH THE DOWNLINK TRANSMISSION ON A SECOND SET OF RADIO RESOURCES ON THE UPLINK PRIMARY COMPONENT CARRIER

FIG. 10

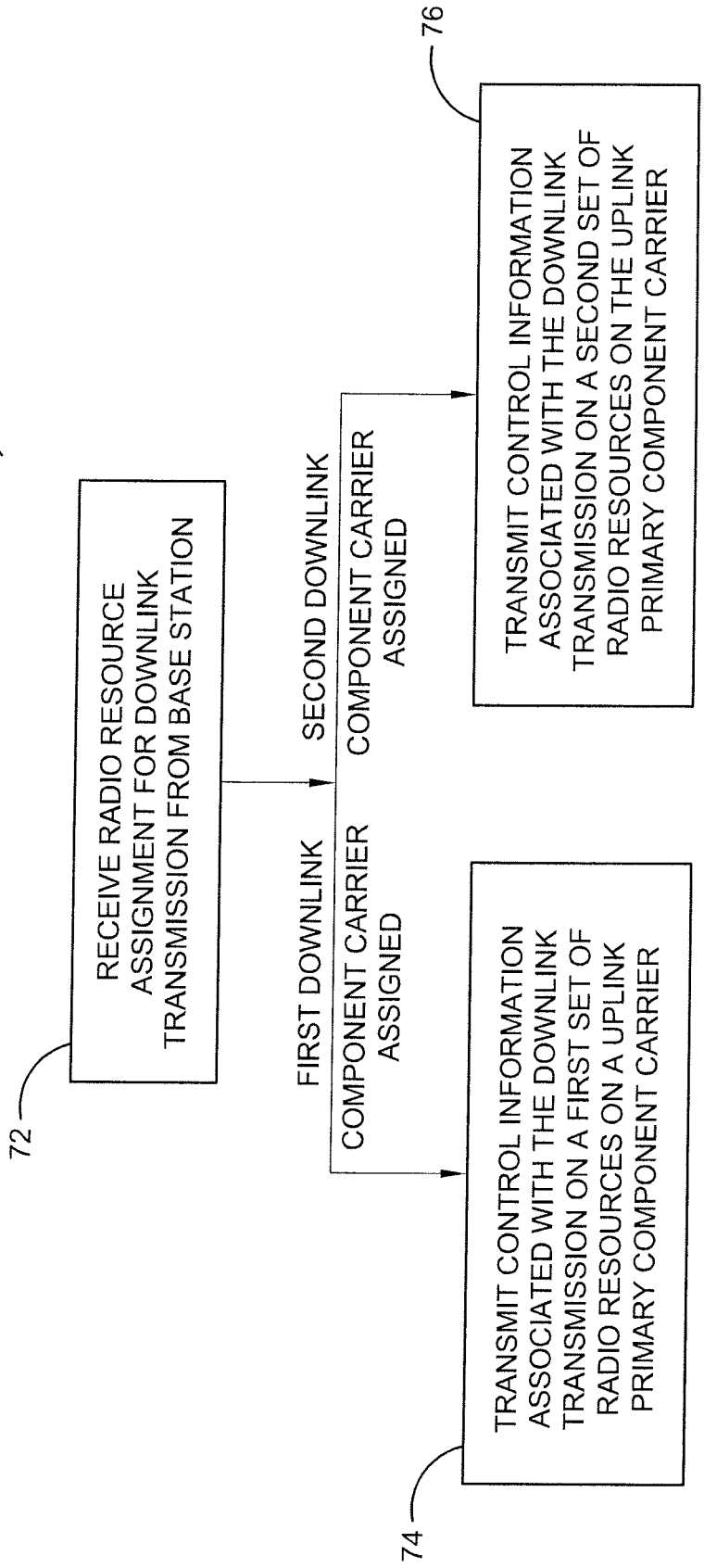
70
RECEIVE RADIO RESOURCE ASSIGNMENT FOR DOWNLINK TRANSMISSION FROM BASE STATION
72
FIRST DOWNLINK COMPONENT CARRIER ASSIGNED
SECOND DOWNLINK COMPONENT CARRIER ASSIGNED
TRANSMIT CONTROL INFORMATION ASSOCIATED WITH THE DOWNLINK TRANSMISSION ON A FIRST SET OF RADIO RESOURCES ON A UPLINK PRIMARY COMPONENT CARRIER
74
TRANSMIT CONTROL INFORMATION ASSOCIATED WITH THE DOWNLINK TRANSMISSION ON A SECOND SET OF RADIO RESOURCES ON THE UPLINK PRIMARY COMPONENT CARRIER
76

