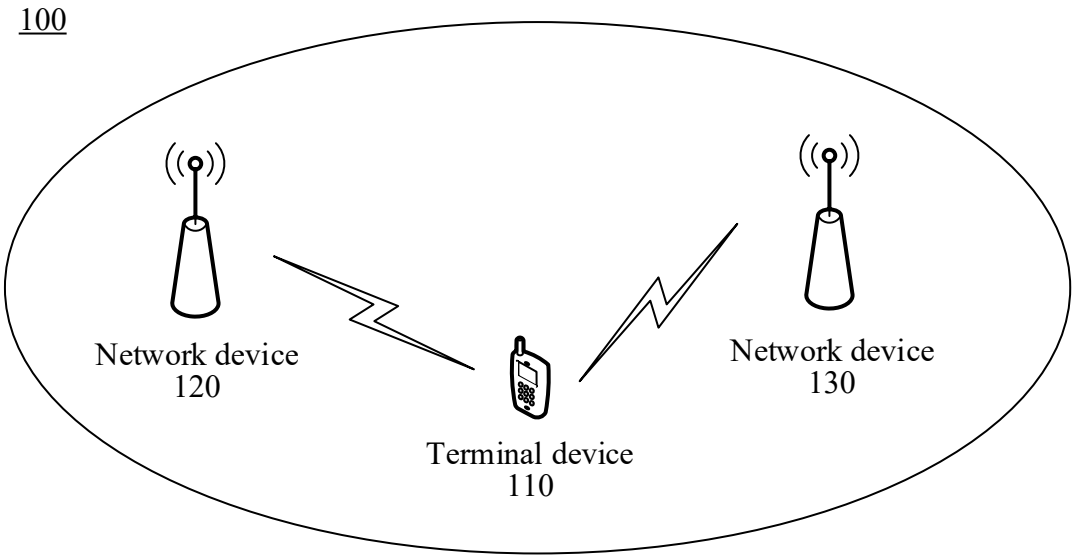


FIG. 1

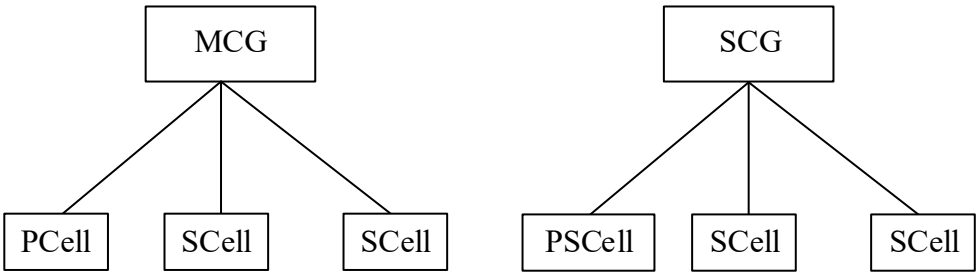


FIG. 2

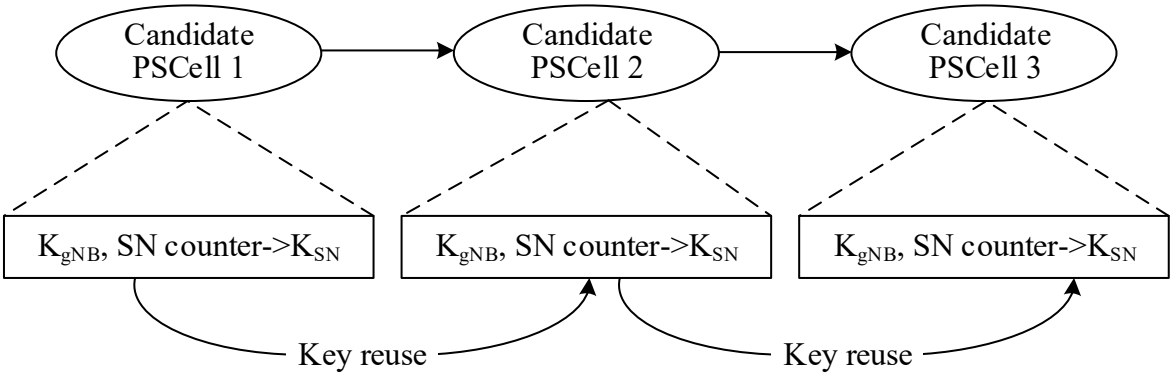


FIG. 3

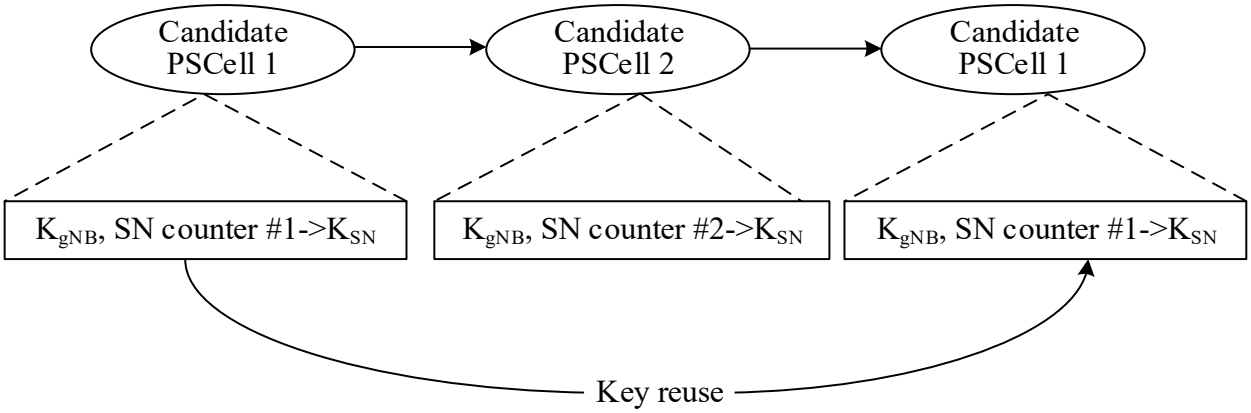

Candidate PSCell 1
Candidate PSCell 2
Candidate PSCell 1
K_{gNB}, SN counter #1->K_{SN}
K_{gNB}, SN counter #2->K_{SN}
K_{gNB}, SN counter #1->K_{SN}
