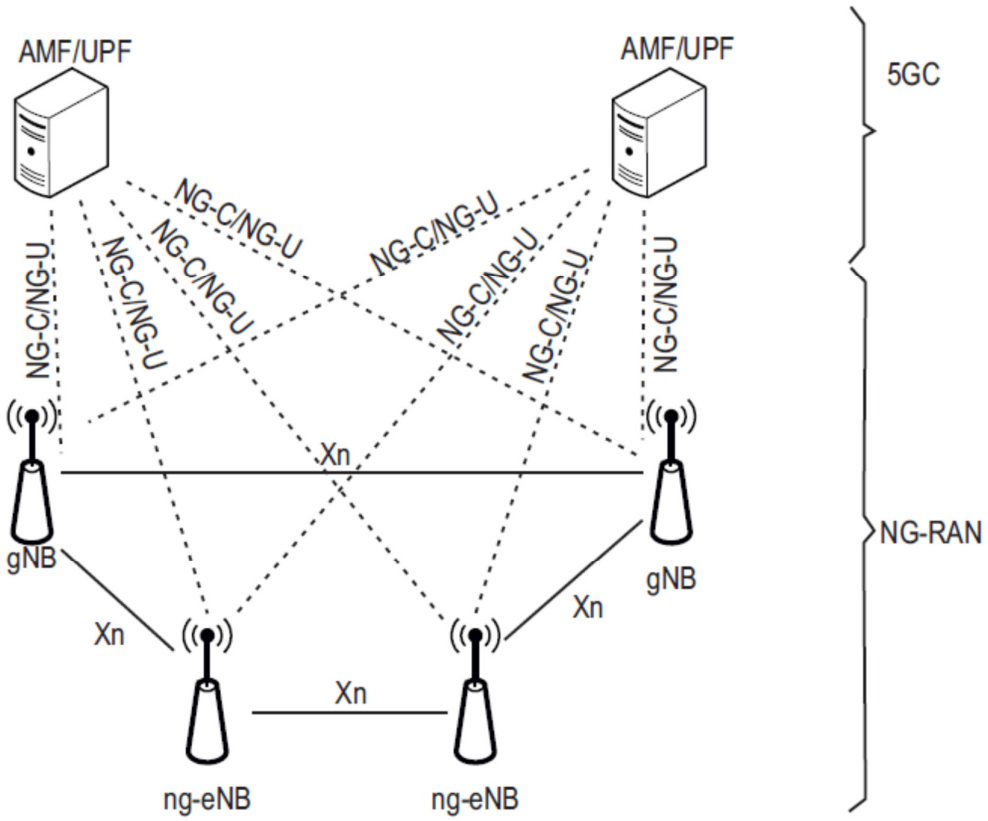

AMF/UPF
AMF/UPF
5GC
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
NG-C/NG-U
Xn
gNB
gNB
Xn
Xn
Xn
ng-eNB
ng-eNB
NG-RAN

FIG. 1

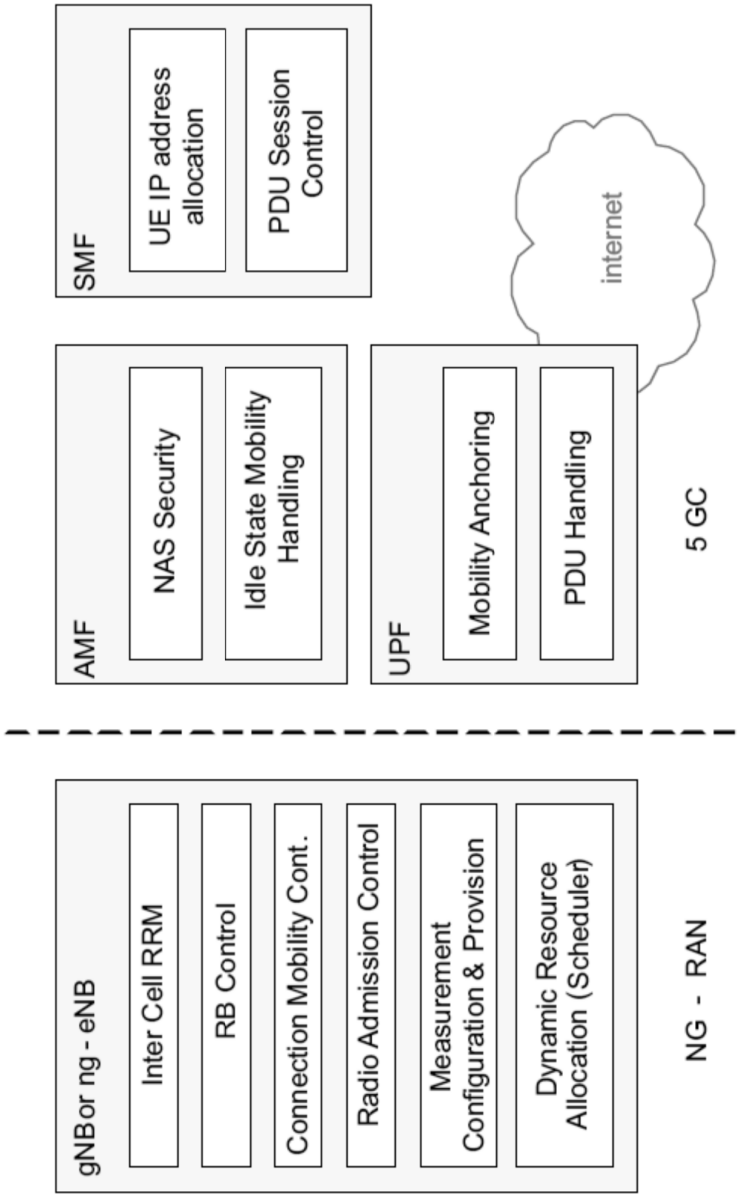

gNBor ng - eNB
Inter Cell RRM
RB Control
Connection Mobility Cont.
Radio Admission Control
Measurement Configuration & Provision
Dynamic Resource Allocation (Scheduler)
NG - RAN
AMF
NAS Security
Idle State Mobility Handling
UPF
Mobility Anchoring
PDU Handling
5 GC
SMF
UE IP address allocation
PDU Session Control
internet

FIG. 2

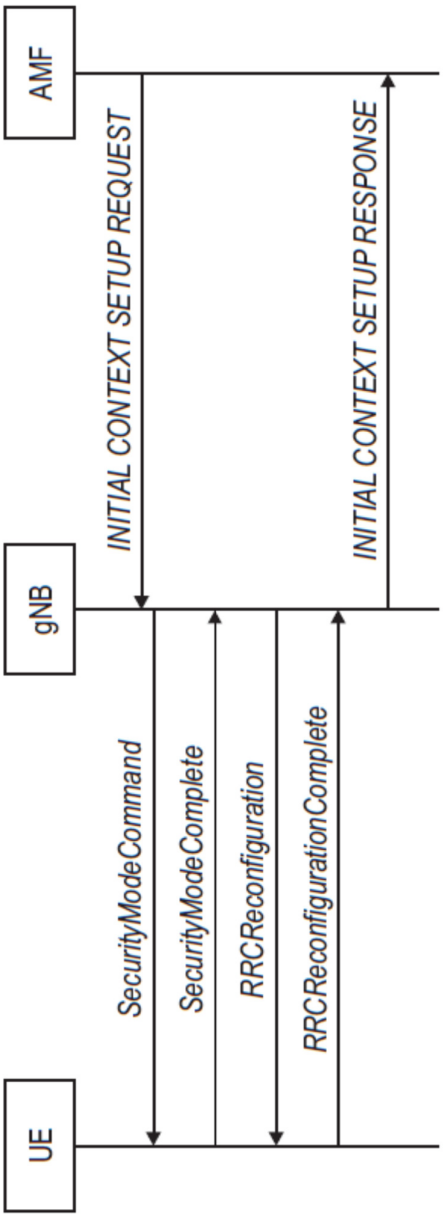

AMF
gNB
UE
INITIAL CONTEXT SETUP REQUEST
INITIAL CONTEXT SETUP RESPONSE
SecurityModeCommand
SecurityModeComplete
RRCReconfiguration
RRCReconfigurationComplete

