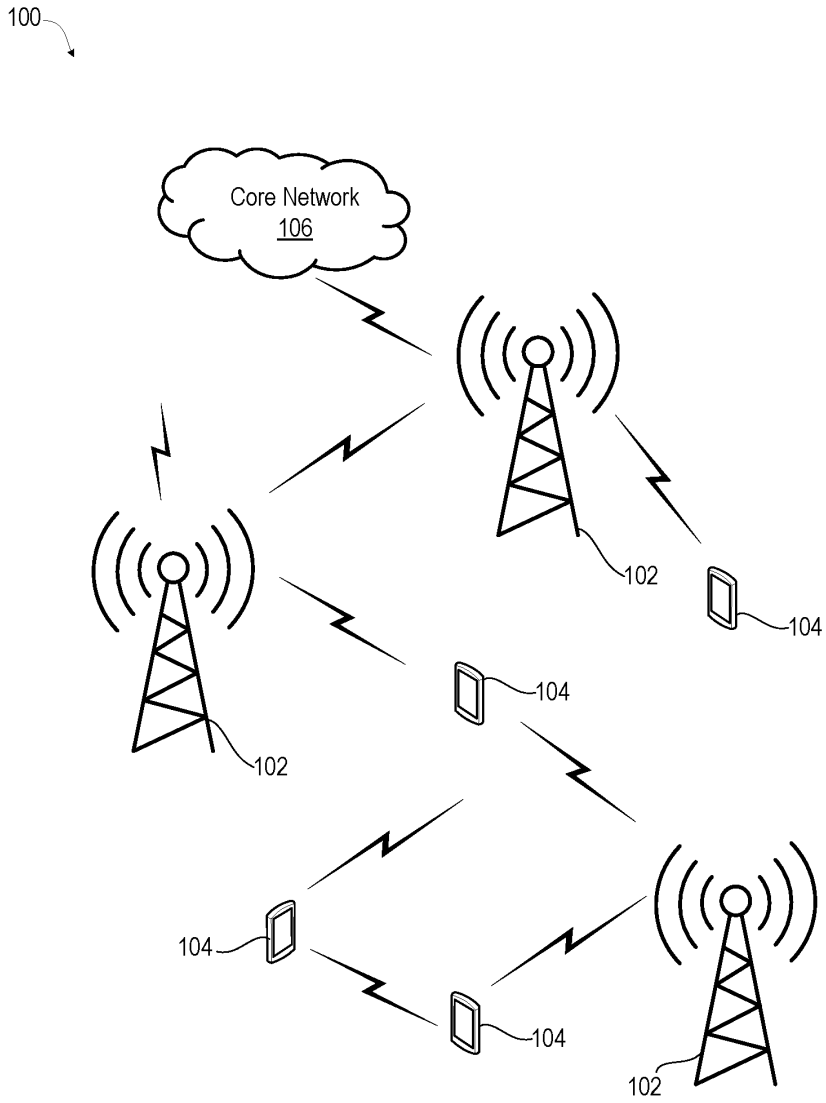


FIG. 1

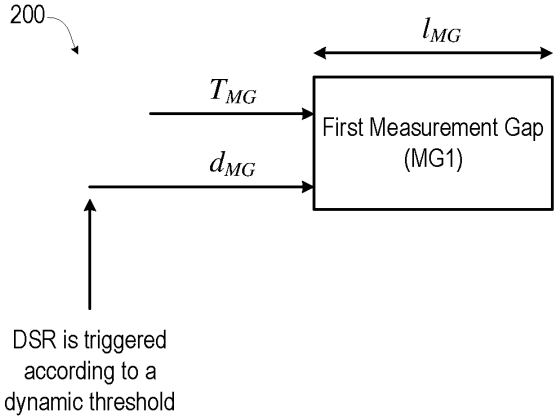

200
l_{MG}
T_{MG}
d_{MG}
First Measurement Gap (MG1)
DSR is triggered according to a dynamic threshold

FIG. 2

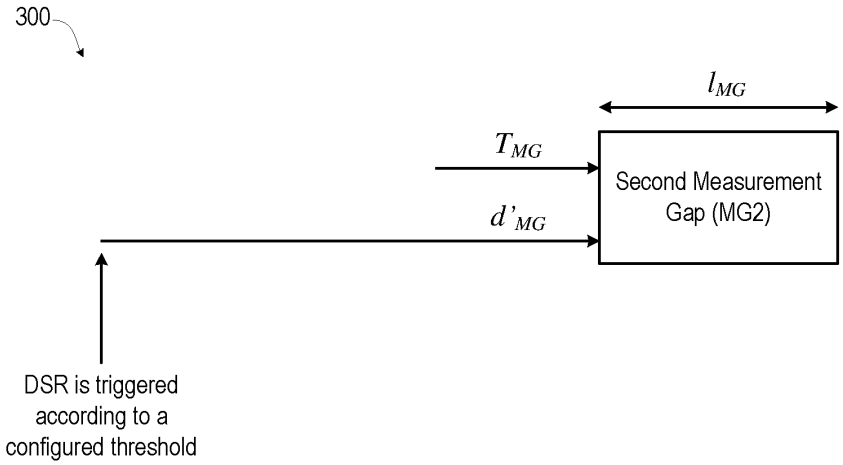

300
l_{MG}
T_{MG}
d'_{MG}
Second Measurement Gap (MG2)
DSR is triggered according to a configured threshold