Key reuse

FIG. 4

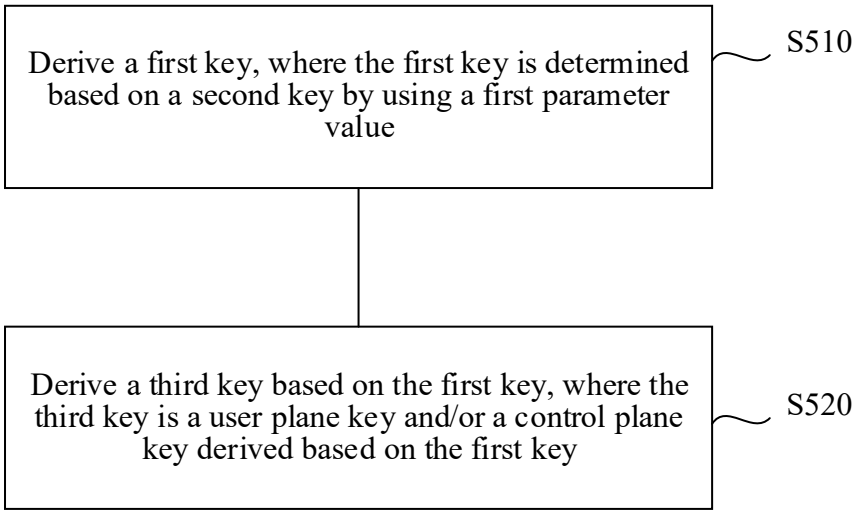

Derive a first key, where the first key is determined based on a second key by using a first parameter value
S510
Derive a third key based on the first key, where the third key is a user plane key and/or a control plane key derived based on the first key
S520