FIG. 3

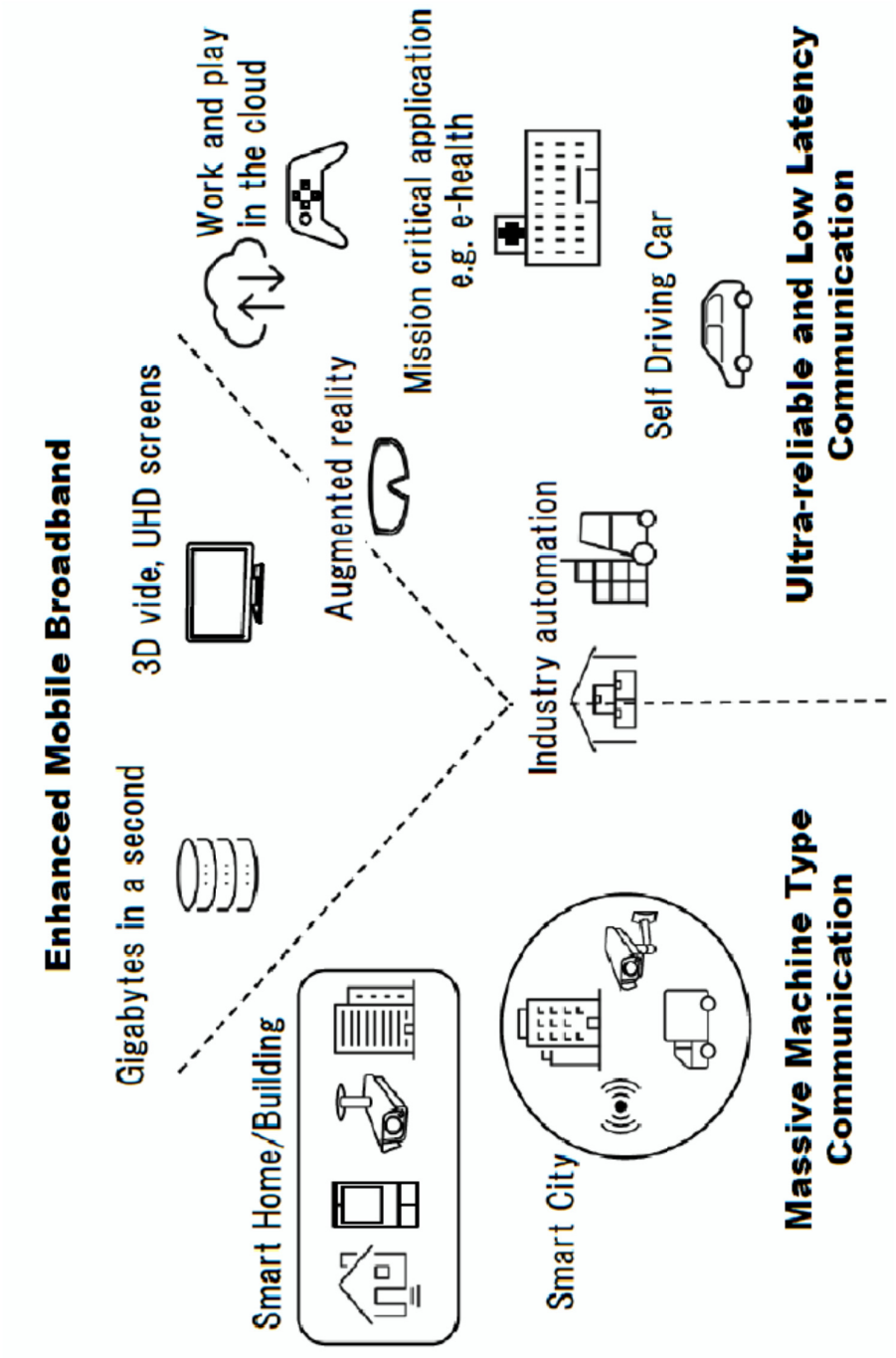

Enhanced Mobile Broadband
Gigabytes in a second
3D vide, UHD screens
Work and play in the cloud
Augmented reality
Mission critical application e.g. e-health
Smart Home/Building
Industry automation
Self Driving Car
Ultra-reliable and Low Latency Communication
Smart City
Massive Machine Type Communication

FIG. 4

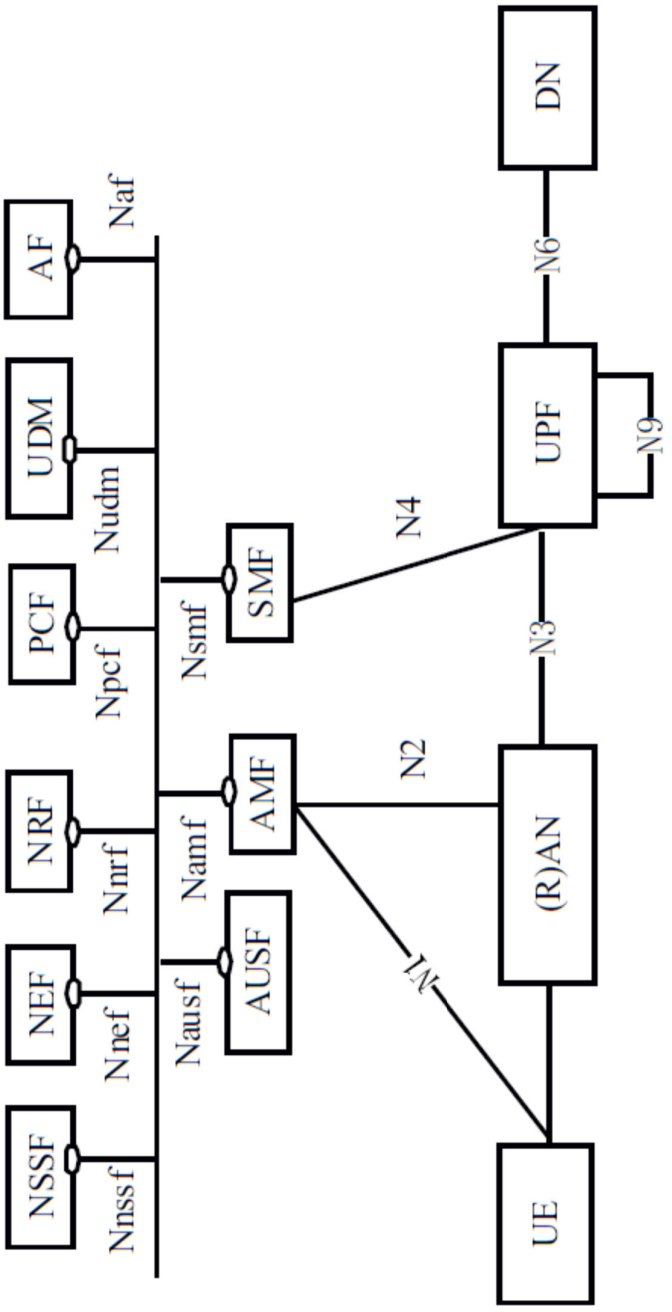

NSSF
NEF
NRF
PCF
UDM
AF
Nnssf
Nnef
Nnrf
Npcf
Nudm
Naf
Nausf
Namf
Nsmf
AUSF
AMF
SMF
N2
N4
N1
N3
N6
N9
UE
(R)AN
UPF
DN

