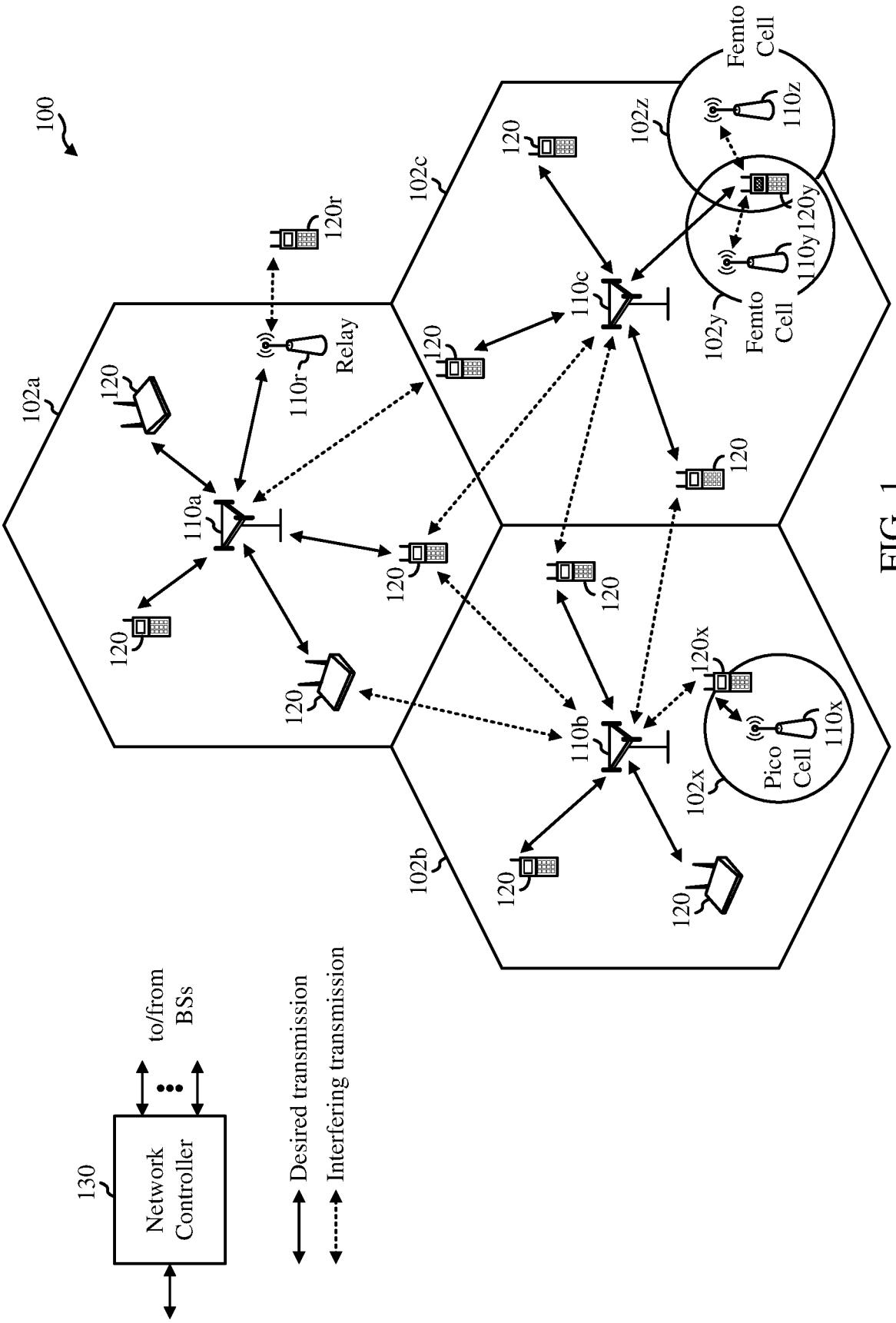

100
102a
102b
102c
102x
102y
102z
110a
110b
110c
110r
110x
110y
110z
120
120r
120x
120y
Relay
Pico Cell
Femto Cell
Femto Cell
130
Network Controller
to/from BSs
Desired transmission
Interfering transmission