FIG. 3

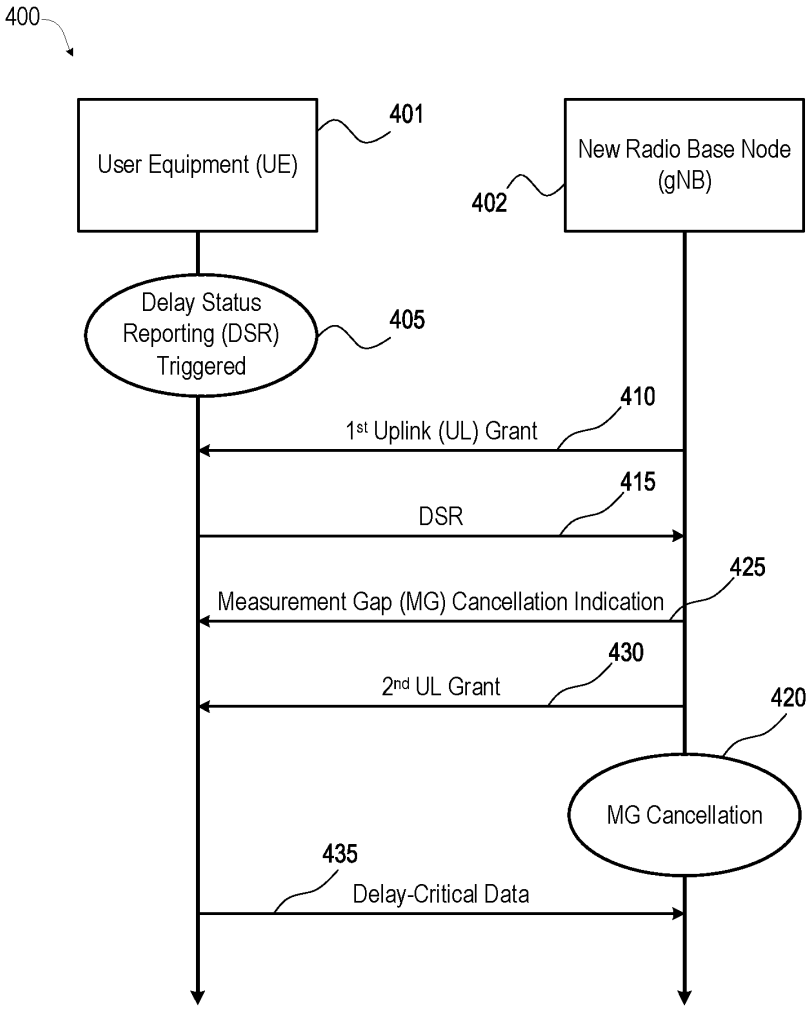

400
User Equipment (UE)
401
New Radio Base Node (gNB)
402
Delay Status Reporting (DSR) Triggered
405
410
1st Uplink (UL) Grant
415
DSR
425
Measurement Gap (MG) Cancellation Indication
430
2nd UL Grant
420
MG Cancellation
435
Delay-Critical Data