FIG. 5

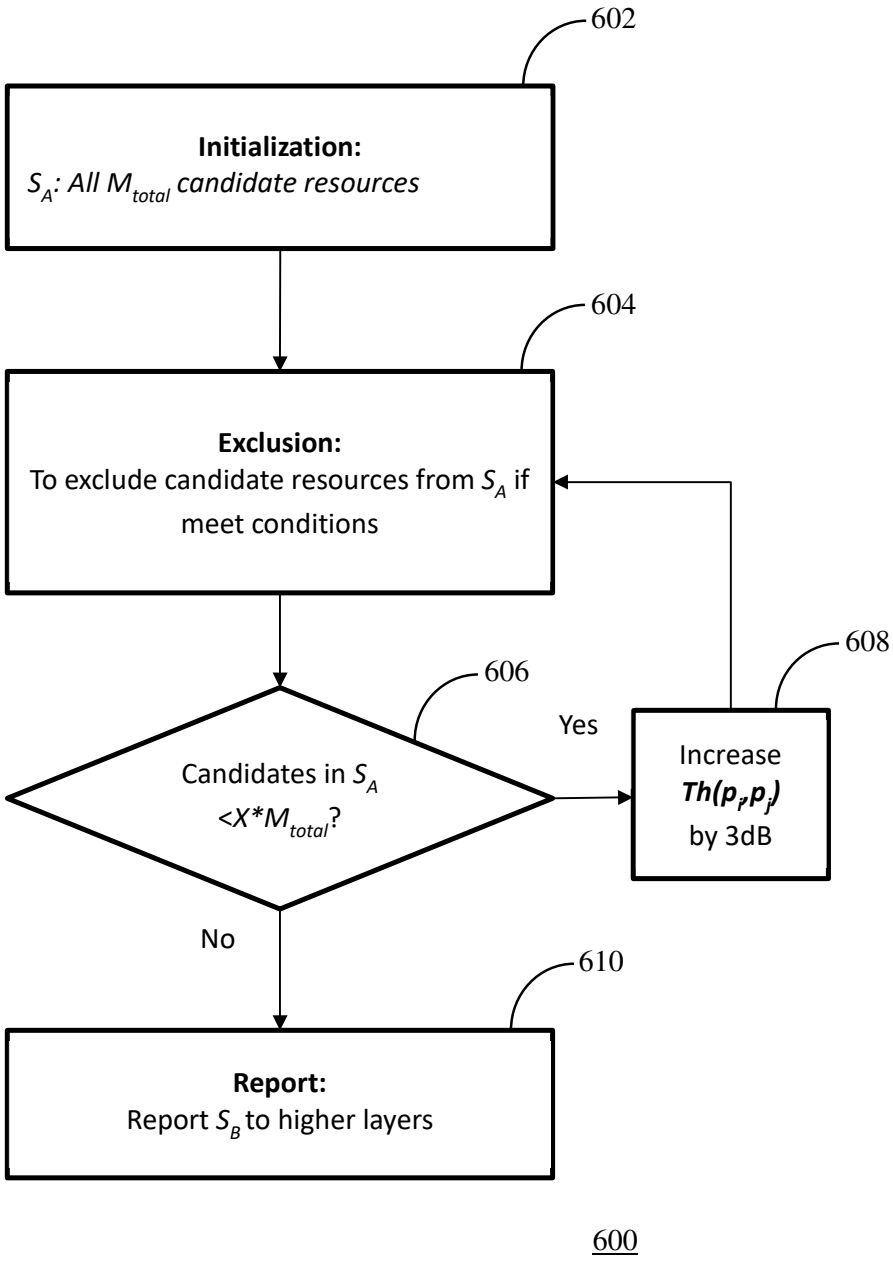

602
Initialization:
S_A: All M_{total} candidate resources
604
Exclusion:
To exclude candidate resources from S_A if meet conditions
606
Candidates in S_A <$X*M_{total}$?
Yes
608
Increase $Th(p_i,p_j)$ by 3dB
No
610
Report:
Report S_B to higher layers
600

FIG. 6

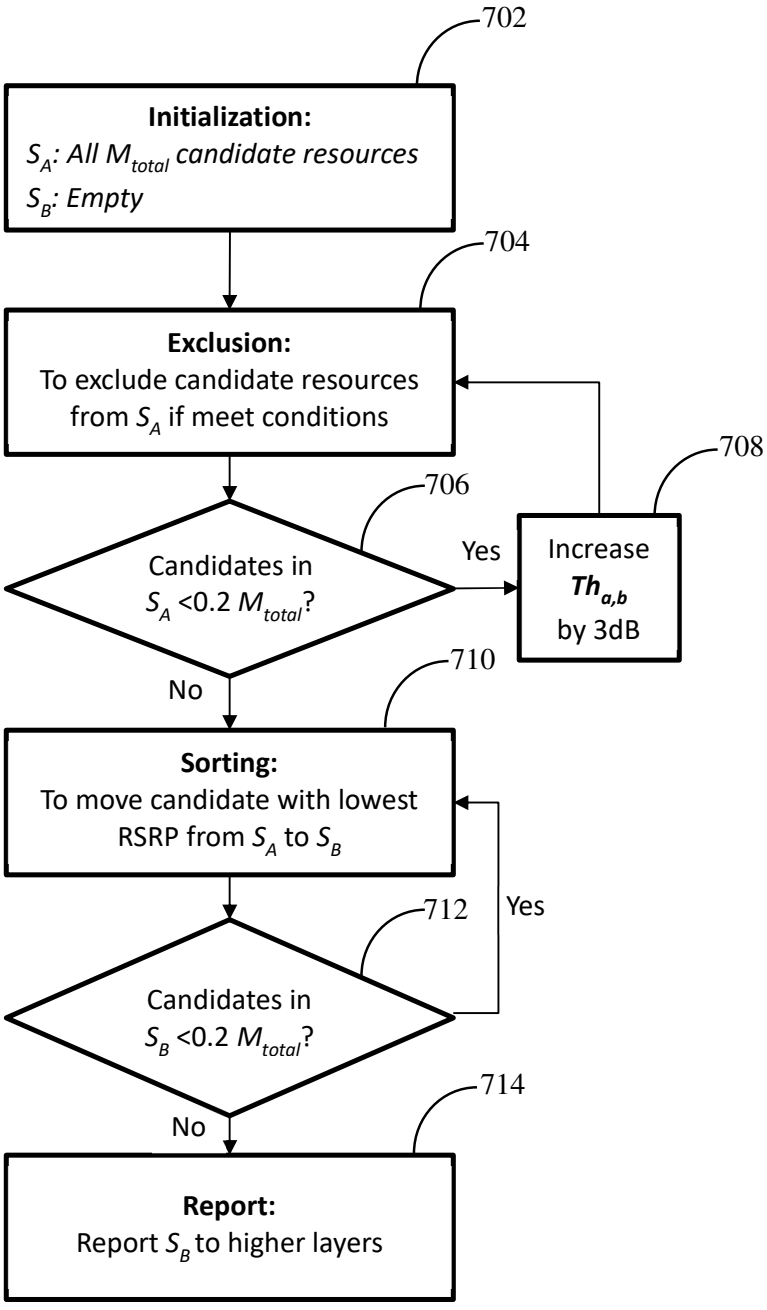

702
Initialization:
S_A: All M_{total} candidate resources
S_B: Empty
704
Exclusion:
To exclude candidate resources from S_A if meet conditions
706
Candidates in S_A <0.2 M_{total}?
Yes
708
Increase $Th_{a,b}$ by 3dB
No
710
Sorting:
To move candidate with lowest RSRP from S_A to S_B
712
Candidates in S_B <0.2 M_{total}?
Yes
No
714
Report:
Report S_B to higher layers
700