FIG. 1

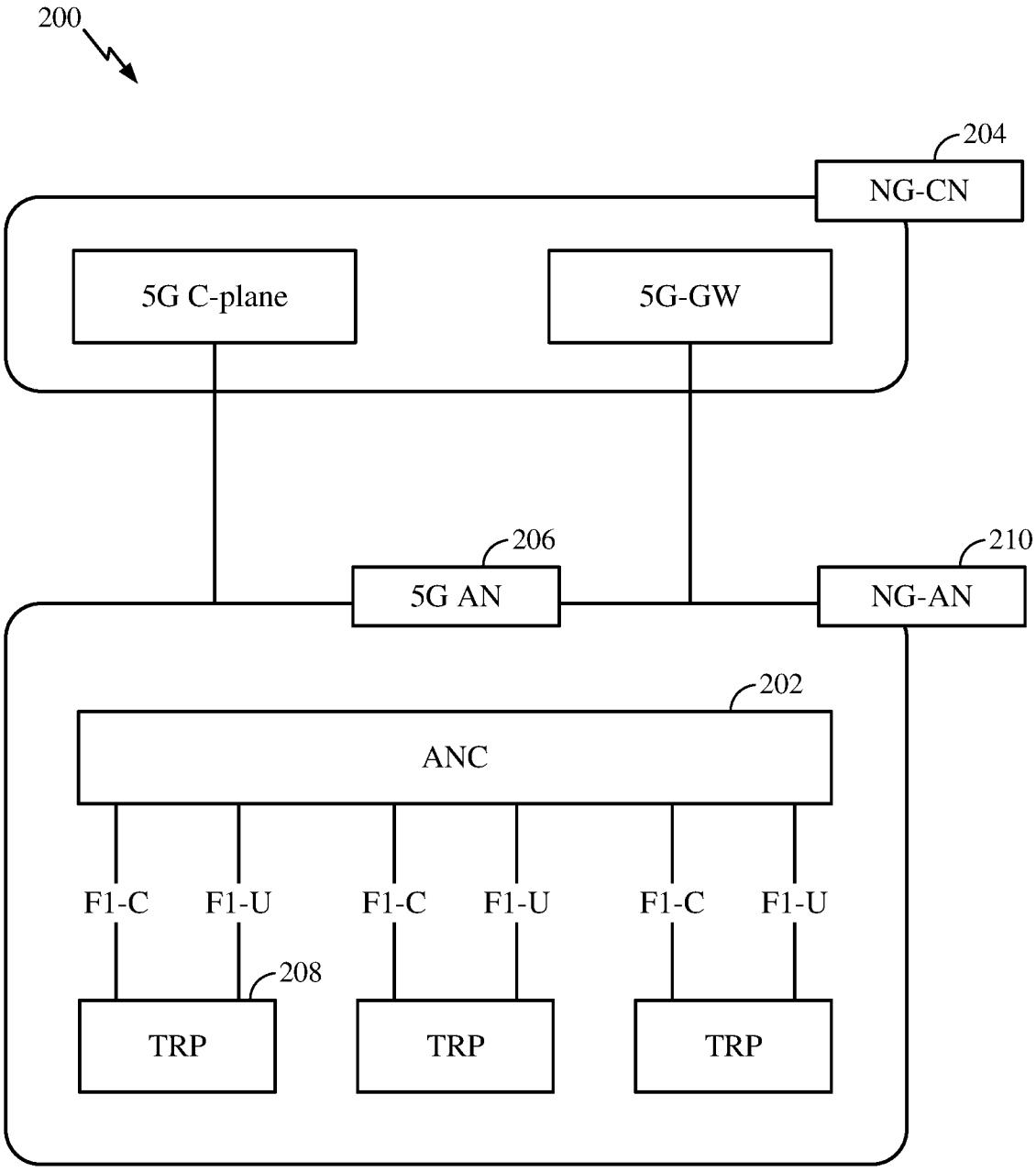

200
204
NG-CN
5G C-plane
5G-GW
206
5G AN
210
NG-AN
202
ANC
F1-C
F1-U
F1-C
F1-U
F1-C
F1-U
208
TRP
TRP
TRP

FIG. 2

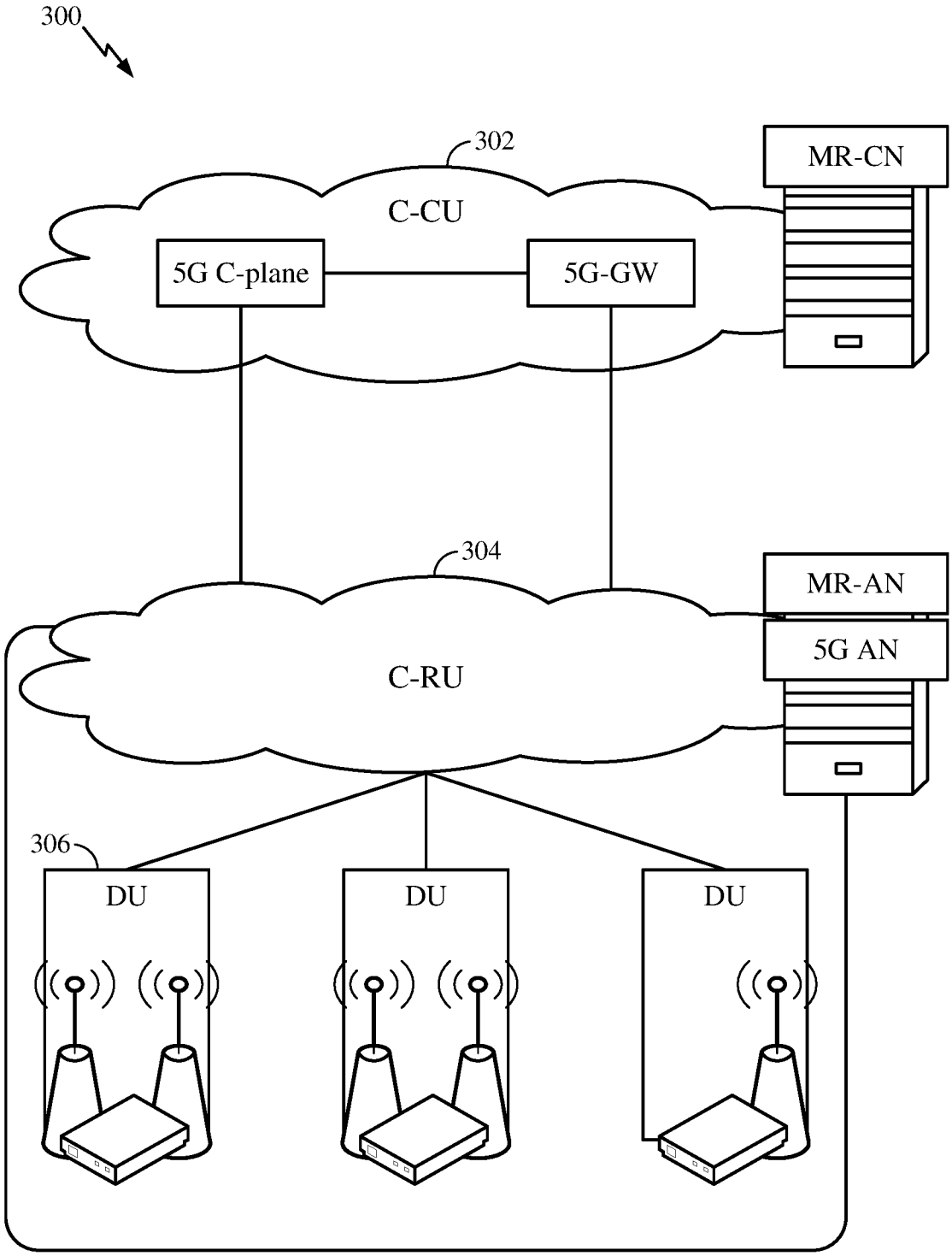


FIG. 3

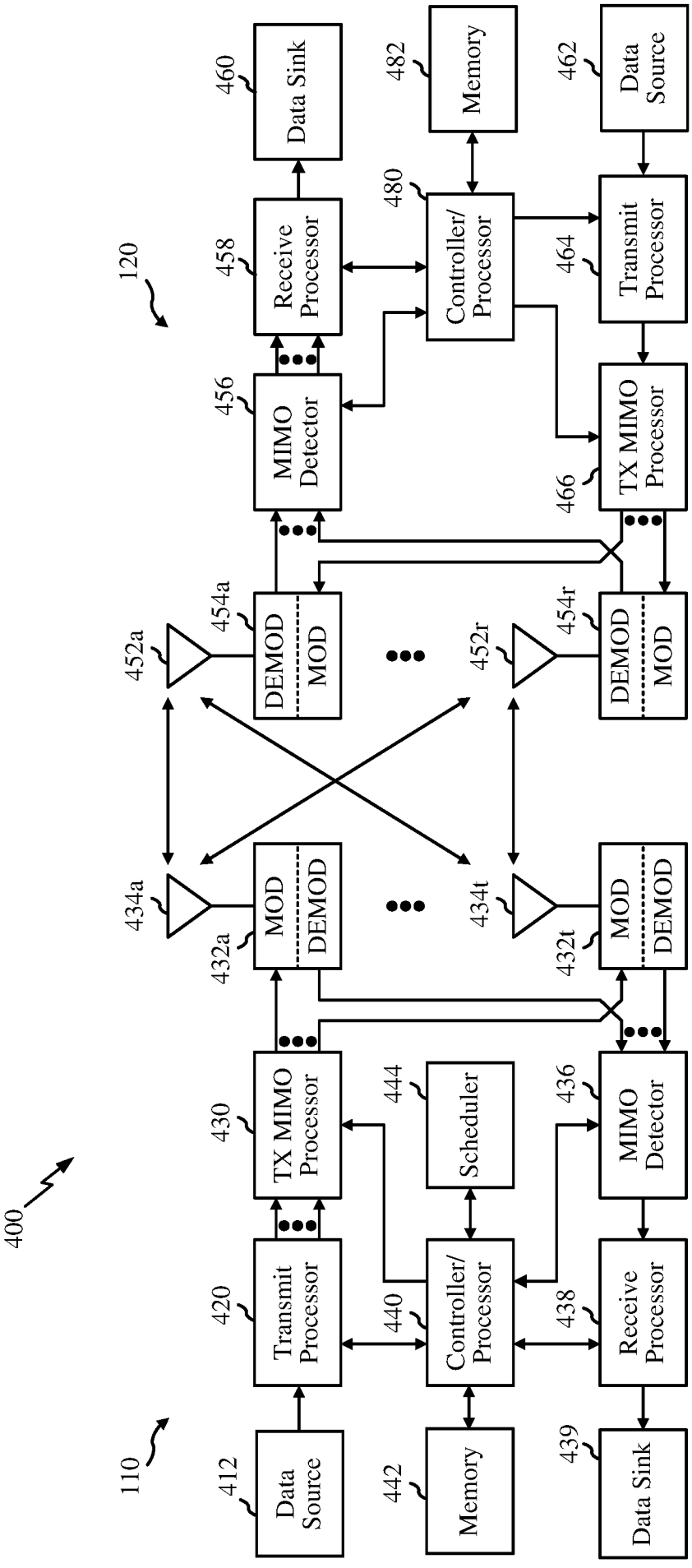

400
110
120
Data Source
412
Transmit Processor
420
TX MIMO Processor
430
MOD
DEMOD
432a
434a
452a
DEMOD
MOD
454a
MIMO Detector
456
Receive Processor
458
Data Sink
460
Memory
442
Controller/ Processor
440
Scheduler
444
Memory
482
Controller/ Processor
480
Data Source
462
Transmit Processor
464
TX MIMO Processor
466
MOD
DEMOD
432t
434t
452r
DEMOD
MOD
454r
MIMO Detector
436
Receive Processor
438
Data Sink
439

