DRAWINGS

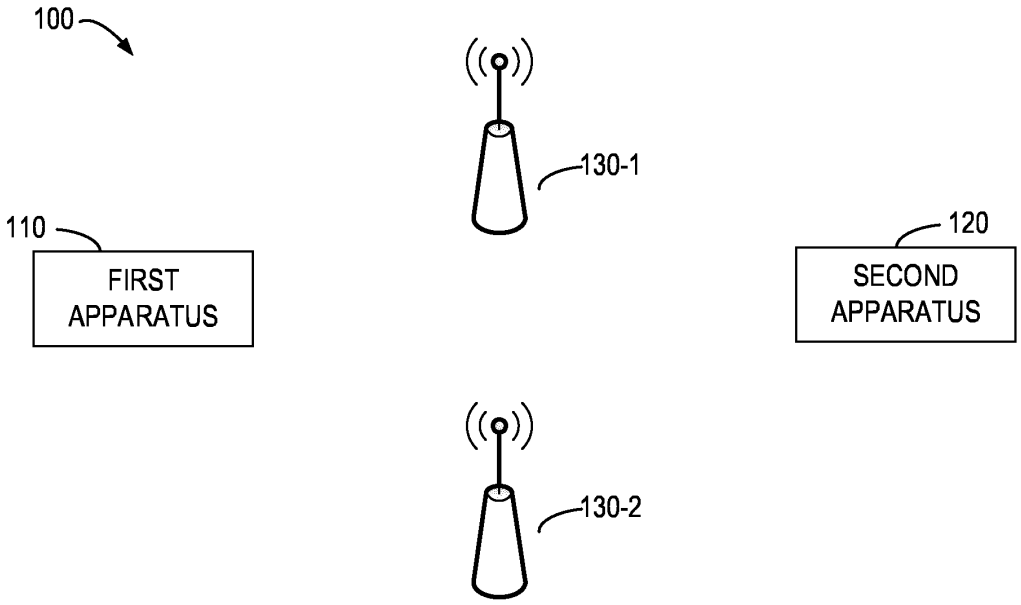


FIG. 1

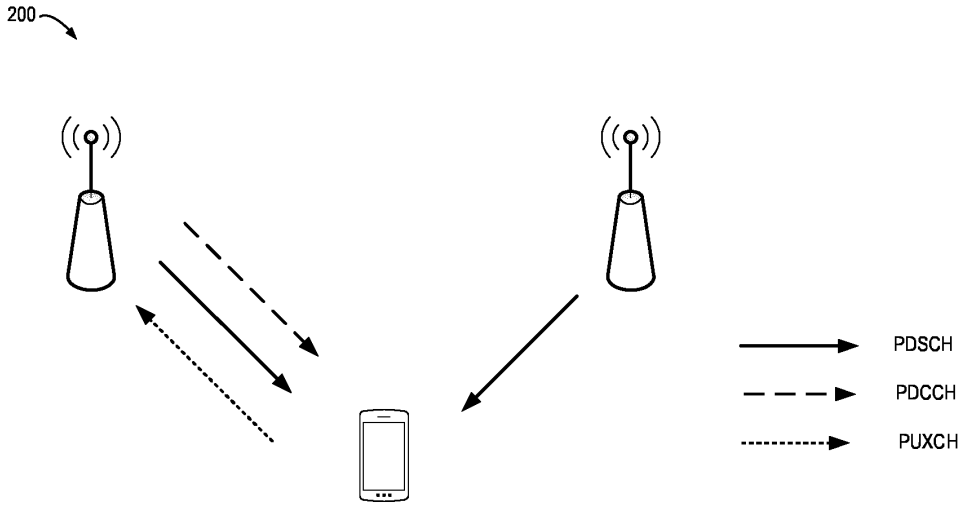


FIG. 2

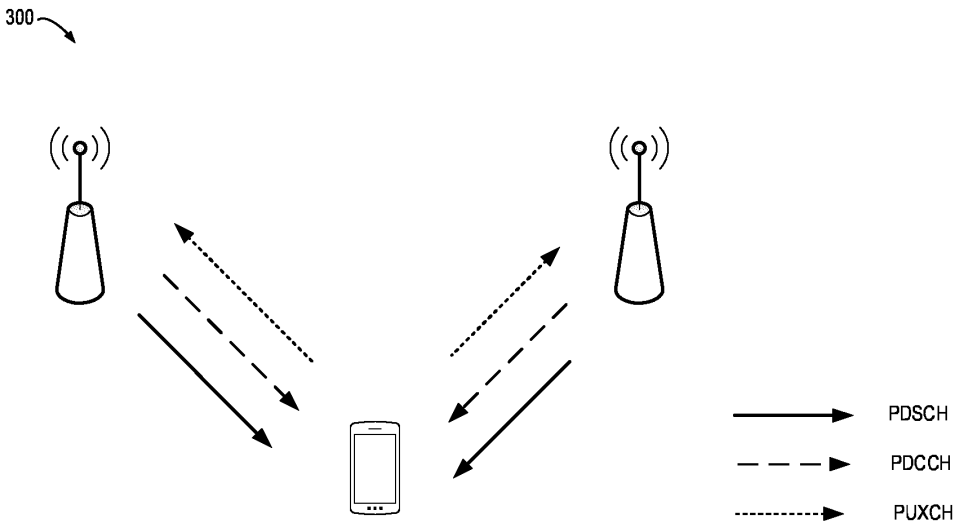


FIG. 3

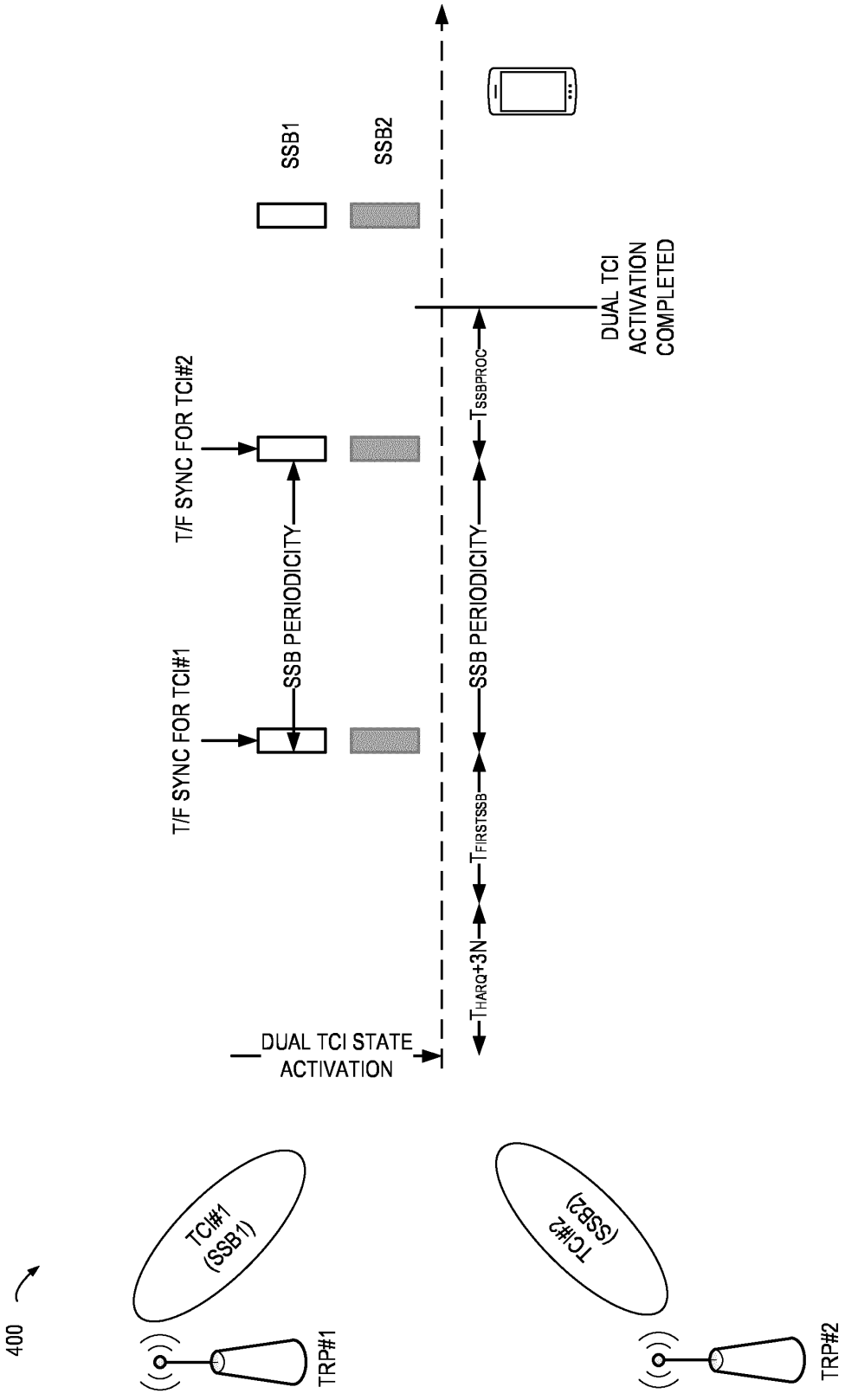

400
TRP#1
TRP#2
TCI#1 (SSB1)
TCI#2 (SSB2)
DUAL TCI STATE ACTIVATION
THARQ+3N
TFIRSTSSB
SSB PERIODICITY
TSSBPROC
DUAL TCI ACTIVATION COMPLETED
T/F SYNC FOR TCI#1
T/F SYNC FOR TCI#2
SSB PERIODICITY
SSB1
SSB2