FIG. 7

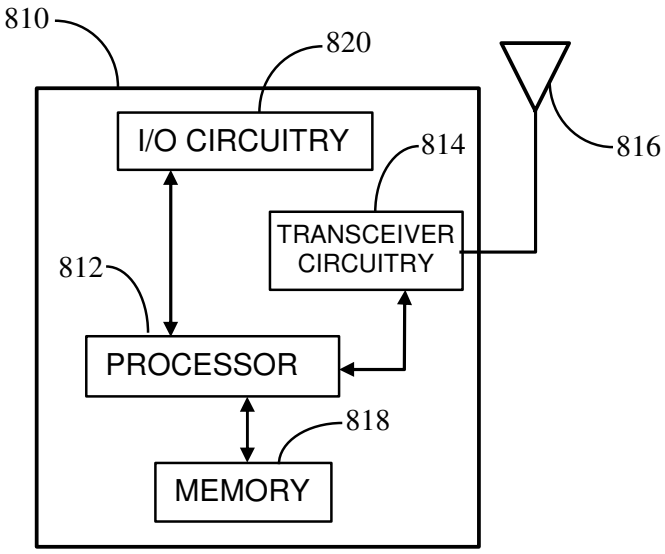

810
820
816
I/O CIRCUITRY
814
TRANSCEIVER CIRCUITRY
812
PROCESSOR
818
MEMORY

FIG. 8 800

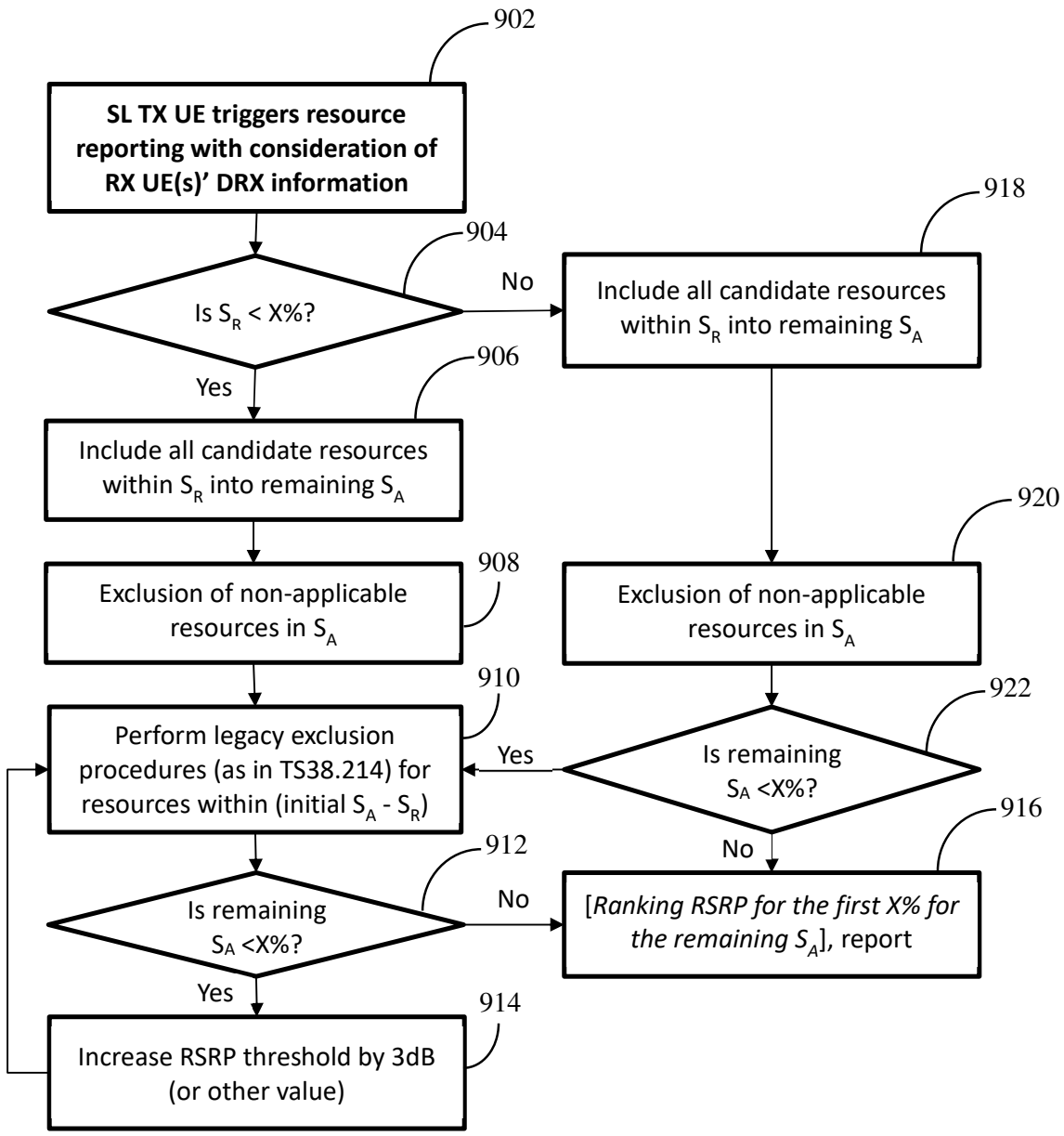

902
SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
904
Is S_R < X%?
No
Yes
918
Include all candidate resources within S_R into remaining S_A
906
Include all candidate resources within S_R into remaining S_A
920
Exclusion of non-applicable resources in S_A
908
Exclusion of non-applicable resources in S_A
910
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
922
Is remaining S_A <X%?
Yes
No
916
[*Ranking RSRP for the first X% for the remaining S_A*], report
912
Is remaining S_A <X%?
No
Yes
914
Increase RSRP threshold by 3dB (or other value)
900