FIG. 5

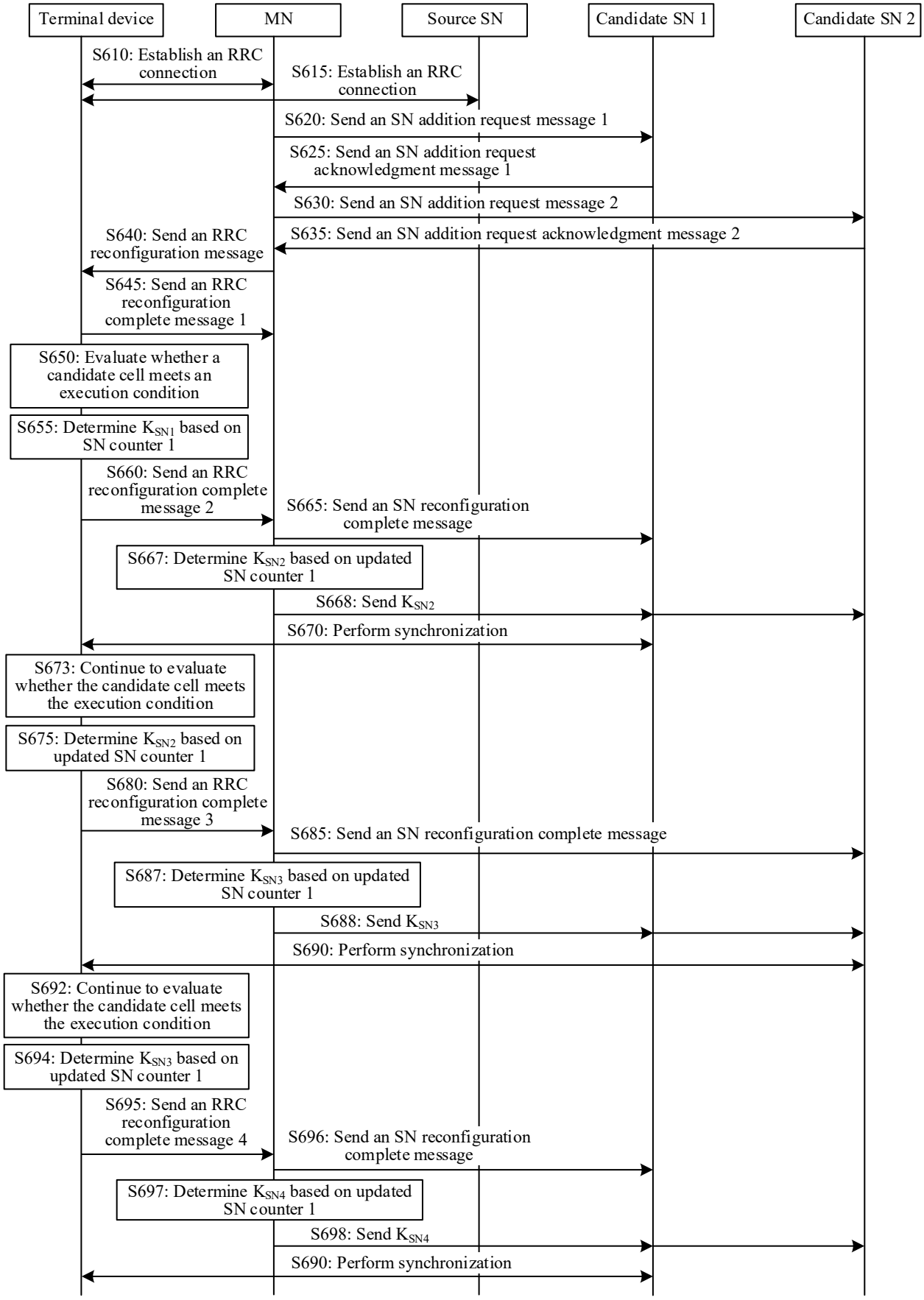

Terminal device
MN
Source SN
Candidate SN 1
Candidate SN 2
S610: Establish an RRC connection
S615: Establish an RRC connection
S620: Send an SN addition request message 1
S625: Send an SN addition request acknowledgment message 1
S630: Send an SN addition request message 2
S635: Send an SN addition request acknowledgment message 2
S640: Send an RRC reconfiguration message
S645: Send an RRC reconfiguration complete message 1
S650: Evaluate whether a candidate cell meets an execution condition
S655: Determine K_{SN1} based on SN counter 1
S660: Send an RRC reconfiguration complete message 2
S665: Send an SN reconfiguration complete message
S667: Determine K_{SN2} based on updated SN counter 1
S668: Send K_{SN2}
S670: Perform synchronization
S673: Continue to evaluate whether the candidate cell meets the execution condition
S675: Determine K_{SN2} based on updated SN counter 1
S680: Send an RRC reconfiguration complete message 3
S685: Send an SN reconfiguration complete message
S687: Determine K_{SN3} based on updated SN counter 1
S688: Send K_{SN3}
S690: Perform synchronization
S692: Continue to evaluate whether the candidate cell meets the execution condition
S694: Determine K_{SN3} based on updated SN counter 1
S695: Send an RRC reconfiguration complete message 4
S696: Send an SN reconfiguration complete message
S697: Determine K_{SN4} based on updated SN counter 1
S698: Send K_{SN4}
S690: Perform synchronization