FIG. 4

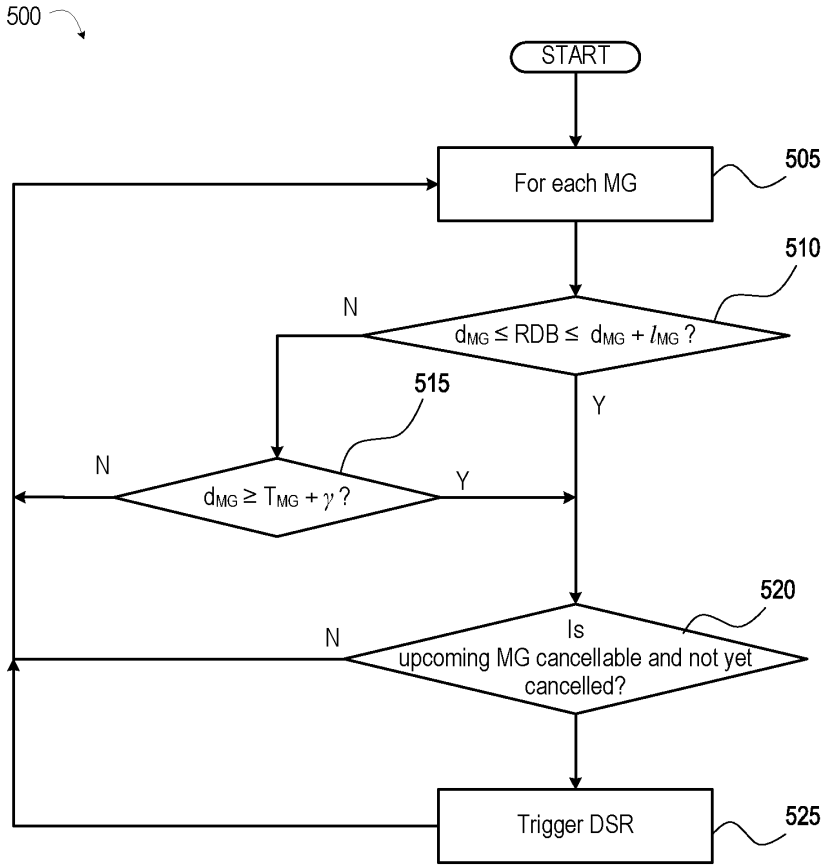

500
START
For each MG
505
510
N
$d_{MG} \leq RDB \leq d_{MG} + l_{MG}$?
Y
515
N
$d_{MG} \geq T_{MG} + \gamma$?
Y
520
N
Is upcoming MG cancellable and not yet cancelled?
Trigger DSR
525

FIG.5

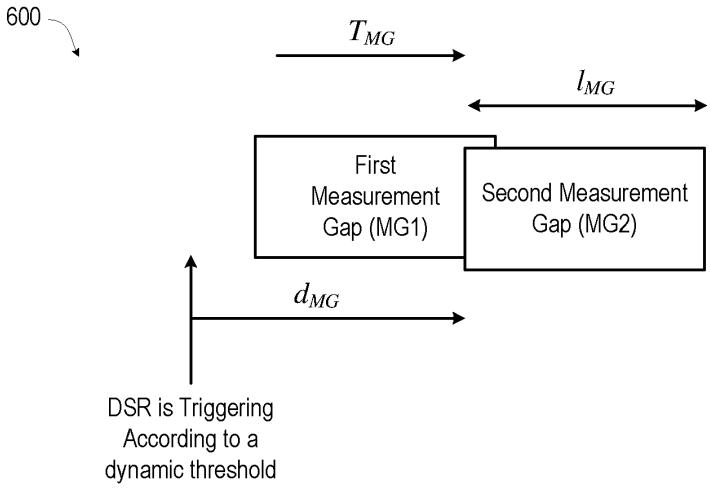

600
T_{MG}
l_{MG}
First Measurement Gap (MG1)
Second Measurement Gap (MG2)
d_{MG}
DSR is Triggering According to a dynamic threshold

FIG. 6

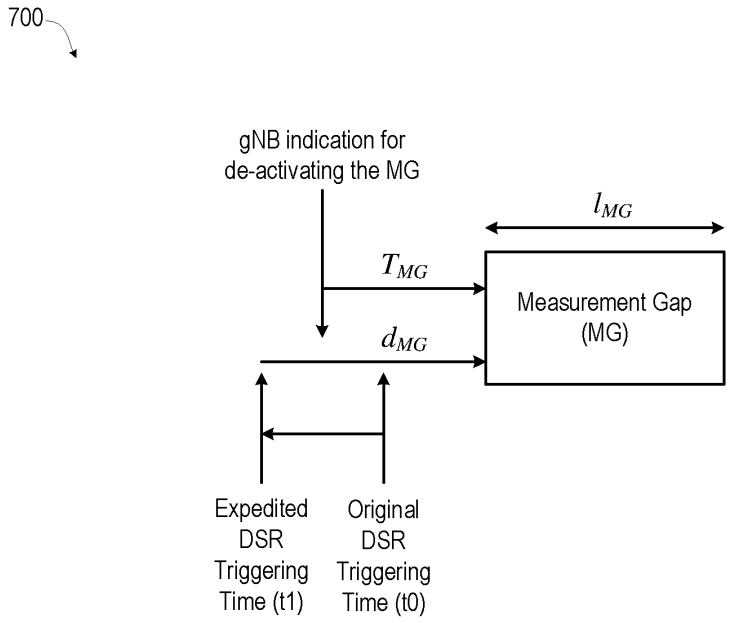

700
gNB indication for de-activating the MG
l_{MG}
T_{MG}
d_{MG}
Measurement Gap (MG)
Expedited DSR Triggering Time (t1)
Original DSR Triggering Time (t0)