FIG. 9

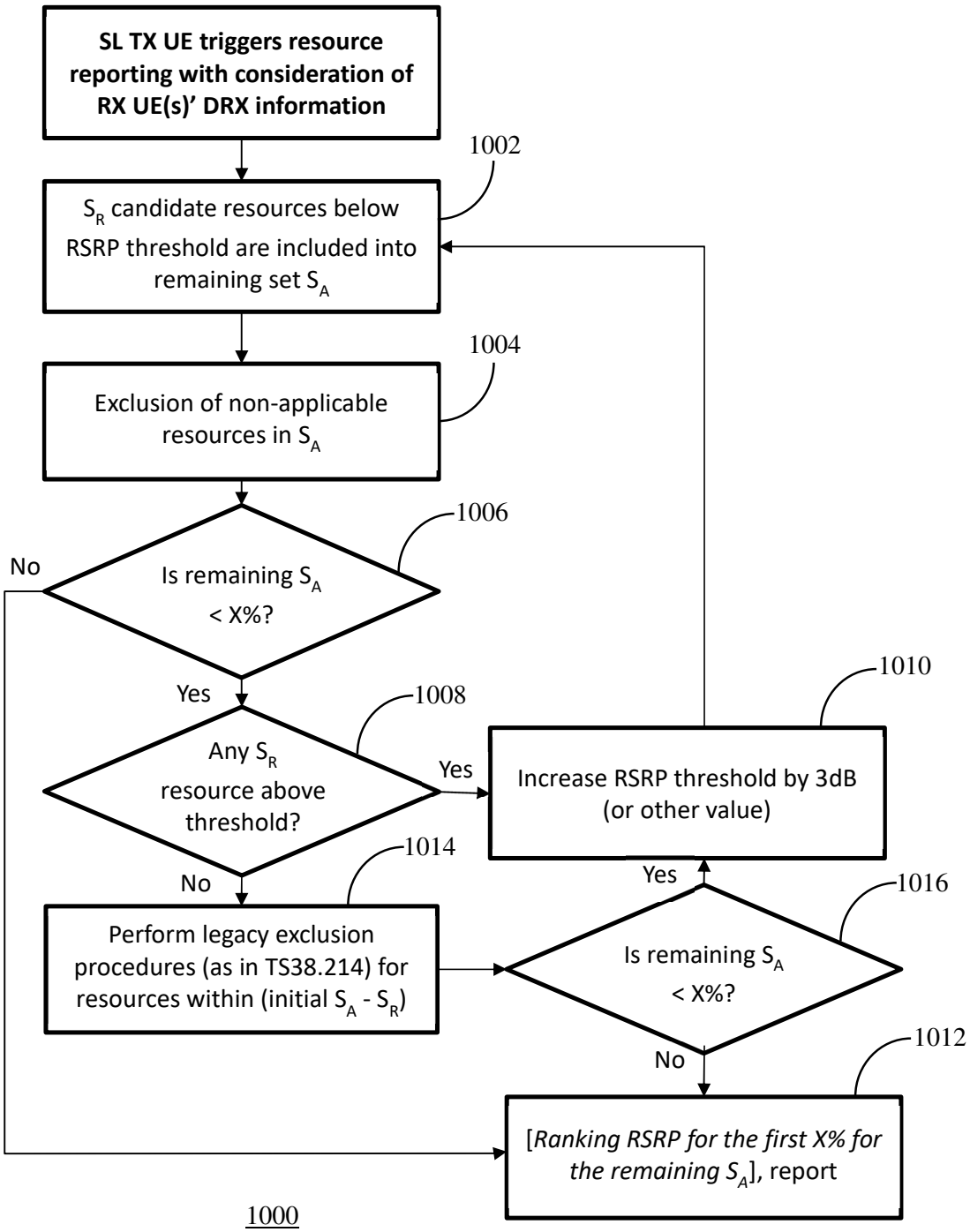

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
1002
S_R candidate resources below RSRP threshold are included into remaining set S_A
1004
Exclusion of non-applicable resources in S_A
1006
Is remaining S_A < X%?
No
Yes
1008
Any S_R resource above threshold?
Yes
1010
Increase RSRP threshold by 3dB (or other value)
No
1014
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
Yes
1016
Is remaining S_A < X%?
No
1012
[*Ranking RSRP for the first X% for the remaining S_A*], report
1000

FIG. 10

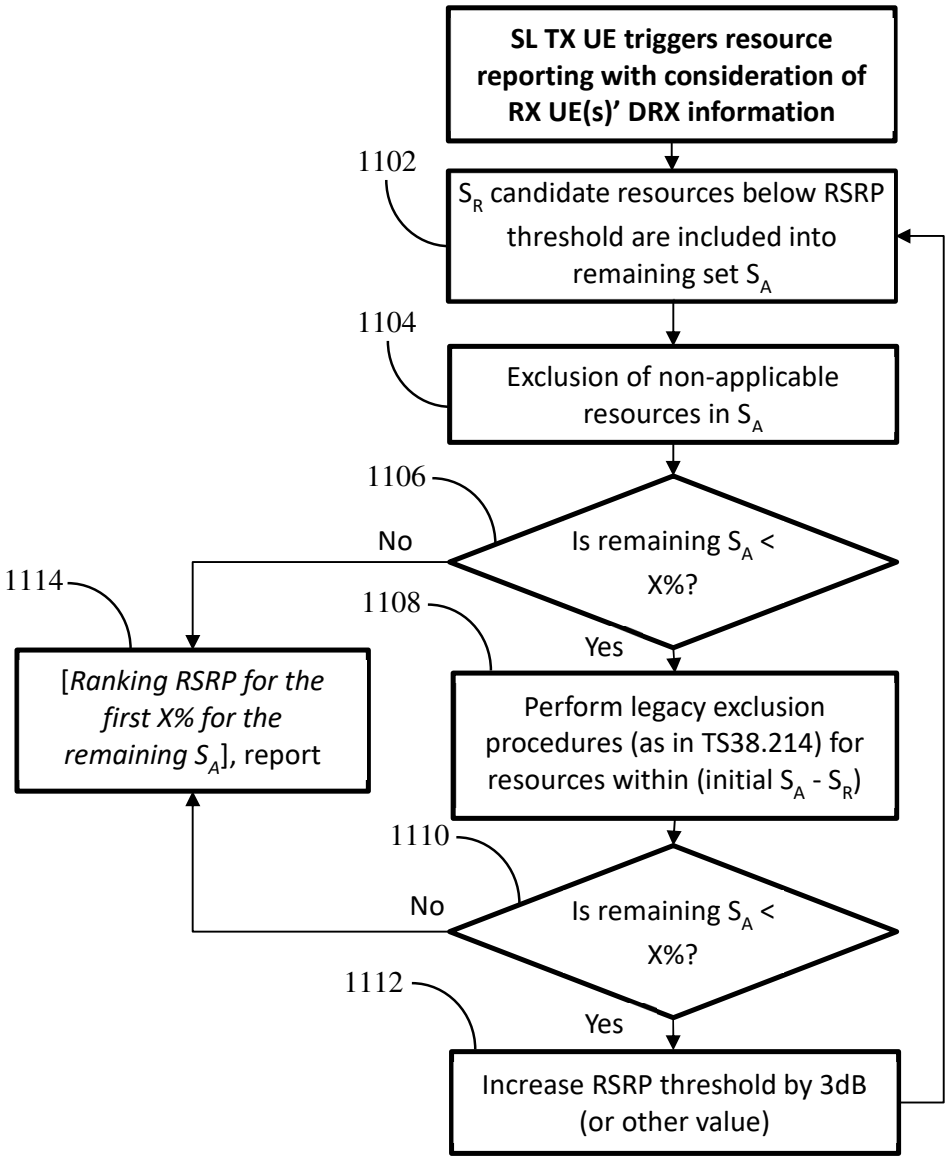

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
1102
S_R candidate resources below RSRP threshold are included into remaining set S_A
1104
Exclusion of non-applicable resources in S_A
1106
Is remaining S_A < X%?
No
Yes
1114
[*Ranking RSRP for the first X% for the remaining S_A*], report
1108
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
1110
Is remaining S_A < X%?
No
Yes
1112
Increase RSRP threshold by 3dB (or other value)
1100