FIG. 4

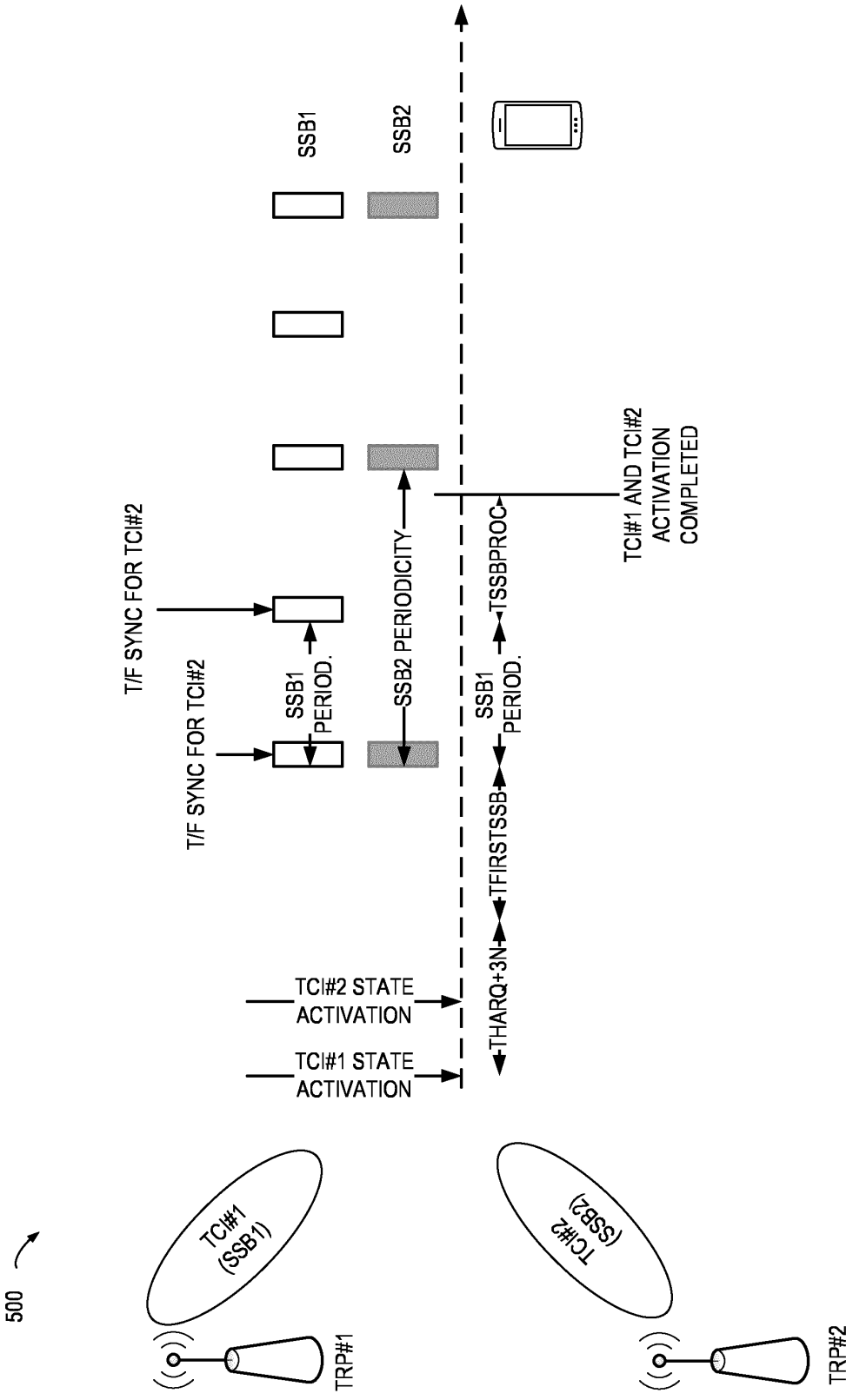

500
TRP#1
TRP#2
TCI#1 (SSB1)
TCI#2 (SSB2)
TCI#1 STATE ACTIVATION
TCI#2 STATE ACTIVATION
THARQ+3N
TFIRSTSSB
SSB1 PERIOD.
TSSBPROC
SSB2 PERIODICITY
SSB1 PERIOD.
T/F SYNC FOR TCI#2
T/F SYNC FOR TCI#2
TCI#1 AND TCI#2 ACTIVATION COMPLETED
SSB1
SSB2

FIG. 5

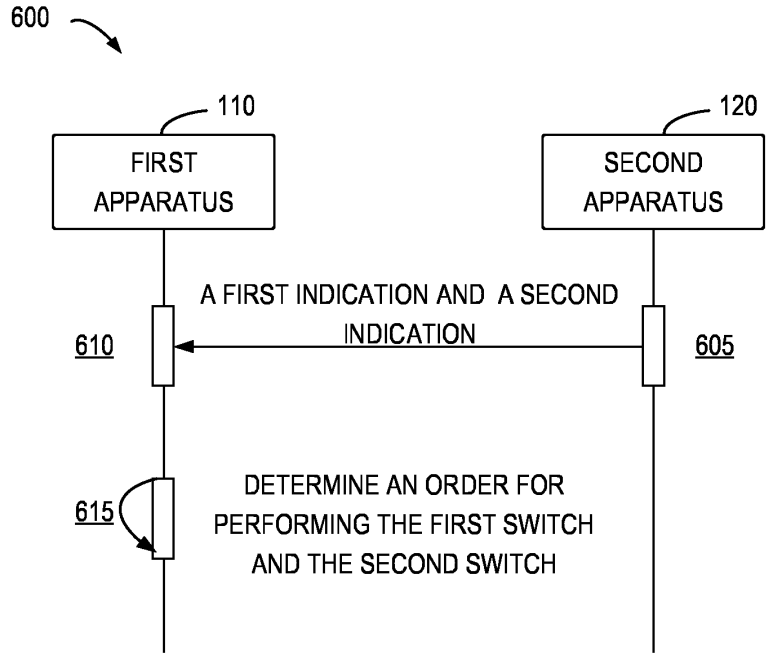

600
110
120
FIRST APPARATUS
SECOND APPARATUS
A FIRST INDICATION AND A SECOND INDICATION
610
605
615
DETERMINE AN ORDER FOR PERFORMING THE FIRST SWITCH AND THE SECOND SWITCH