FIG. 7

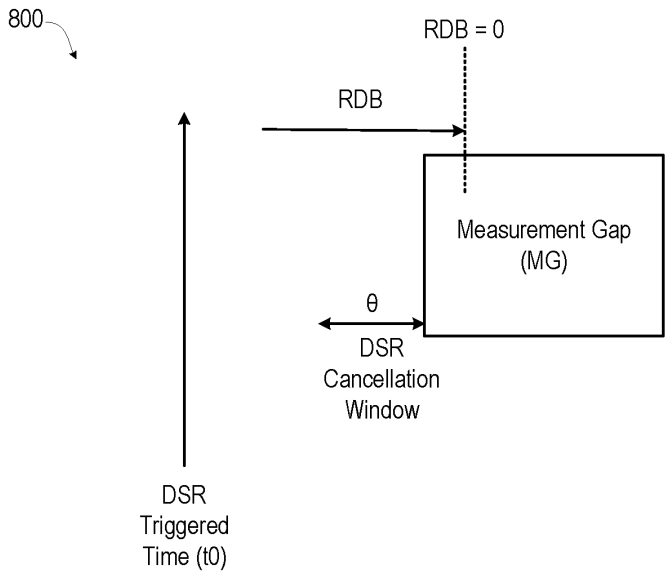

800
RDB = 0
RDB
Measurement Gap
(MG)
θ
DSR
Cancellation
Window
DSR
Triggered
Time (t0)

FIG. 8

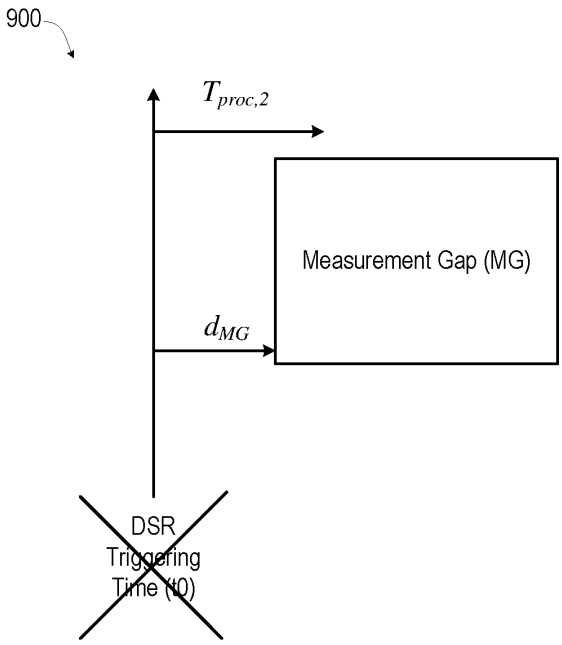


FIG. 9

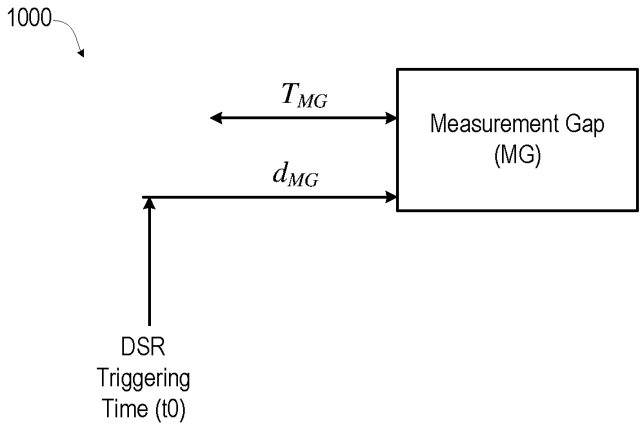


FIG. 10

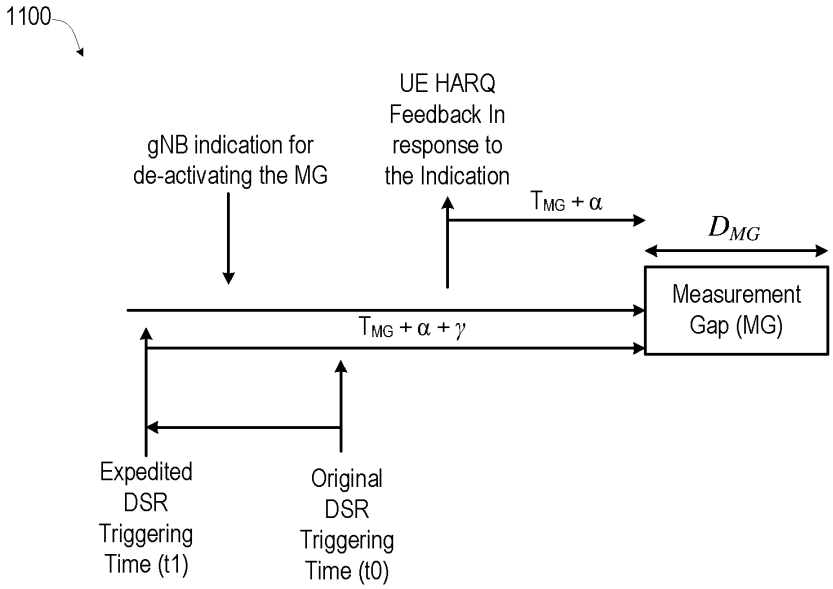

1100
gNB indication for de-activating the MG
UE HARQ Feedback In response to the Indication
$T_{MG} + \alpha$