FIG. 6

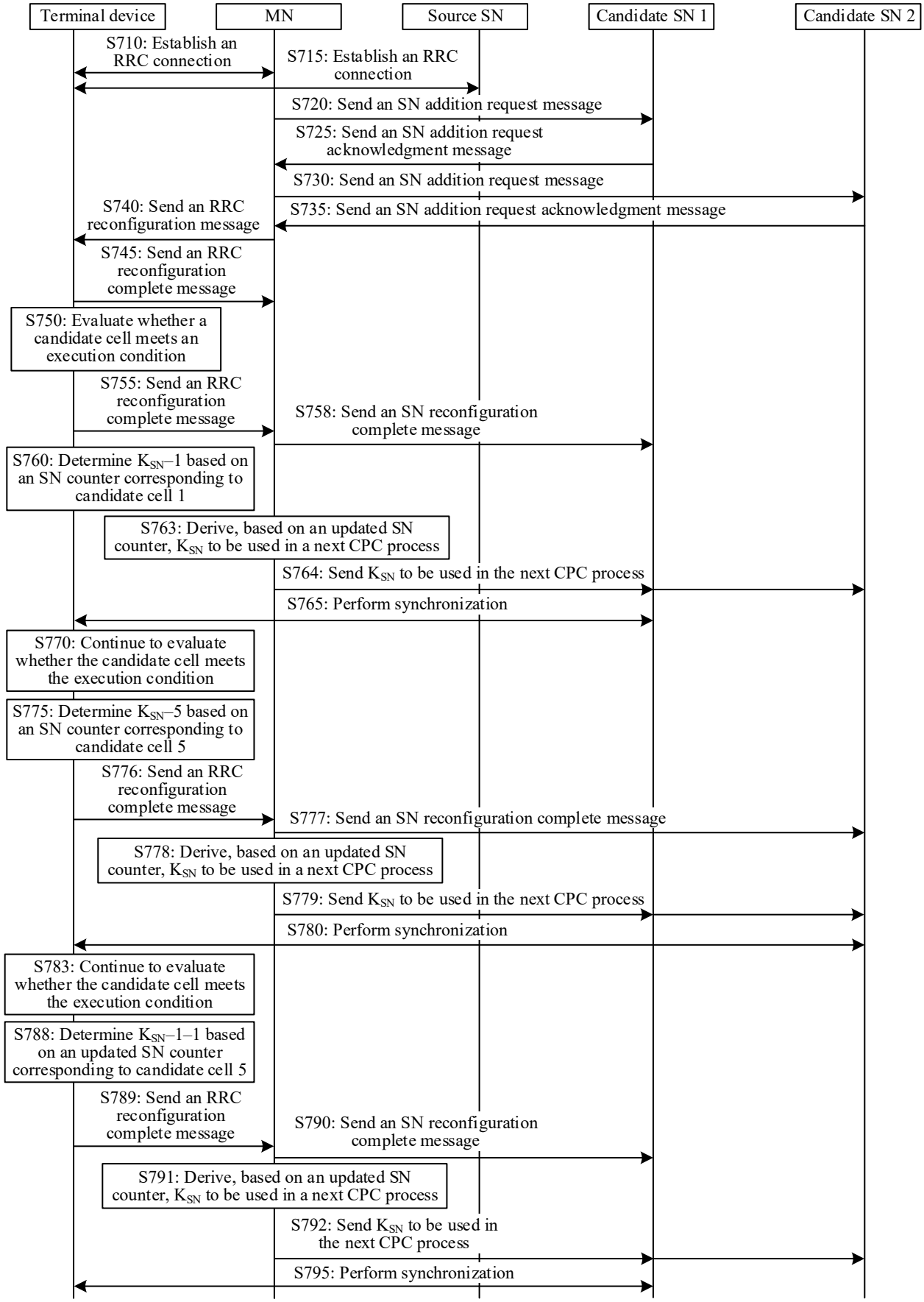

Terminal device
MN
Source SN
Candidate SN 1
Candidate SN 2
S710: Establish an RRC connection
S715: Establish an RRC connection
S720: Send an SN addition request message
S725: Send an SN addition request acknowledgment message
S730: Send an SN addition request message
S735: Send an SN addition request acknowledgment message
S740: Send an RRC reconfiguration message
S745: Send an RRC reconfiguration complete message
S750: Evaluate whether a candidate cell meets an execution condition
S755: Send an RRC reconfiguration complete message
S758: Send an SN reconfiguration complete message
S760: Determine K_{SN}–1 based on an SN counter corresponding to candidate cell 1
S763: Derive, based on an updated SN counter, K_{SN} to be used in a next CPC process
S764: Send K_{SN} to be used in the next CPC process
S765: Perform synchronization
S770: Continue to evaluate whether the candidate cell meets the execution condition
S775: Determine K_{SN}–5 based on an SN counter corresponding to candidate cell 5
S776: Send an RRC reconfiguration complete message
S777: Send an SN reconfiguration complete message
S778: Derive, based on an updated SN counter, K_{SN} to be used in a next CPC process
S779: Send K_{SN} to be used in the next CPC process
S780: Perform synchronization
S783: Continue to evaluate whether the candidate cell meets the execution condition
S788: Determine K_{SN}–1–1 based on an updated SN counter corresponding to candidate cell 5
S789: Send an RRC reconfiguration complete message
S790: Send an SN reconfiguration complete message
S791: Derive, based on an updated SN counter, K_{SN} to be used in a next CPC process
S792: Send K_{SN} to be used in the next CPC process
S795: Perform synchronization