FIG. 6

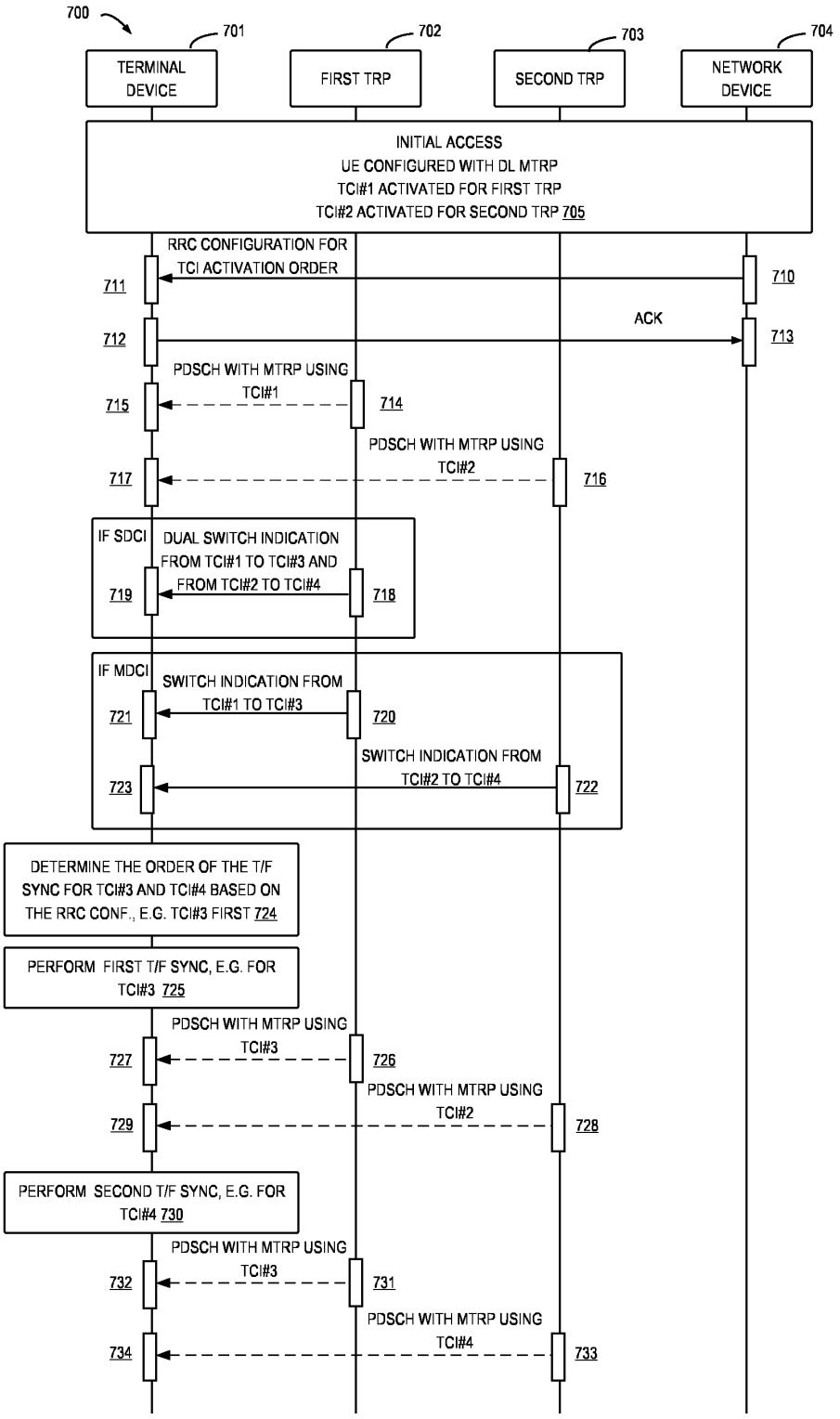

700
701
TERMINAL DEVICE
702
FIRST TRP
703
SECOND TRP
704
NETWORK DEVICE
INITIAL ACCESS
UE CONFIGURED WITH DL MTRP
TCI#1 ACTIVATED FOR FIRST TRP
TCI#2 ACTIVATED FOR SECOND TRP 705
RRC CONFIGURATION FOR TCI ACTIVATION ORDER
711
710
ACK
712
713
PDSCH WITH MTRP USING TCI#1
715
714
PDSCH WITH MTRP USING TCI#2
717
716
IF SDCI
DUAL SWITCH INDICATION FROM TCI#1 TO TCI#3 AND FROM TCI#2 TO TCI#4
719
718
IF MDCI
SWITCH INDICATION FROM TCI#1 TO TCI#3
721
720
SWITCH INDICATION FROM TCI#2 TO TCI#4
723
722
DETERMINE THE ORDER OF THE T/F SYNC FOR TCI#3 AND TCI#4 BASED ON THE RRC CONF., E.G. TCI#3 FIRST 724
PERFORM FIRST T/F SYNC, E.G. FOR TCI#3 725
PDSCH WITH MTRP USING TCI#3
727
726
PDSCH WITH MTRP USING TCI#2
729
728
PERFORM SECOND T/F SYNC, E.G. FOR TCI#4 730
PDSCH WITH MTRP USING TCI#3
732
731
PDSCH WITH MTRP USING TCI#4
734
733