D_{MG}
Measurement Gap (MG)
$T_{MG} + \alpha + \gamma$
Expedited DSR Triggering Time (t1)
Original DSR Triggering Time (t0)

FIG. 11

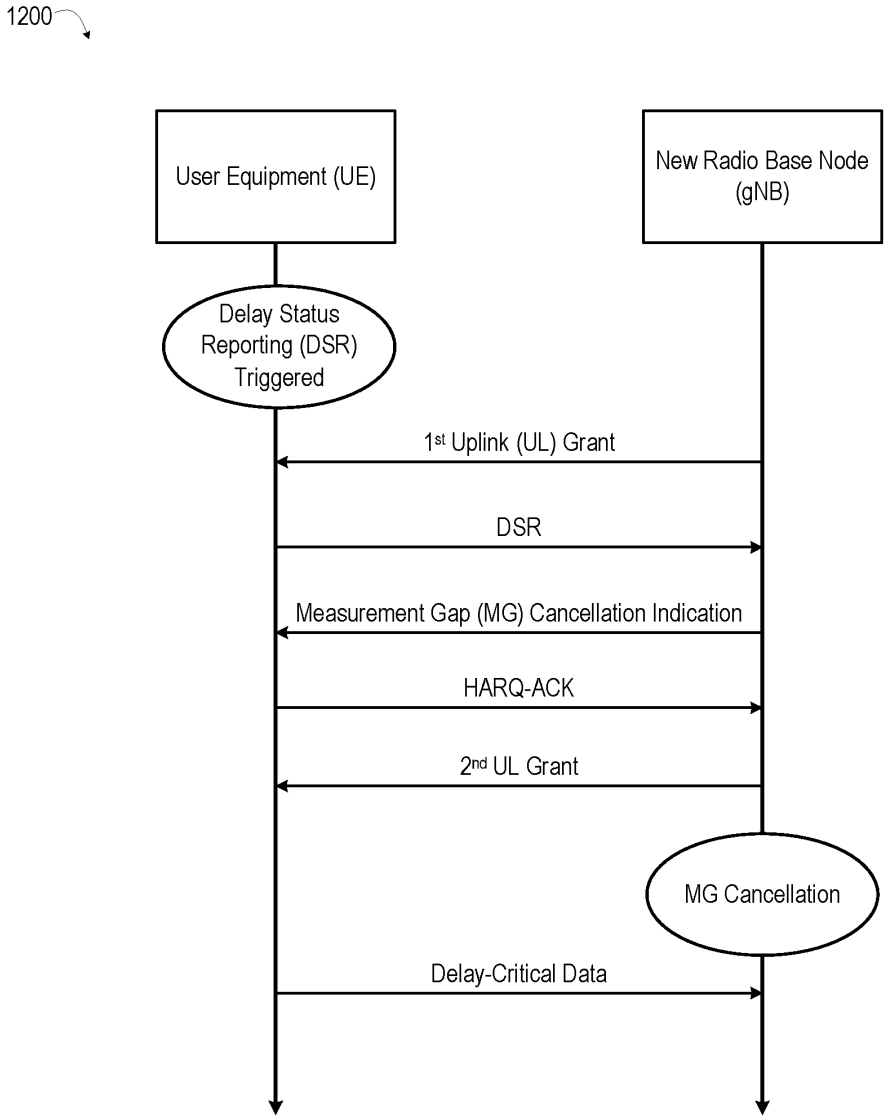

1200
User Equipment (UE)
New Radio Base Node (gNB)
Delay Status Reporting (DSR) Triggered
1st Uplink (UL) Grant
DSR
Measurement Gap (MG) Cancellation Indication
HARQ-ACK
2nd UL Grant
MG Cancellation
Delay-Critical Data