FIG. 4

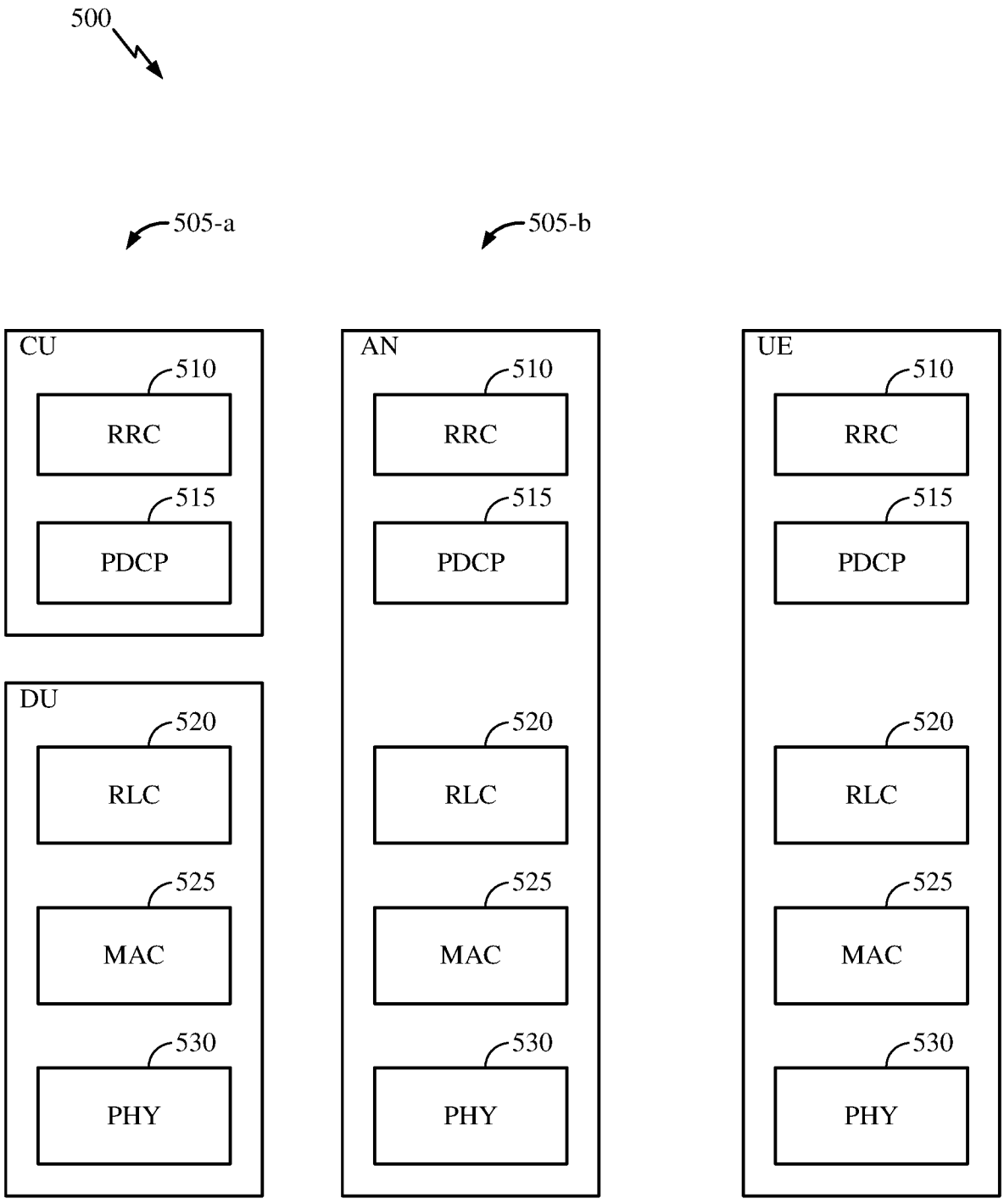

500
505-a
505-b
CU
510
RRC
515
PDCP
DU
520
RLC
525
MAC
530
PHY
AN
510
RRC
515
PDCP
520
RLC
525
MAC
530
PHY
UE
510
RRC
515
PDCP
520
RLC
525
MAC
530
PHY