FIG. 7

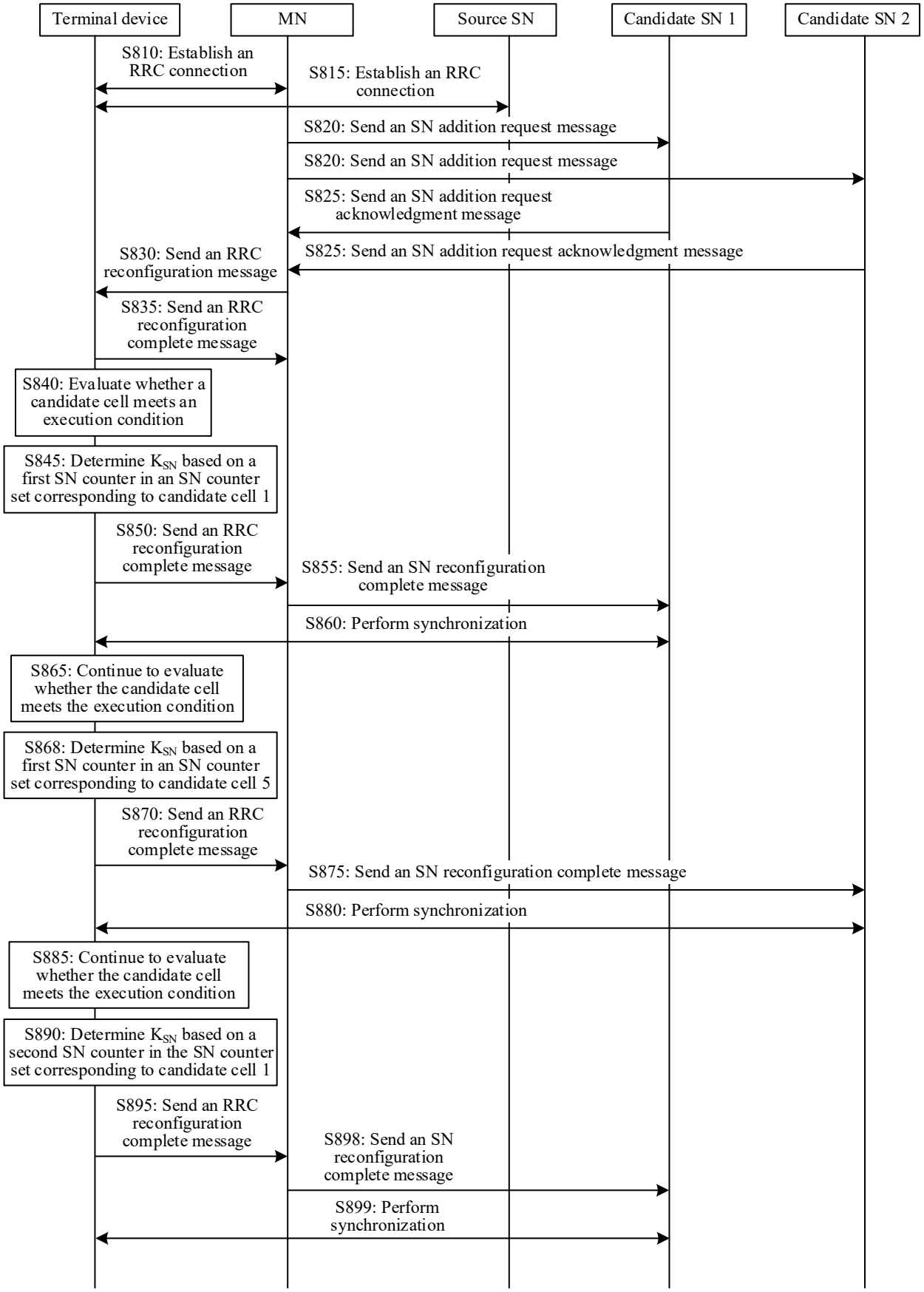

Terminal device
MN
Source SN
Candidate SN 1
Candidate SN 2
S810: Establish an RRC connection
S815: Establish an RRC connection
S820: Send an SN addition request message
S820: Send an SN addition request message
S825: Send an SN addition request acknowledgment message
S825: Send an SN addition request acknowledgment message
S830: Send an RRC reconfiguration message
S835: Send an RRC reconfiguration complete message
S840: Evaluate whether a candidate cell meets an execution condition
S845: Determine K_{SN} based on a first SN counter in an SN counter set corresponding to candidate cell 1
S850: Send an RRC reconfiguration complete message
S855: Send an SN reconfiguration complete message
S860: Perform synchronization
S865: Continue to evaluate whether the candidate cell meets the execution condition