FIG. 11

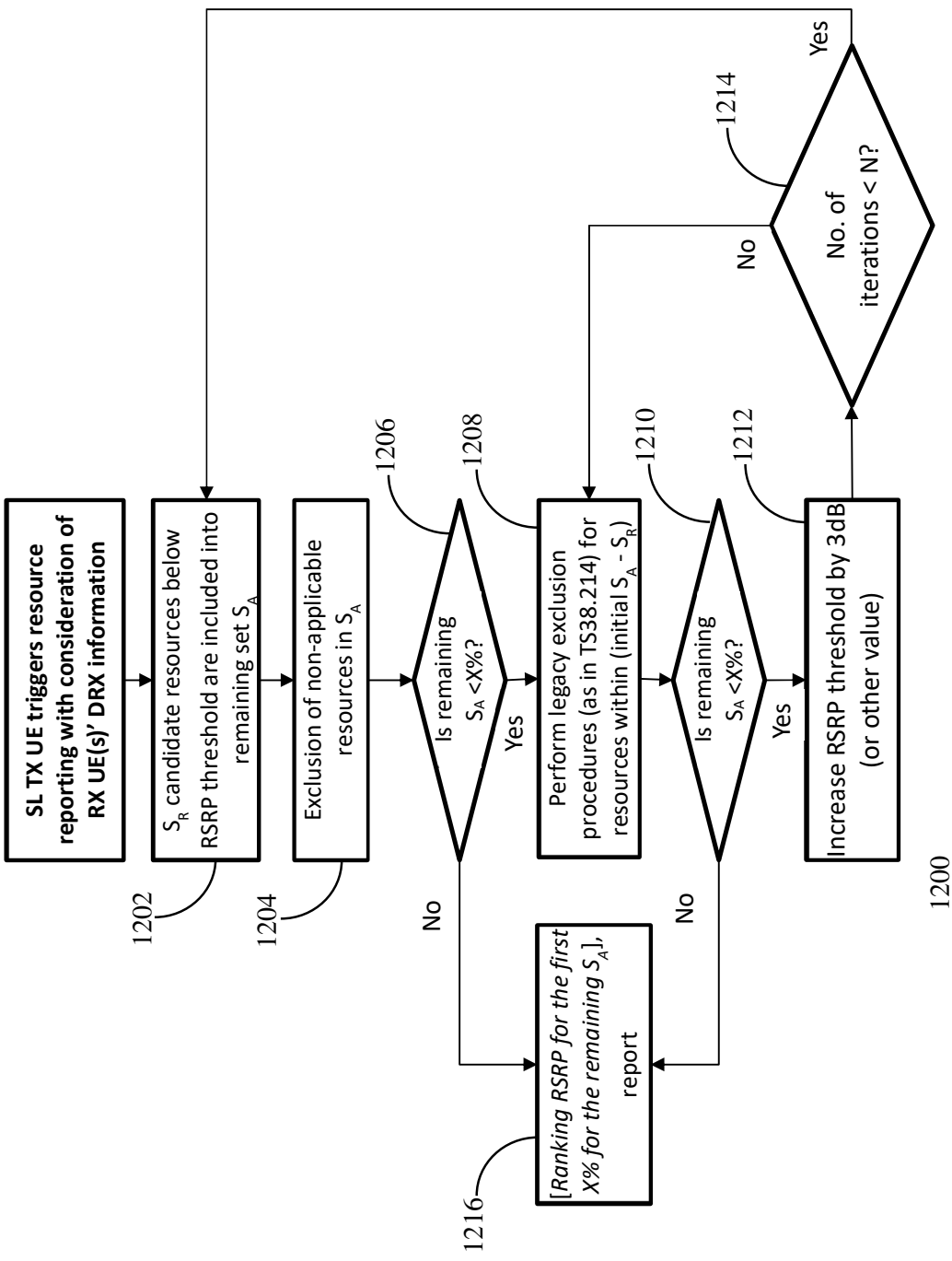

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
S_R candidate resources below RSRP threshold are included into remaining set S_A
Exclusion of non-applicable resources in S_A
Is remaining S_A <X%?
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
Is remaining S_A <X%?
Increase RSRP threshold by 3dB (or other value)
No. of iterations < N?
[Ranking RSRP for the first X% for the remaining S_A], report
1202
1204
1206
1208
1210
1212
1214
1216
No
Yes
No
Yes
No
Yes
1200

FIG. 12

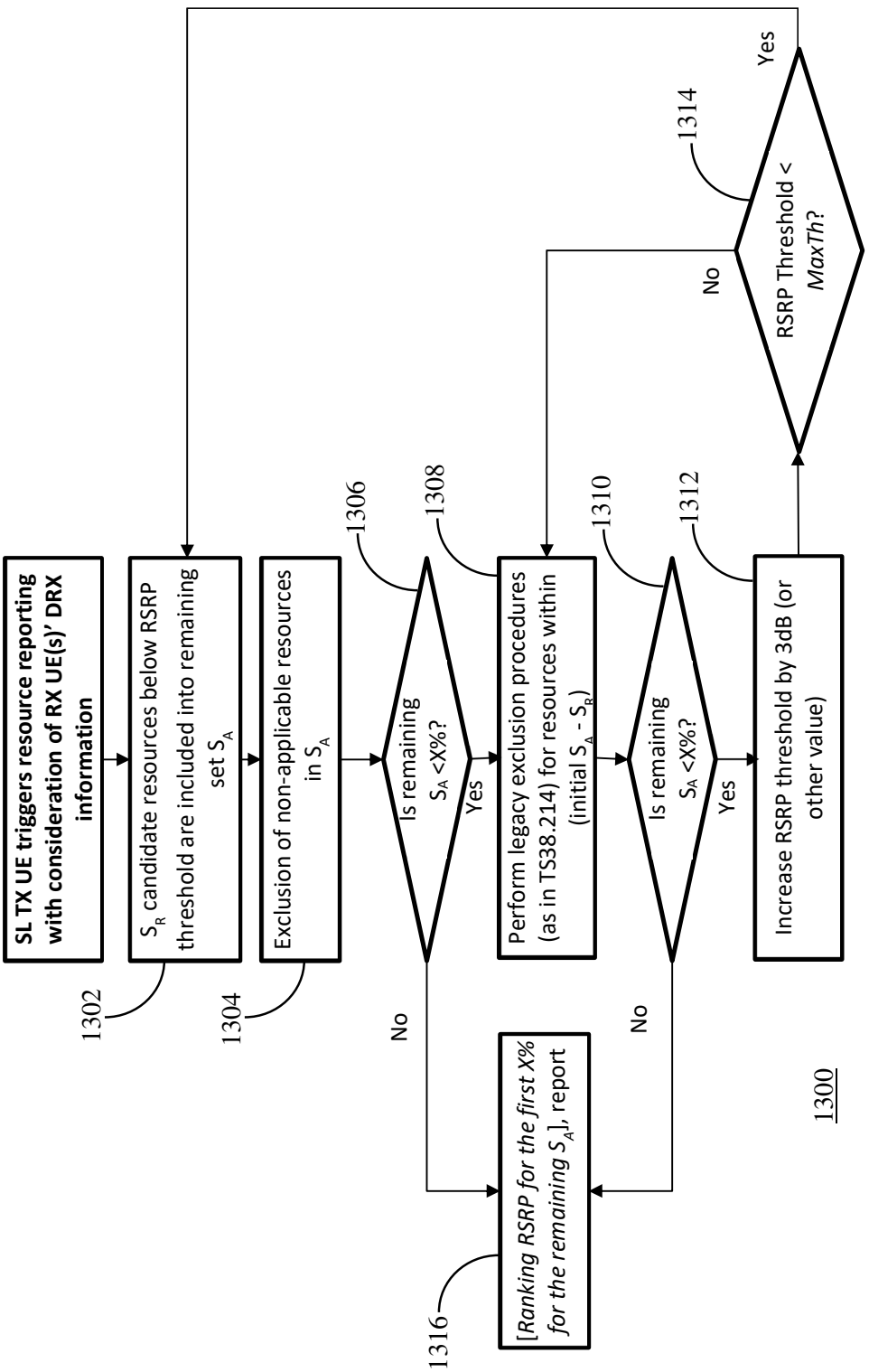

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
S_R candidate resources below RSRP threshold are included into remaining set S_A
Exclusion of non-applicable resources in S_A
Is remaining S_A <X%?
Yes
No
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
Is remaining S_A <X%?
Yes
No
Increase RSRP threshold by 3dB (or other value)
RSRP Threshold < *MaxTh*?
Yes
No
[*Ranking RSRP for the first X% for the remaining S_A*], report
1302
1304
1306
1308
1310
1312
1314
1316
1300