FIG. 7

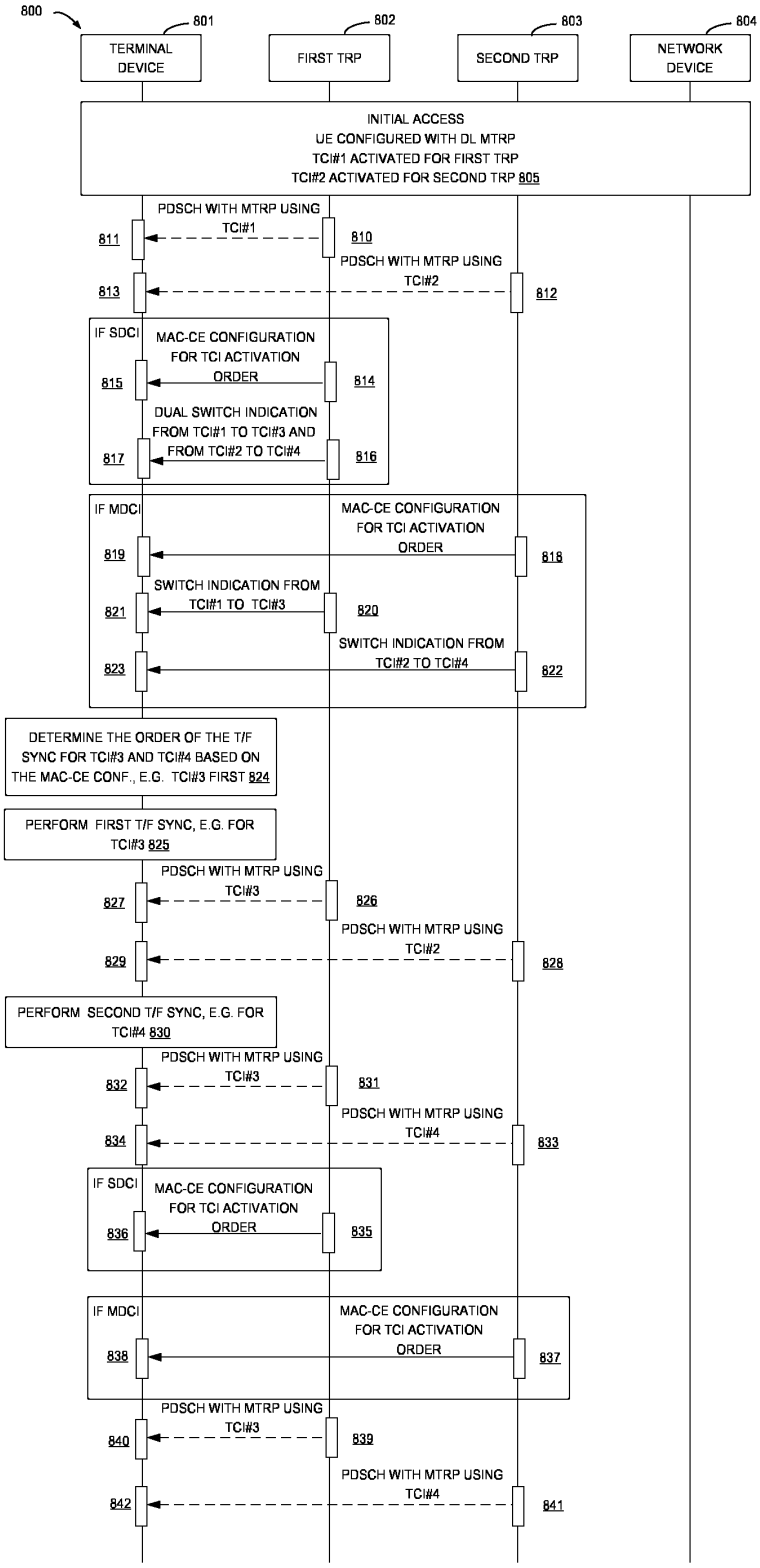

800
801
TERMINAL DEVICE
802
FIRST TRP
803
SECOND TRP
804
NETWORK DEVICE
INITIAL ACCESS
UE CONFIGURED WITH DL MTRP
TCI#1 ACTIVATED FOR FIRST TRP
TCI#2 ACTIVATED FOR SECOND TRP 805
PDSCH WITH MTRP USING TCI#1
811
810
PDSCH WITH MTRP USING TCI#2
813
812
IF SDCI
MAC-CE CONFIGURATION FOR TCI ACTIVATION ORDER
815
814
DUAL SWITCH INDICATION FROM TCI#1 TO TCI#3 AND FROM TCI#2 TO TCI#4
817
816
IF MDCI
MAC-CE CONFIGURATION FOR TCI ACTIVATION ORDER
819
818
SWITCH INDICATION FROM TCI#1 TO TCI#3
821
820
SWITCH INDICATION FROM TCI#2 TO TCI#4
823
822
DETERMINE THE ORDER OF THE T/F SYNC FOR TCI#3 AND TCI#4 BASED ON THE MAC-CE CONF., E.G. TCI#3 FIRST 824
PERFORM FIRST T/F SYNC, E.G. FOR TCI#3 825
PDSCH WITH MTRP USING TCI#3
827
826
PDSCH WITH MTRP USING TCI#2
829
828
PERFORM SECOND T/F SYNC, E.G. FOR TCI#4 830
PDSCH WITH MTRP USING TCI#3
832
831
PDSCH WITH MTRP USING TCI#4
834
833
IF SDCI
MAC-CE CONFIGURATION FOR TCI ACTIVATION ORDER
836
835
IF MDCI
MAC-CE CONFIGURATION FOR TCI ACTIVATION ORDER
838
837
PDSCH WITH MTRP USING TCI#3
840
839
PDSCH WITH MTRP USING TCI#4
842
841