S868: Determine K_{SN} based on a first SN counter in an SN counter set corresponding to candidate cell 5
S870: Send an RRC reconfiguration complete message
S875: Send an SN reconfiguration complete message
S880: Perform synchronization
S885: Continue to evaluate whether the candidate cell meets the execution condition
S890: Determine K_{SN} based on a second SN counter in the SN counter set corresponding to candidate cell 1
S895: Send an RRC reconfiguration complete message
S898: Send an SN reconfiguration complete message
S899: Perform synchronization

FIG. 8

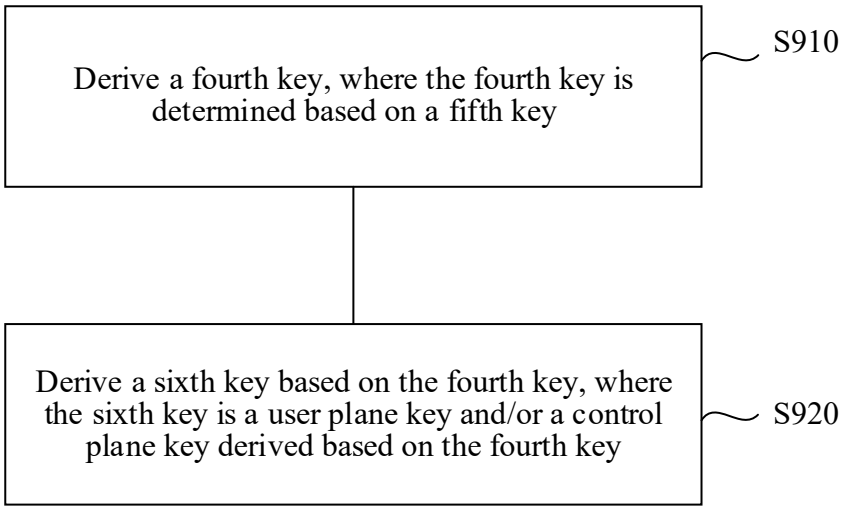

Derive a fourth key, where the fourth key is determined based on a fifth key
S910
Derive a sixth key based on the fourth key, where the sixth key is a user plane key and/or a control plane key derived based on the fourth key
S920