FIG. 11

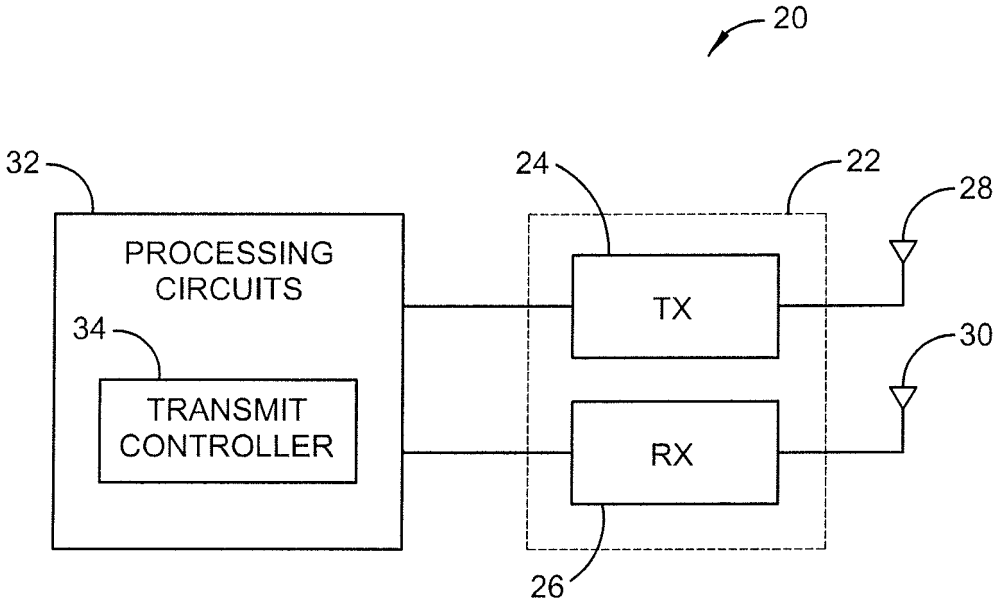
20
32
PROCESSING CIRCUITS
34
TRANSMIT CONTROLLER
24
22
28
TX
30
RX
26

FIG. 12

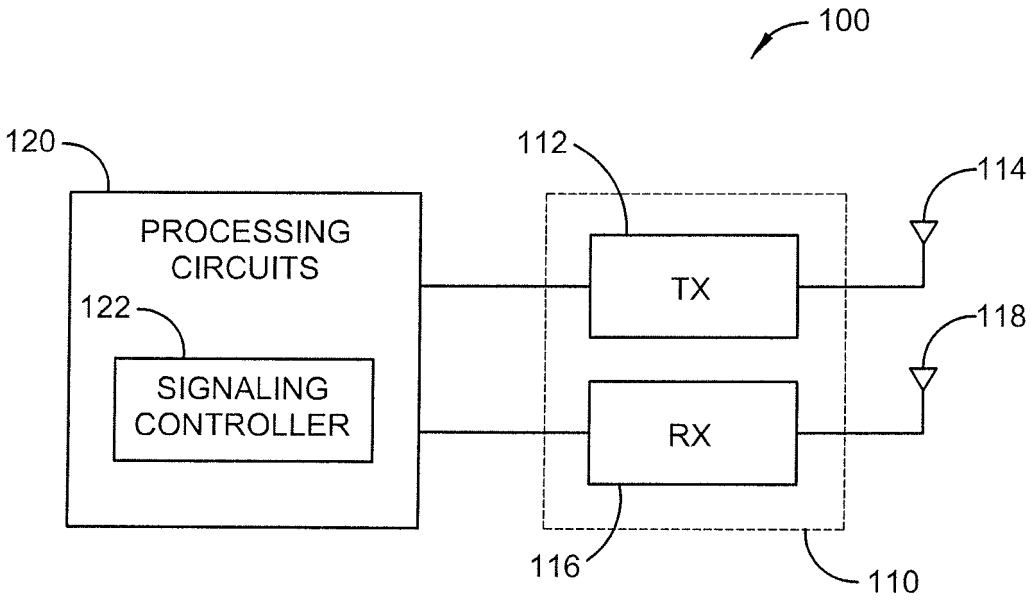
100
120
PROCESSING CIRCUITS
122
SIGNALING CONTROLLER
112
114
TX
118
RX
116
110

FIG. 13