FIG. 12

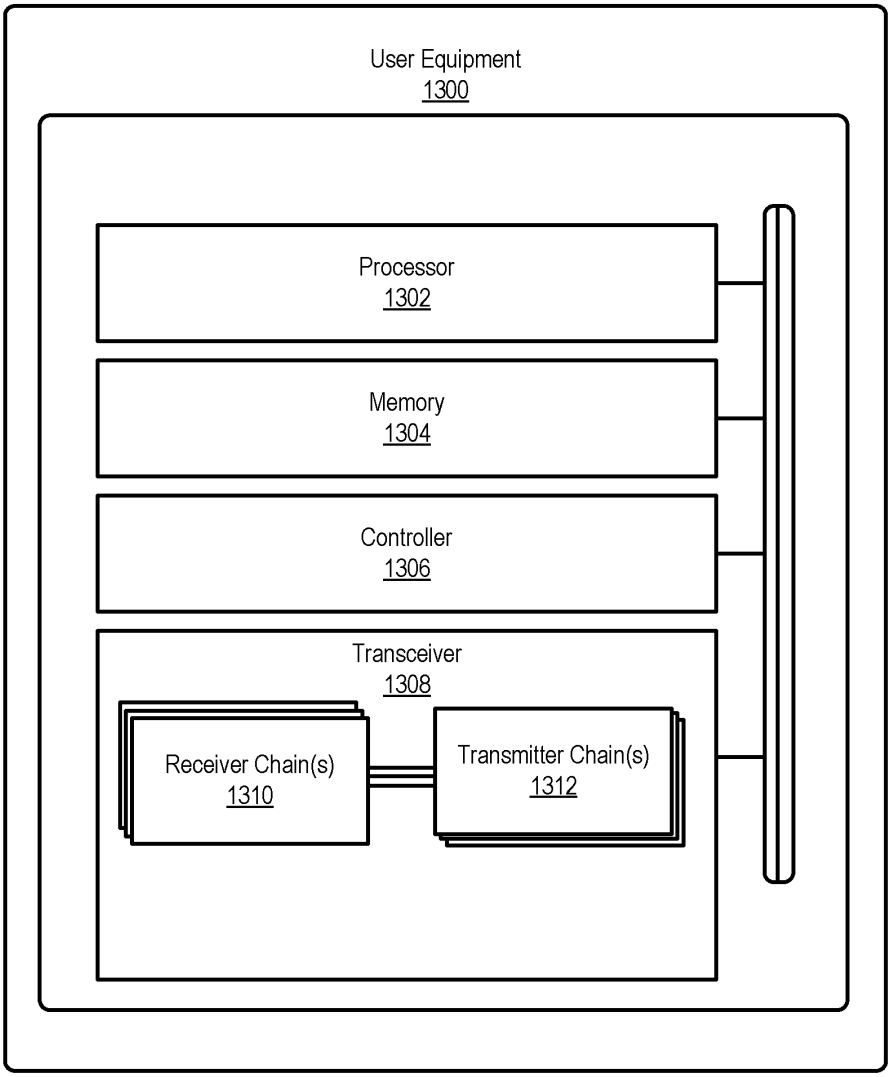

User Equipment
1300
Processor
1302
Memory
1304
Controller
1306
Transceiver
1308
Receiver Chain(s)
1310
Transmitter Chain(s)
1312

FIG. 13

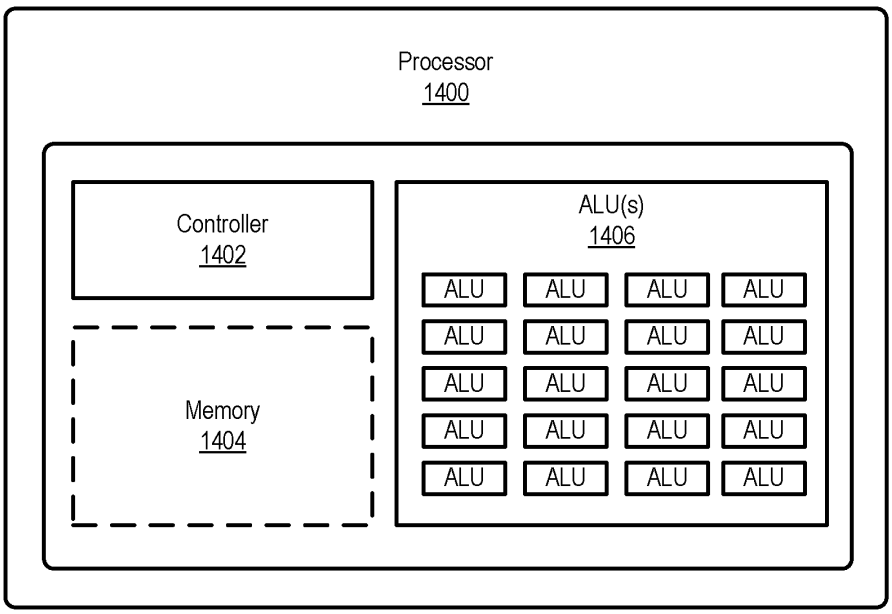

Processor
1400
Controller
1402
Memory
1404
ALU(s)
1406
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU
ALU