FIG. 8

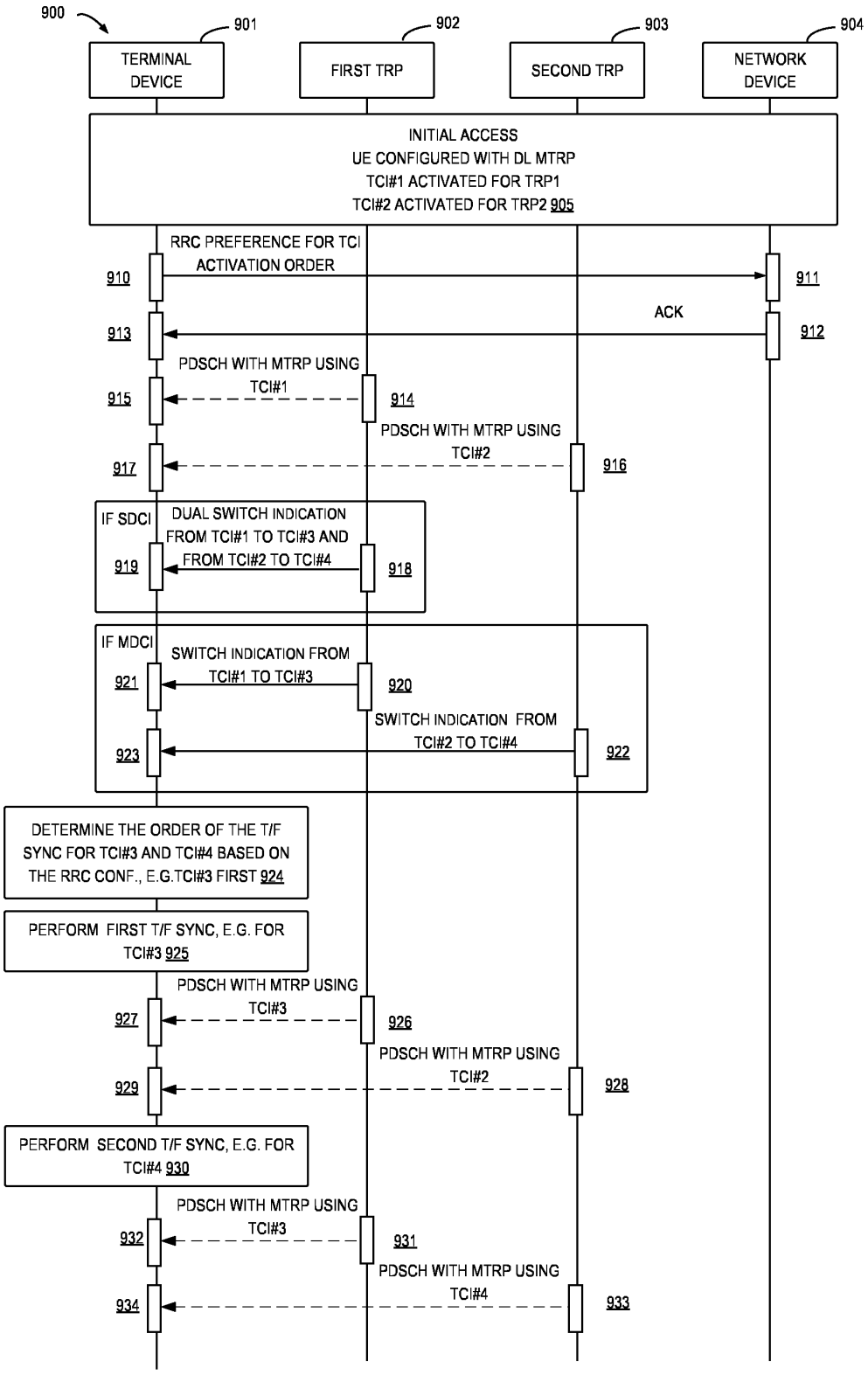

900
901
902
903
904
TERMINAL DEVICE
FIRST TRP
SECOND TRP
NETWORK DEVICE
INITIAL ACCESS
UE CONFIGURED WITH DL MTRP
TCI#1 ACTIVATED FOR TRP1
TCI#2 ACTIVATED FOR TRP2 905
RRC PREFERENCE FOR TCI ACTIVATION ORDER
910
911
ACK
913
912
PDSCH WITH MTRP USING TCI#1
915
914
PDSCH WITH MTRP USING TCI#2
917
916
IF SDCI
DUAL SWITCH INDICATION FROM TCI#1 TO TCI#3 AND FROM TCI#2 TO TCI#4
919
918
IF MDCI
SWITCH INDICATION FROM TCI#1 TO TCI#3
921
920
SWITCH INDICATION FROM TCI#2 TO TCI#4
923
922
DETERMINE THE ORDER OF THE T/F SYNC FOR TCI#3 AND TCI#4 BASED ON THE RRC CONF., E.G.TCI#3 FIRST 924
PERFORM FIRST T/F SYNC, E.G. FOR TCI#3 925
PDSCH WITH MTRP USING TCI#3
927
926
PDSCH WITH MTRP USING TCI#2
929
928
PERFORM SECOND T/F SYNC, E.G. FOR TCI#4 930
PDSCH WITH MTRP USING TCI#3
932
931
PDSCH WITH MTRP USING TCI#4
934
933

FIG. 9

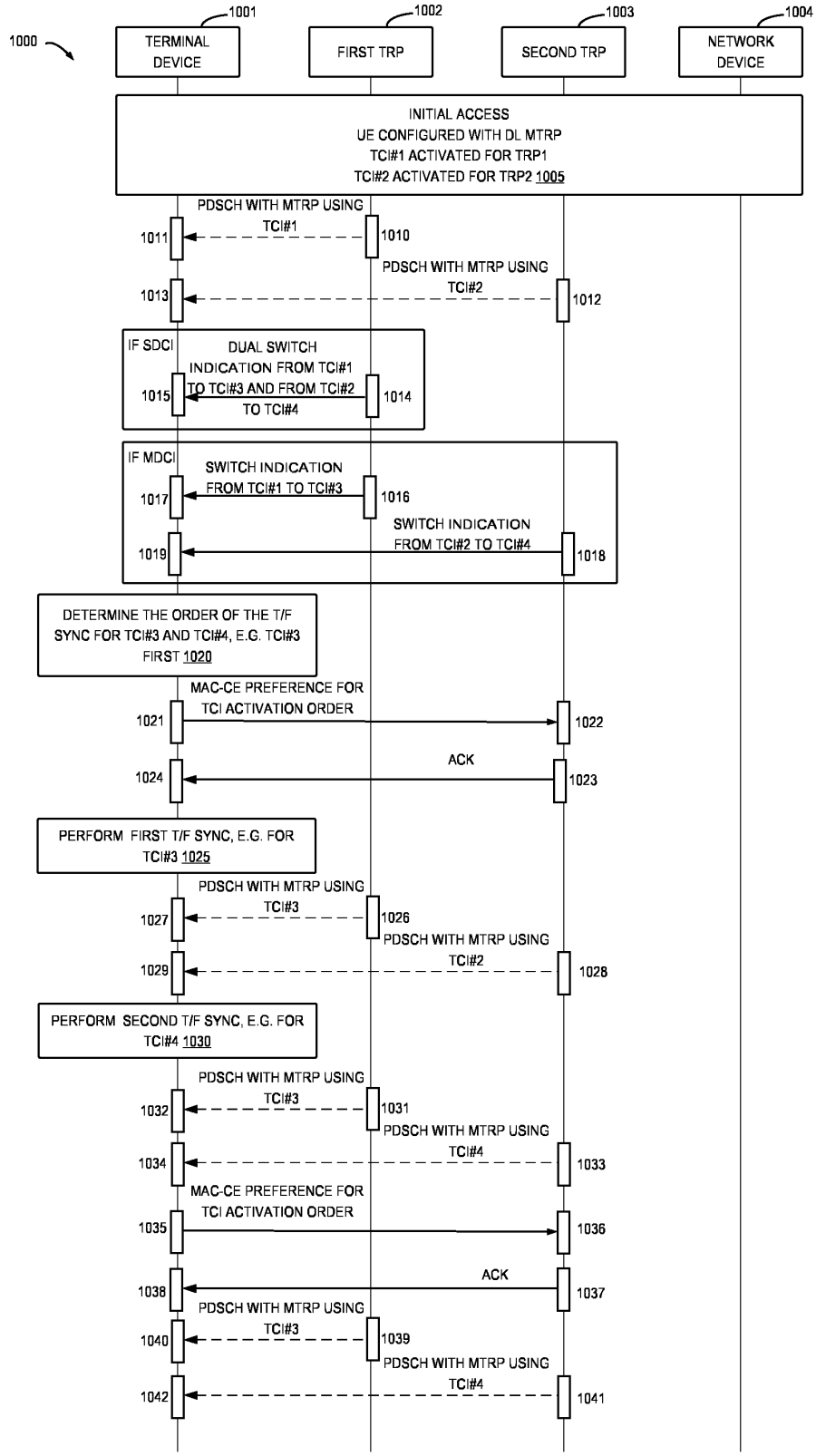

1000
1001
TERMINAL DEVICE