FIG. 13

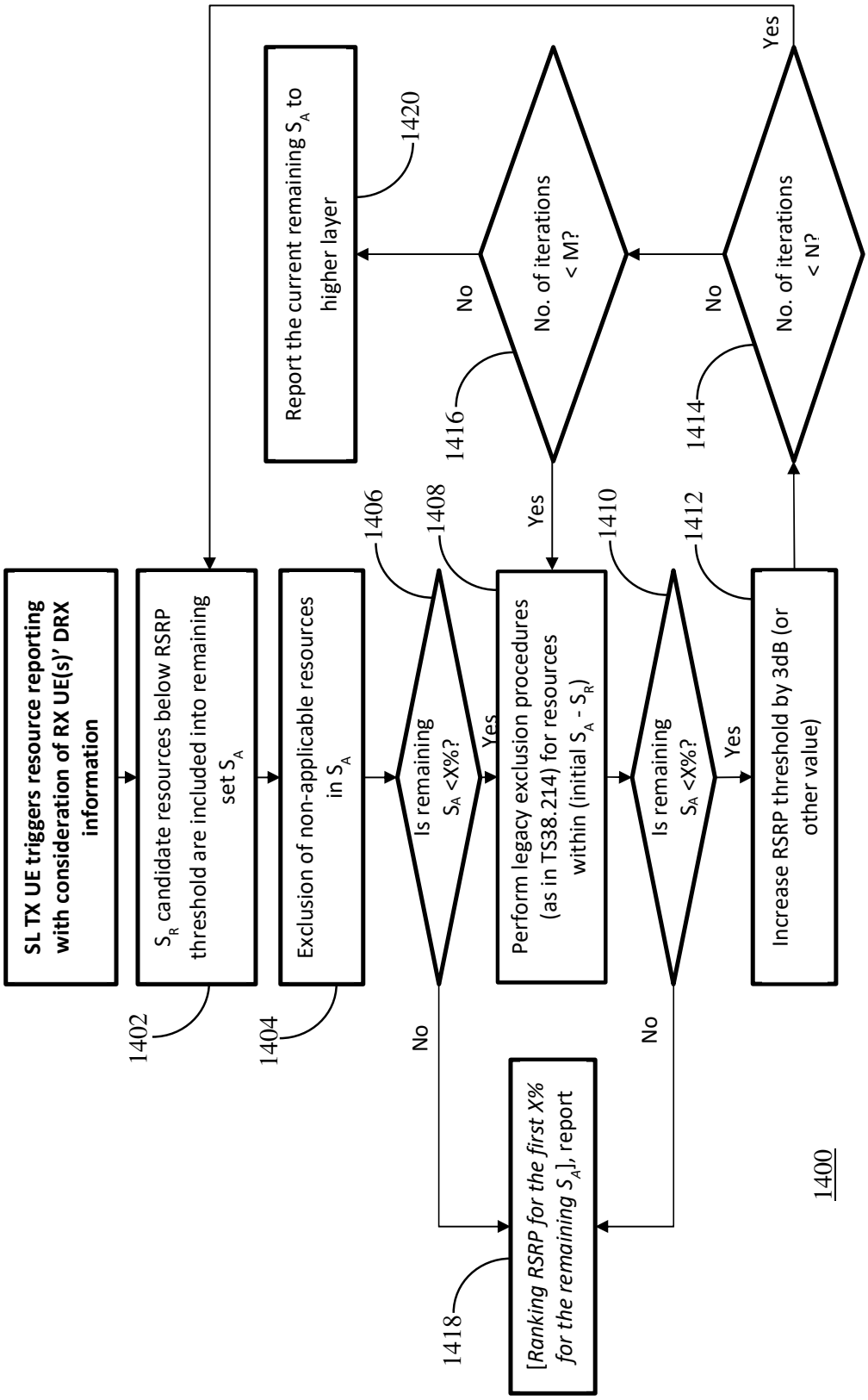

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
S_R candidate resources below RSRP threshold are included into remaining set S_A
Exclusion of non-applicable resources in S_A
Is remaining S_A <X%?
Perform legacy exclusion procedures (as in TS38.214) for resources within (initial S_A - S_R)
Is remaining S_A <X%?
Increase RSRP threshold by 3dB (or other value)
No. of iterations < N?
No. of iterations < M?
Report the current remaining S_A to higher layer
[Ranking RSRP for the first X% for the remaining S_A], report
Yes
No
1400
1402
1404
1406
1408
1410
1412
1414
1416
1418
1420

FIG. 14

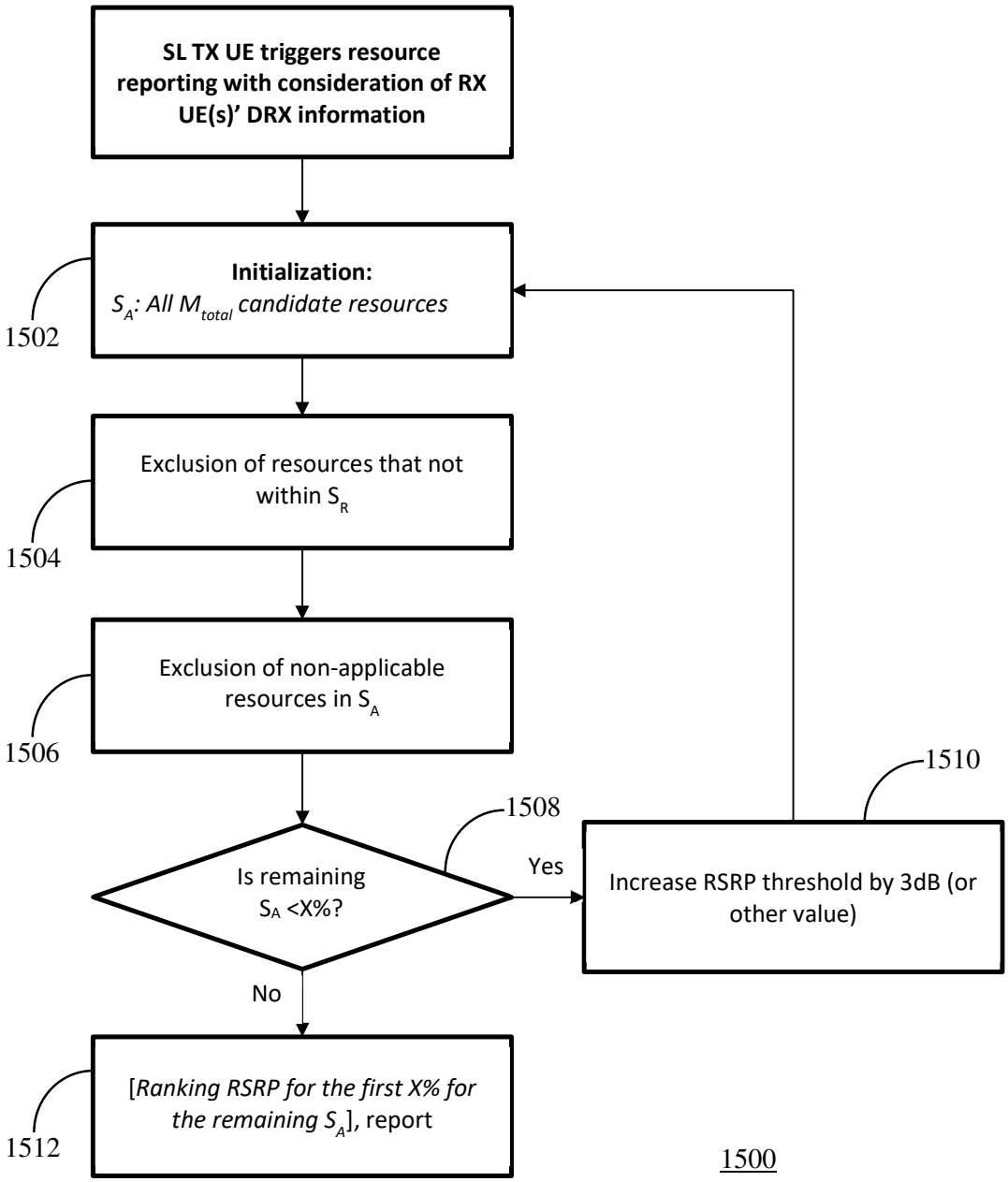
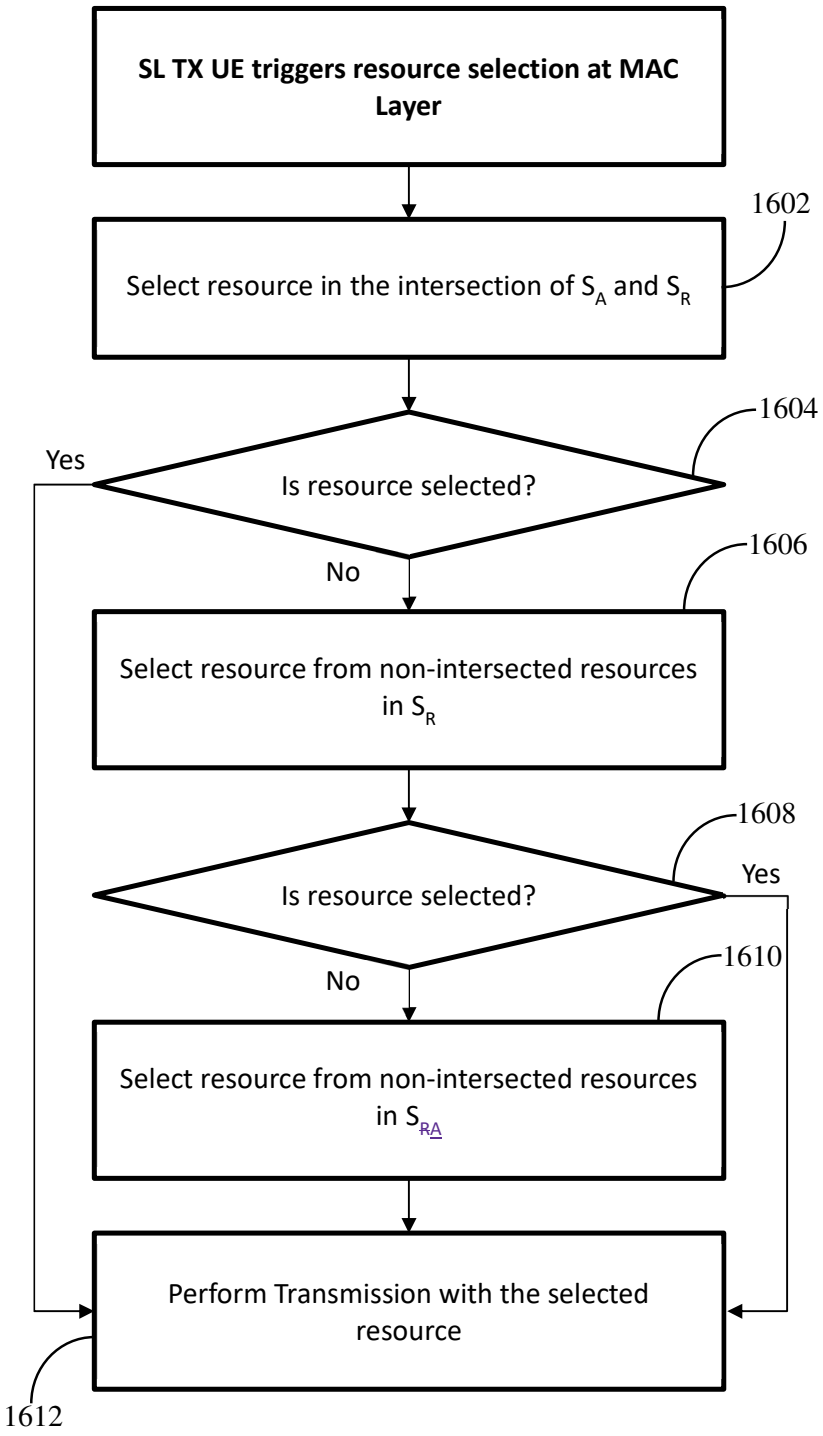