FIG. 14

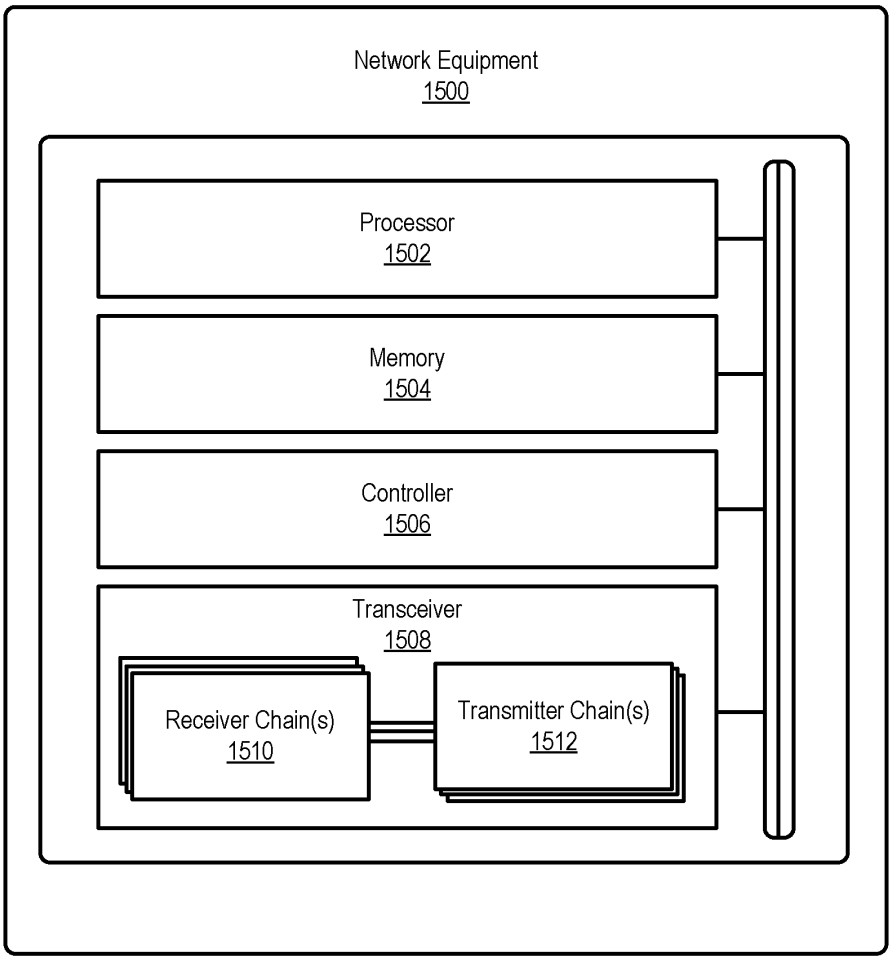

Network Equipment
1500
Processor
1502
Memory
1504
Controller
1506
Transceiver
1508
Receiver Chain(s)
1510
Transmitter Chain(s)
1512