1002
FIRST TRP
1003
SECOND TRP
1004
NETWORK DEVICE
INITIAL ACCESS
UE CONFIGURED WITH DL MTRP
TCI#1 ACTIVATED FOR TRP1
TCI#2 ACTIVATED FOR TRP2 1005
PDSCH WITH MTRP USING TCI#1
1011
1010
PDSCH WITH MTRP USING TCI#2
1013
1012
IF SDCI
DUAL SWITCH INDICATION FROM TCI#1 TO TCI#3 AND FROM TCI#2 TO TCI#4
1015
1014
IF MDCI
SWITCH INDICATION FROM TCI#1 TO TCI#3
1017
1016
SWITCH INDICATION FROM TCI#2 TO TCI#4
1019
1018
DETERMINE THE ORDER OF THE T/F SYNC FOR TCI#3 AND TCI#4, E.G. TCI#3 FIRST 1020
MAC-CE PREFERENCE FOR TCI ACTIVATION ORDER
1021
1022
ACK
1024
1023
PERFORM FIRST T/F SYNC, E.G. FOR TCI#3 1025
PDSCH WITH MTRP USING TCI#3
1027
1026
PDSCH WITH MTRP USING TCI#2
1029
1028
PERFORM SECOND T/F SYNC, E.G. FOR TCI#4 1030
PDSCH WITH MTRP USING TCI#3
1032
1031
PDSCH WITH MTRP USING TCI#4
1034
1033
MAC-CE PREFERENCE FOR TCI ACTIVATION ORDER
1035
1036
ACK
1038
1037
PDSCH WITH MTRP USING TCI#3
1040
1039
PDSCH WITH MTRP USING TCI#4
1042
1041