SL TX UE triggers resource reporting with consideration of RX UE(s)' DRX information
Initialization:
S_A: All M_{total} candidate resources
1502
Exclusion of resources that not within S_R
1504
Exclusion of non-applicable resources in S_A
1506
1508
Is remaining S_A <X%?
Yes
No
1510
Increase RSRP threshold by 3dB (or other value)
[Ranking RSRP for the first X% for the remaining S_A], report
1512
1500

FIG. 15


SL TX UE triggers resource selection at MAC Layer
1602
Select resource in the intersection of S_A and S_R
1604
Is resource selected?
Yes
No
1606
Select resource from non-intersected resources in S_R
1608
Is resource selected?
Yes
No
1610
Select resource from non-intersected resources in S_{RA}
Perform Transmission with the selected resource
1612

1600

FIG. 16

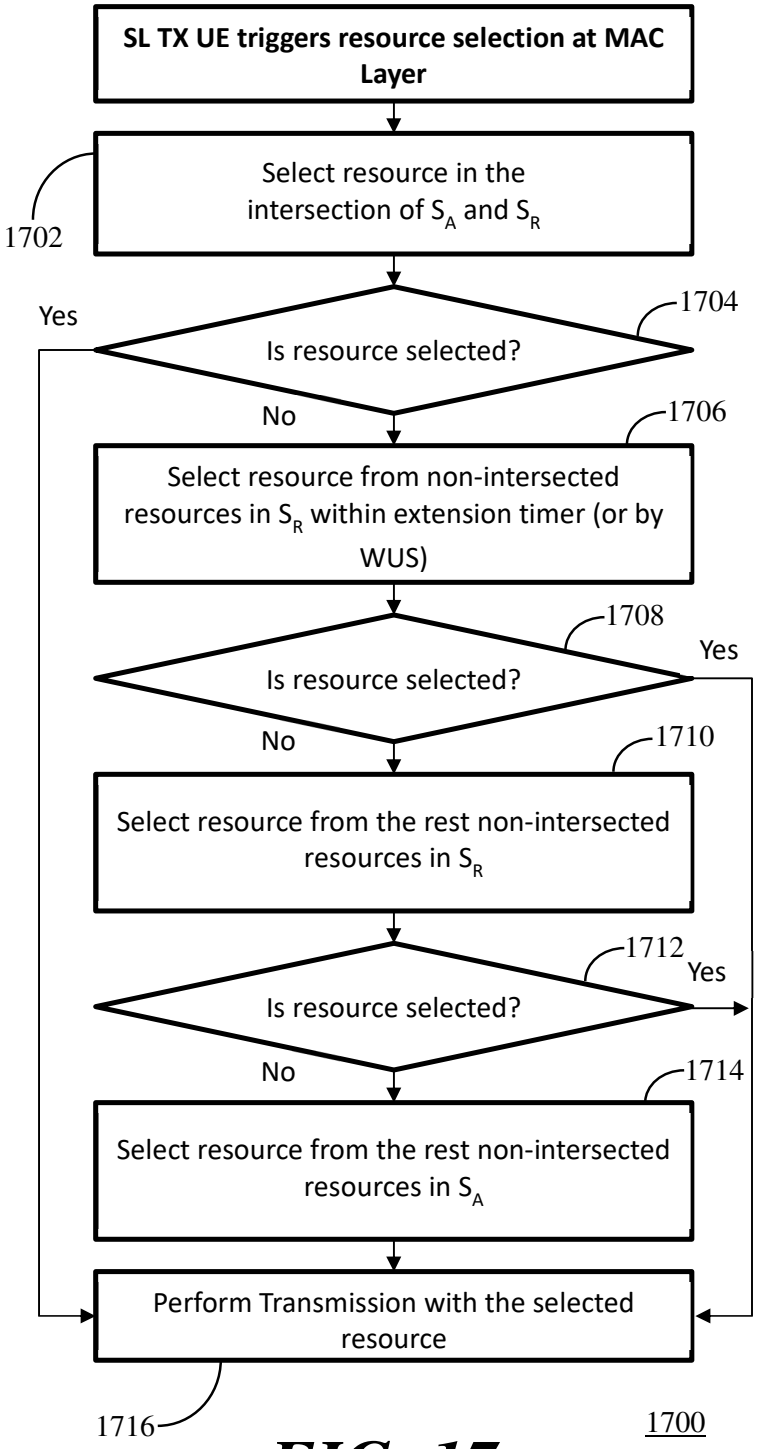

SL TX UE triggers resource selection at MAC Layer
Select resource in the intersection of S_A and S_R
1702
Is resource selected?
1704
Yes
No
Select resource from non-intersected resources in S_R within extension timer (or by WUS)
1706
Is resource selected?
1708
Yes
No
Select resource from the rest non-intersected resources in S_R
1710
Is resource selected?
1712
Yes
No
Select resource from the rest non-intersected resources in S_A
1714
Perform Transmission with the selected resource
1716
1700

FIG. 17