FIG. 15

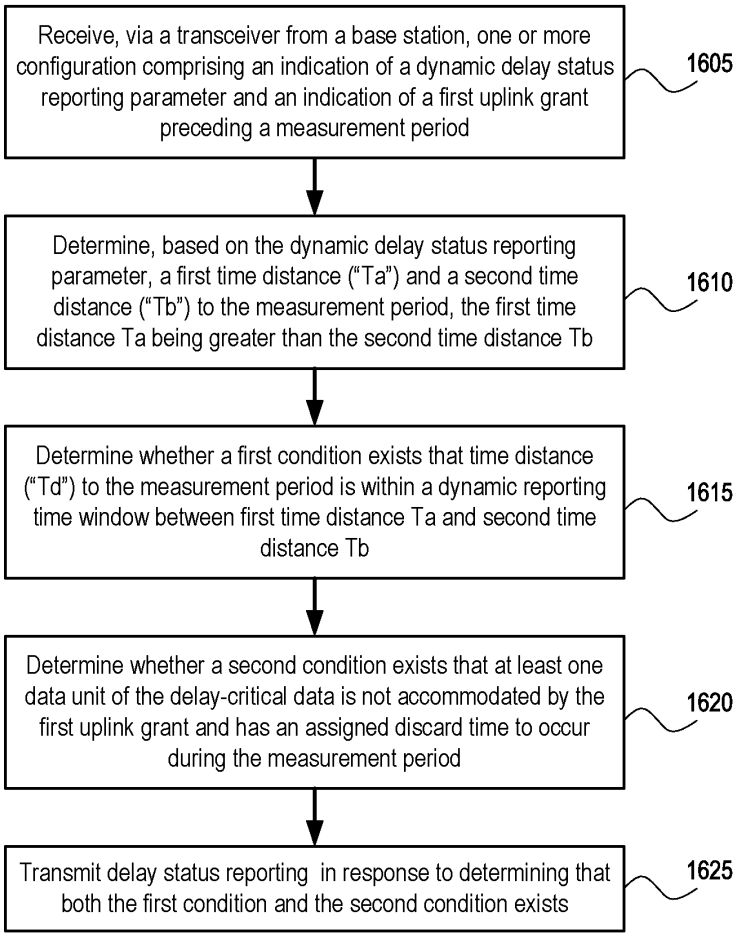

Receive, via a transceiver from a base station, one or more configuration comprising an indication of a dynamic delay status reporting parameter and an indication of a first uplink grant preceding a measurement period
1605
Determine, based on the dynamic delay status reporting parameter, a first time distance ("Ta") and a second time distance ("Tb") to the measurement period, the first time distance Ta being greater than the second time distance Tb
1610
Determine whether a first condition exists that time distance ("Td") to the measurement period is within a dynamic reporting time window between first time distance Ta and second time distance Tb
1615
Determine whether a second condition exists that at least one data unit of the delay-critical data is not accommodated by the first uplink grant and has an assigned discard time to occur during the measurement period
1620
Transmit delay status reporting in response to determining that both the first condition and the second condition exists
1625

FIG. 16

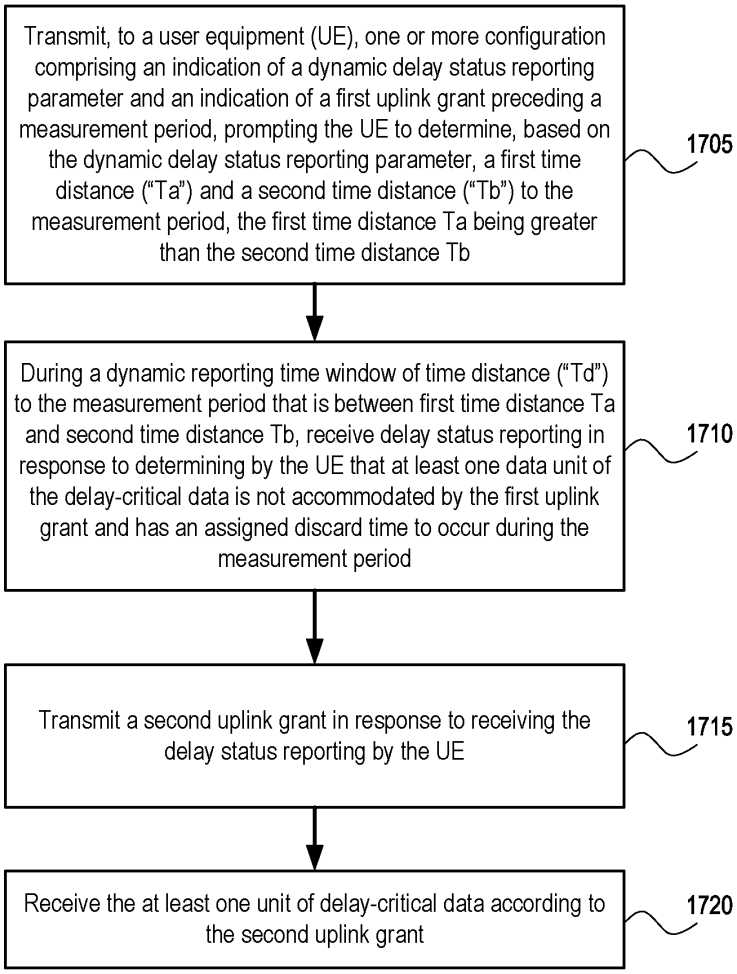

Transmit, to a user equipment (UE), one or more configuration comprising an indication of a dynamic delay status reporting parameter and an indication of a first uplink grant preceding a measurement period, prompting the UE to determine, based on the dynamic delay status reporting parameter, a first time distance ("Ta") and a second time distance ("Tb") to the measurement period, the first time distance Ta being greater than the second time distance Tb
1705
During a dynamic reporting time window of time distance ("Td") to the measurement period that is between first time distance Ta and second time distance Tb, receive delay status reporting in response to determining by the UE that at least one data unit of the delay-critical data is not accommodated by the first uplink grant and has an assigned discard time to occur during the measurement period
1710
Transmit a second uplink grant in response to receiving the delay status reporting by the UE
1715
Receive the at least one unit of delay-critical data according to the second uplink grant
1720

FIG. 17