FIG. 5

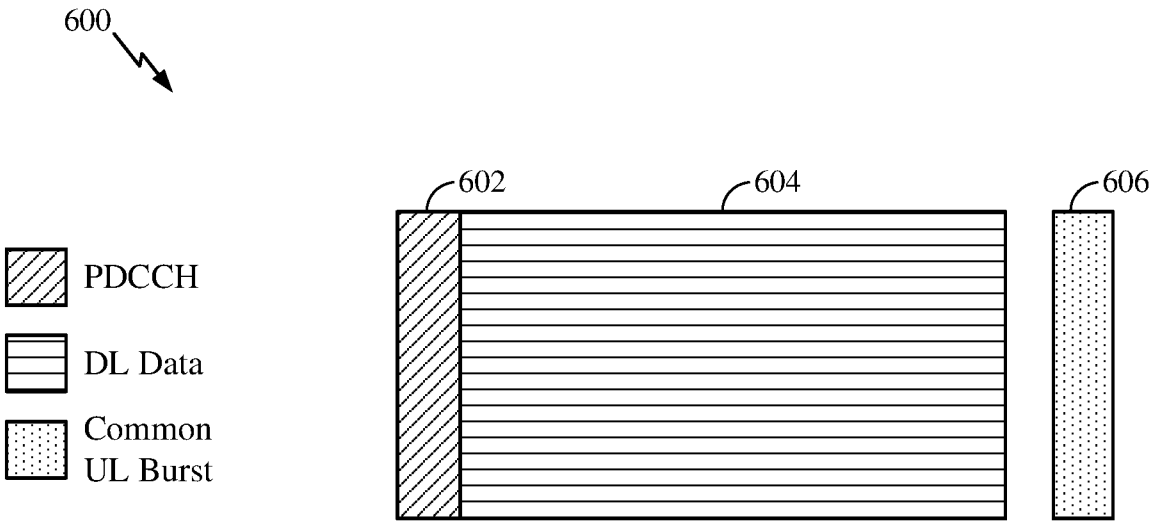

600
602
604
606
PDCCH
DL Data
Common
UL Burst

FIG. 6

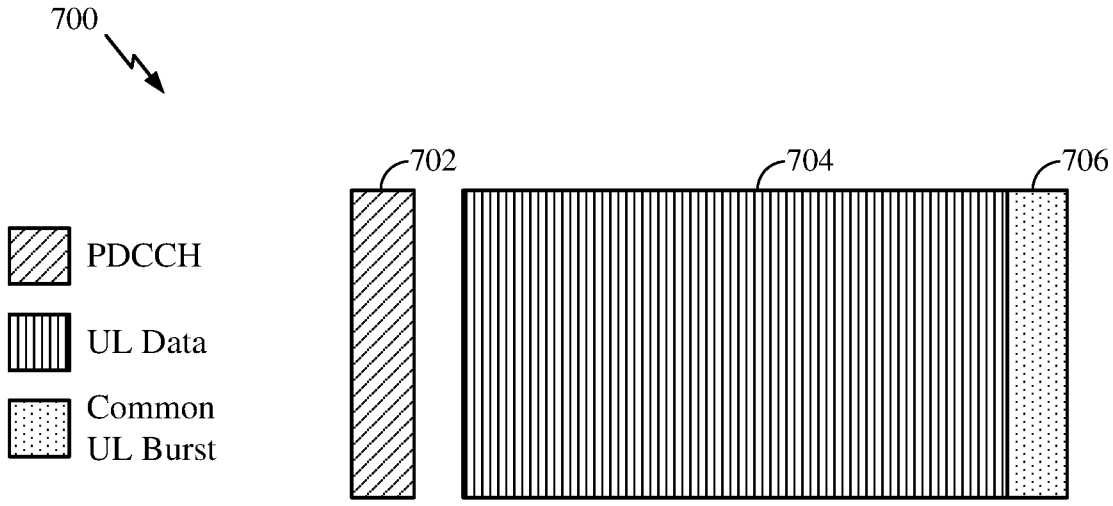

700
702
704
706
PDCCH
UL Data
Common
UL Burst

FIG. 7

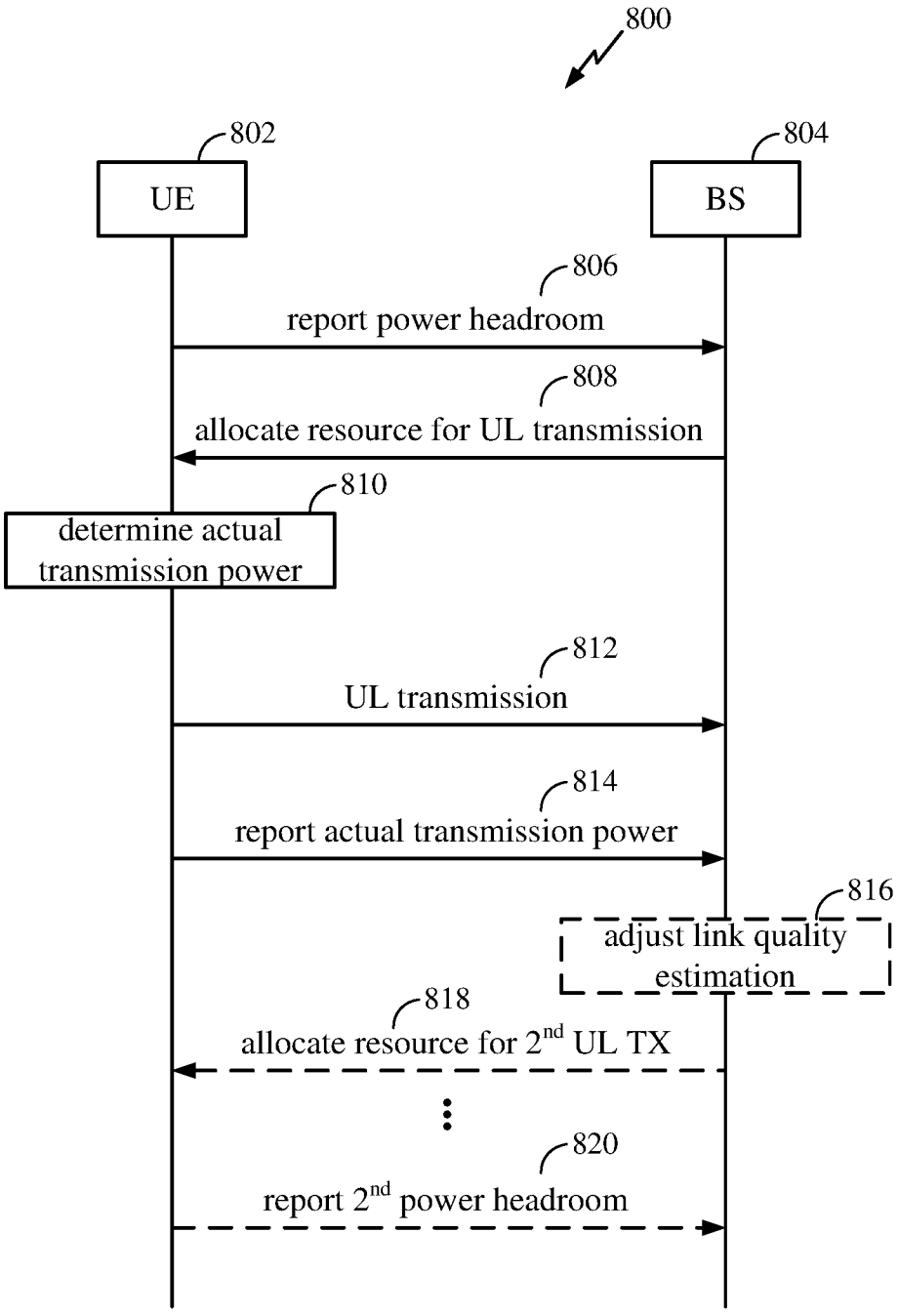

800
802
UE
804
BS
806
report power headroom
808
allocate resource for UL transmission
810
determine actual transmission power
812
UL transmission
814
report actual transmission power
816
adjust link quality estimation
818
allocate resource for 2nd UL TX
820
report 2nd power headroom