FIG. 10

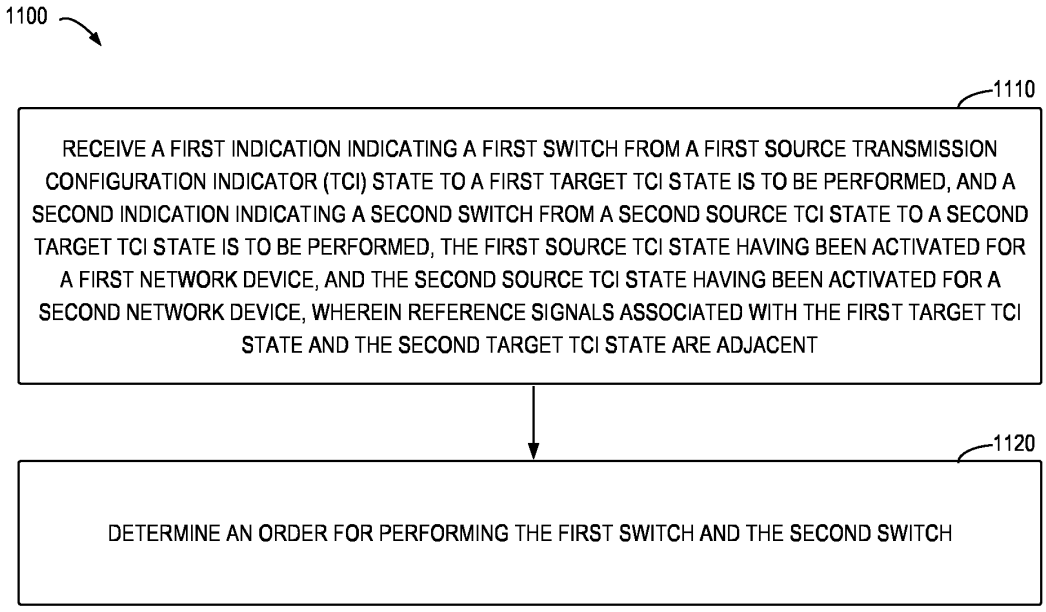

1100
1110
RECEIVE A FIRST INDICATION INDICATING A FIRST SWITCH FROM A FIRST SOURCE TRANSMISSION CONFIGURATION INDICATOR (TCI) STATE TO A FIRST TARGET TCI STATE IS TO BE PERFORMED, AND A SECOND INDICATION INDICATING A SECOND SWITCH FROM A SECOND SOURCE TCI STATE TO A SECOND TARGET TCI STATE IS TO BE PERFORMED, THE FIRST SOURCE TCI STATE HAVING BEEN ACTIVATED FOR A FIRST NETWORK DEVICE, AND THE SECOND SOURCE TCI STATE HAVING BEEN ACTIVATED FOR A SECOND NETWORK DEVICE, WHEREIN REFERENCE SIGNALS ASSOCIATED WITH THE FIRST TARGET TCI STATE AND THE SECOND TARGET TCI STATE ARE ADJACENT
1120
DETERMINE AN ORDER FOR PERFORMING THE FIRST SWITCH AND THE SECOND SWITCH