FIG. 8

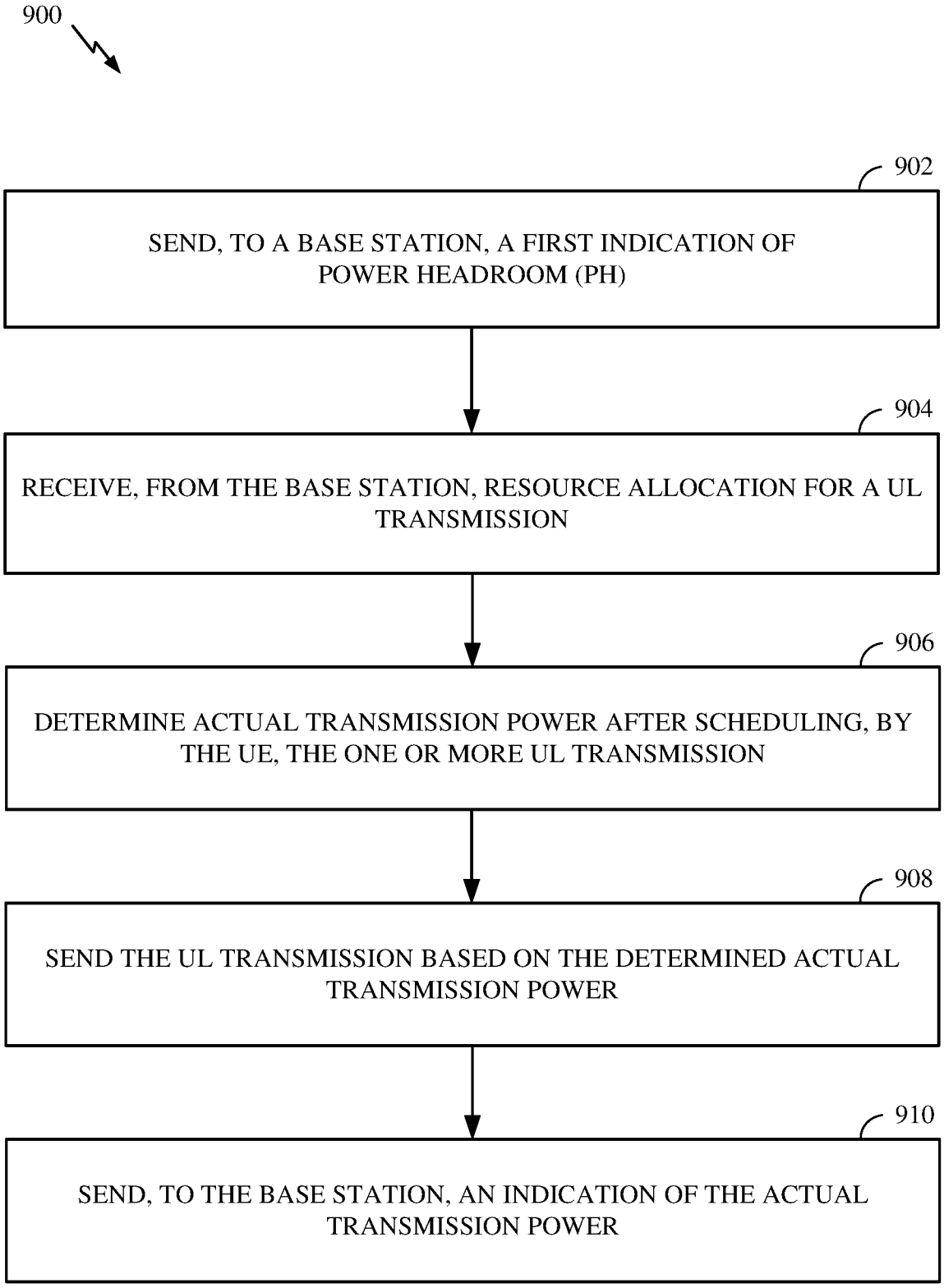

900
902
SEND, TO A BASE STATION, A FIRST INDICATION OF POWER HEADROOM (PH)
904
RECEIVE, FROM THE BASE STATION, RESOURCE ALLOCATION FOR A UL TRANSMISSION
906
DETERMINE ACTUAL TRANSMISSION POWER AFTER SCHEDULING, BY THE UE, THE ONE OR MORE UL TRANSMISSION
908
SEND THE UL TRANSMISSION BASED ON THE DETERMINED ACTUAL TRANSMISSION POWER
910
SEND, TO THE BASE STATION, AN INDICATION OF THE ACTUAL TRANSMISSION POWER

FIG. 9

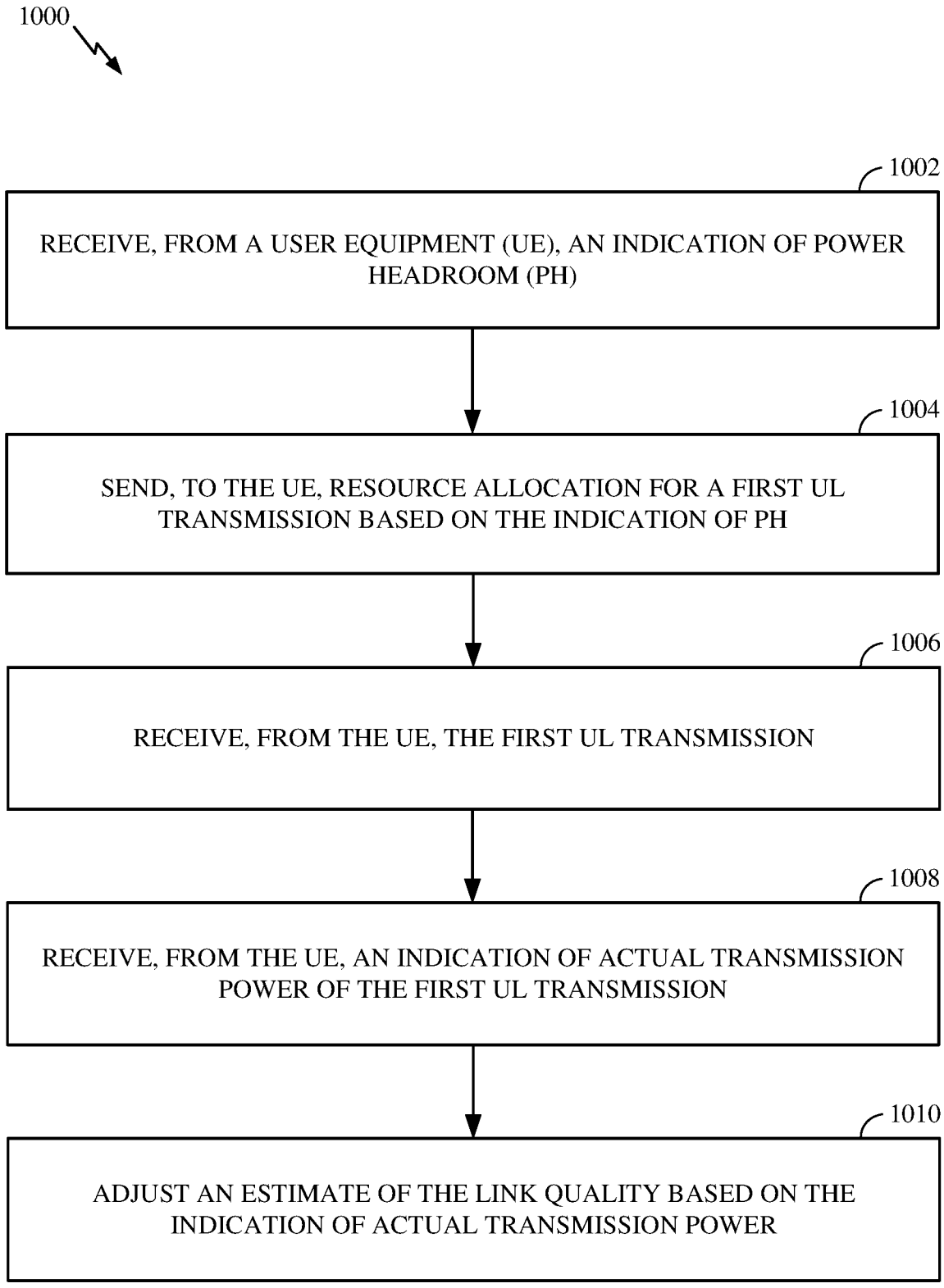

1000
1002
RECEIVE, FROM A USER EQUIPMENT (UE), AN INDICATION OF POWER HEADROOM (PH)
1004
SEND, TO THE UE, RESOURCE ALLOCATION FOR A FIRST UL TRANSMISSION BASED ON THE INDICATION OF PH
1006
RECEIVE, FROM THE UE, THE FIRST UL TRANSMISSION
1008
RECEIVE, FROM THE UE, AN INDICATION OF ACTUAL TRANSMISSION POWER OF THE FIRST UL TRANSMISSION
1010
ADJUST AN ESTIMATE OF THE LINK QUALITY BASED ON THE INDICATION OF ACTUAL TRANSMISSION POWER

FIG. 10