FIG. 11

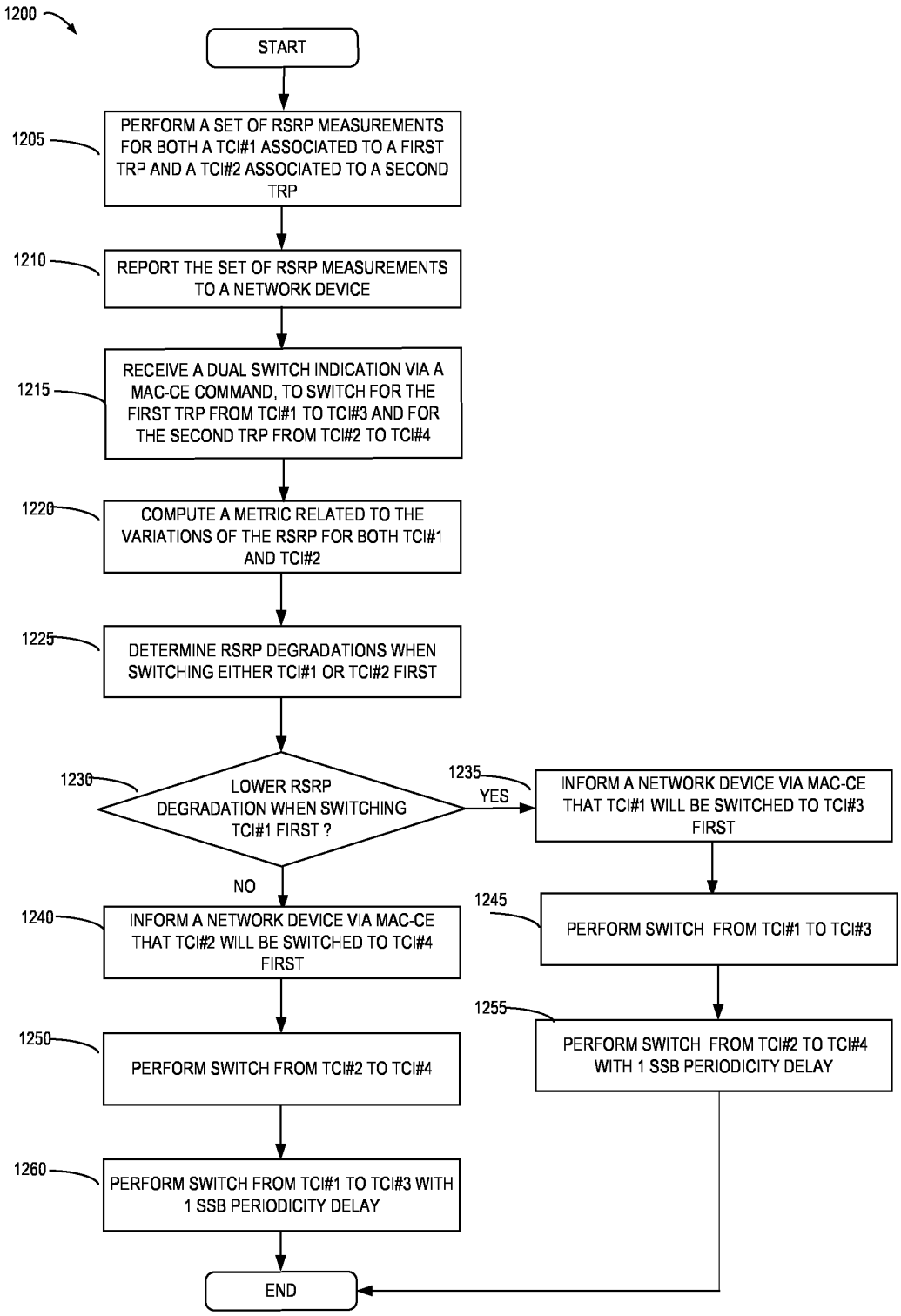

1200
START
1205
PERFORM A SET OF RSRP MEASUREMENTS FOR BOTH A TCI#1 ASSOCIATED TO A FIRST TRP AND A TCI#2 ASSOCIATED TO A SECOND TRP
1210
REPORT THE SET OF RSRP MEASUREMENTS TO A NETWORK DEVICE
1215
RECEIVE A DUAL SWITCH INDICATION VIA A MAC-CE COMMAND, TO SWITCH FOR THE FIRST TRP FROM TCI#1 TO TCI#3 AND FOR THE SECOND TRP FROM TCI#2 TO TCI#4
1220
COMPUTE A METRIC RELATED TO THE VARIATIONS OF THE RSRP FOR BOTH TCI#1 AND TCI#2
1225
DETERMINE RSRP DEGRADATIONS WHEN SWITCHING EITHER TCI#1 OR TCI#2 FIRST
1230
LOWER RSRP DEGRADATION WHEN SWITCHING TCI#1 FIRST ?
YES
1235
INFORM A NETWORK DEVICE VIA MAC-CE THAT TCI#1 WILL BE SWITCHED TO TCI#3 FIRST
NO
1240
INFORM A NETWORK DEVICE VIA MAC-CE THAT TCI#2 WILL BE SWITCHED TO TCI#4 FIRST
1245
PERFORM SWITCH FROM TCI#1 TO TCI#3
1250
PERFORM SWITCH FROM TCI#2 TO TCI#4
1255
PERFORM SWITCH FROM TCI#2 TO TCI#4 WITH 1 SSB PERIODICITY DELAY
1260
PERFORM SWITCH FROM TCI#1 TO TCI#3 WITH 1 SSB PERIODICITY DELAY
END

FIG. 12

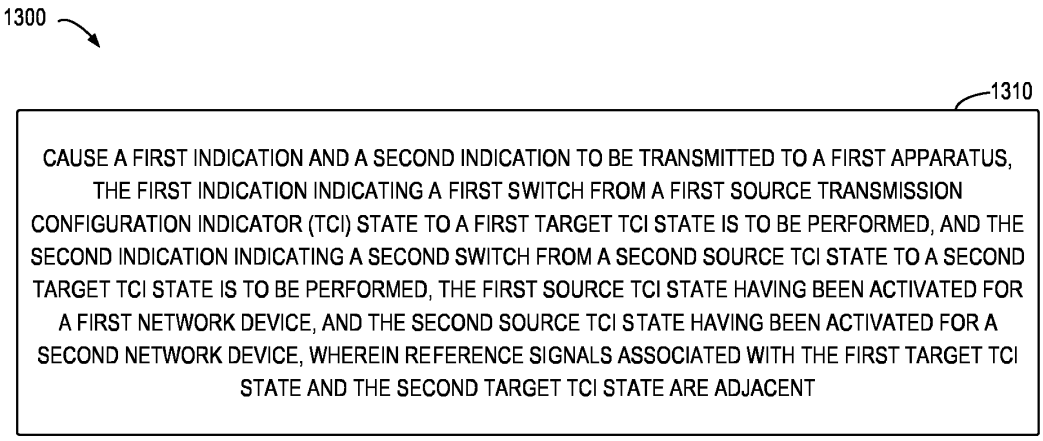


FIG. 13

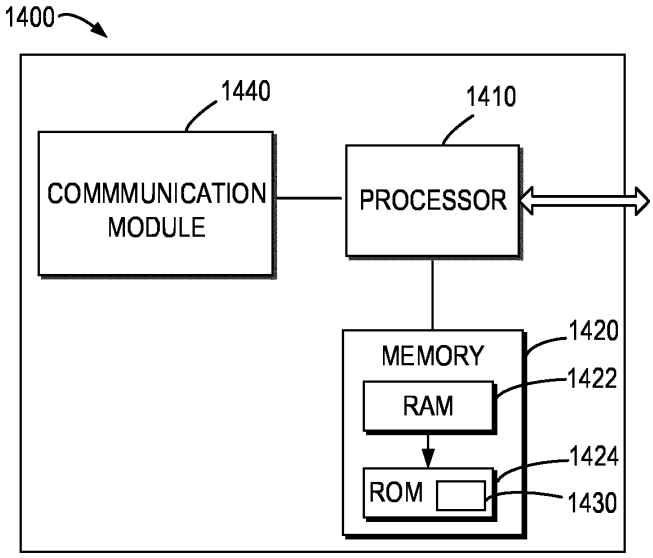


FIG. 14

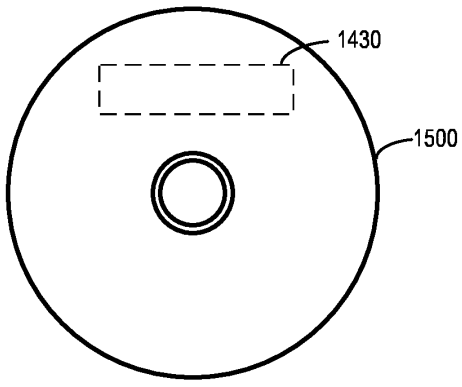


FIG. 15