FIG. 9

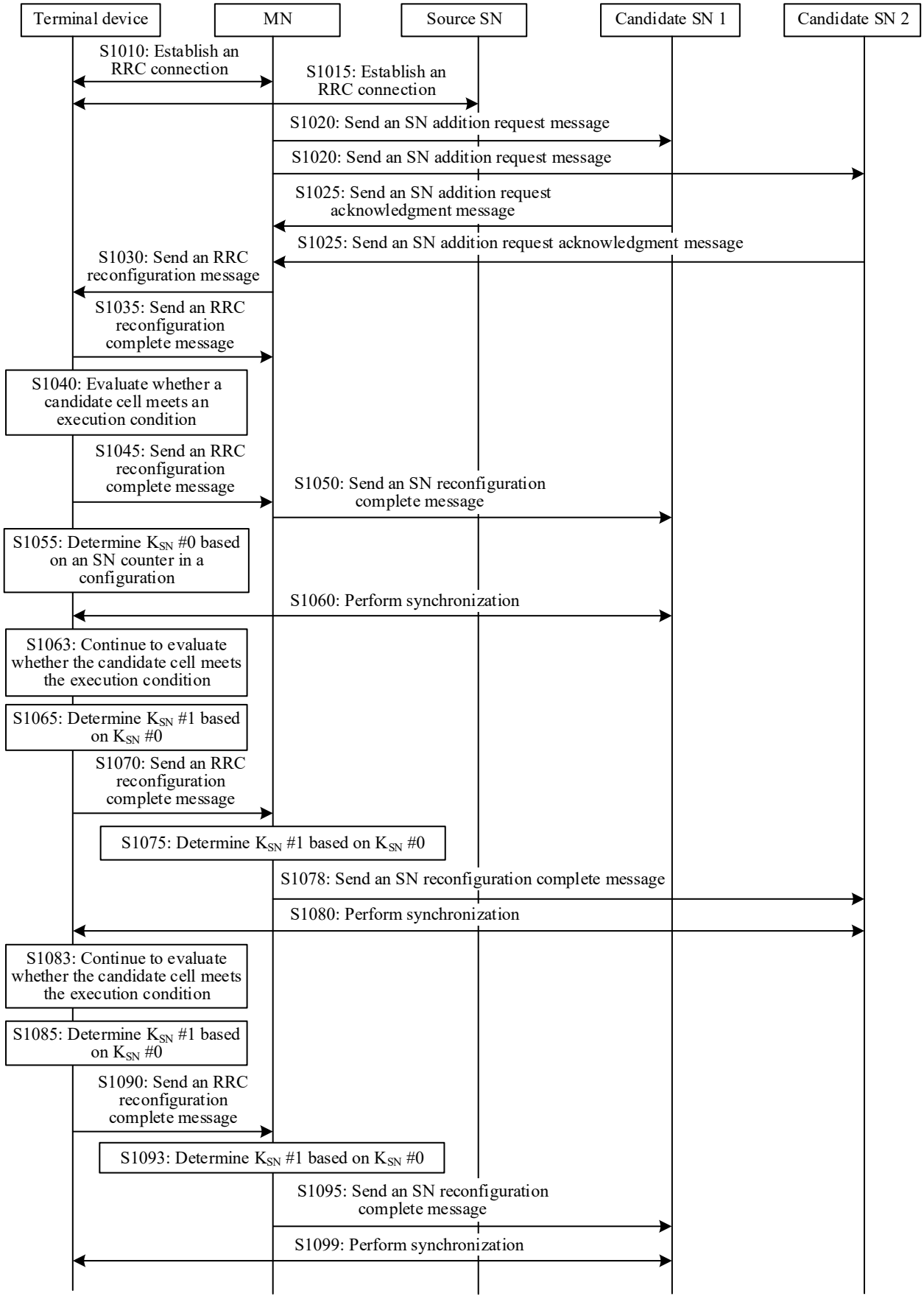

Terminal device
MN
Source SN
Candidate SN 1
Candidate SN 2
S1010: Establish an RRC connection
S1015: Establish an RRC connection
S1020: Send an SN addition request message
S1020: Send an SN addition request message
S1025: Send an SN addition request acknowledgment message
S1025: Send an SN addition request acknowledgment message
S1030: Send an RRC reconfiguration message
S1035: Send an RRC reconfiguration complete message
S1040: Evaluate whether a candidate cell meets an execution condition
S1045: Send an RRC reconfiguration complete message
S1050: Send an SN reconfiguration complete message
S1055: Determine K_{SN} #0 based on an SN counter in a configuration
S1060: Perform synchronization
S1063: Continue to evaluate whether the candidate cell meets the execution condition
S1065: Determine K_{SN} #1 based on K_{SN} #0
S1070: Send an RRC reconfiguration complete message
S1075: Determine K_{SN} #1 based on K_{SN} #0
S1078: Send an SN reconfiguration complete message
S1080: Perform synchronization
S1083: Continue to evaluate whether the candidate cell meets the execution condition
S1085: Determine K_{SN} #1 based on K_{SN} #0
S1090: Send an RRC reconfiguration complete message
S1093: Determine K_{SN} #1 based on K_{SN} #0
S1095: Send an SN reconfiguration complete message
S1099: Perform synchronization

FIG. 10

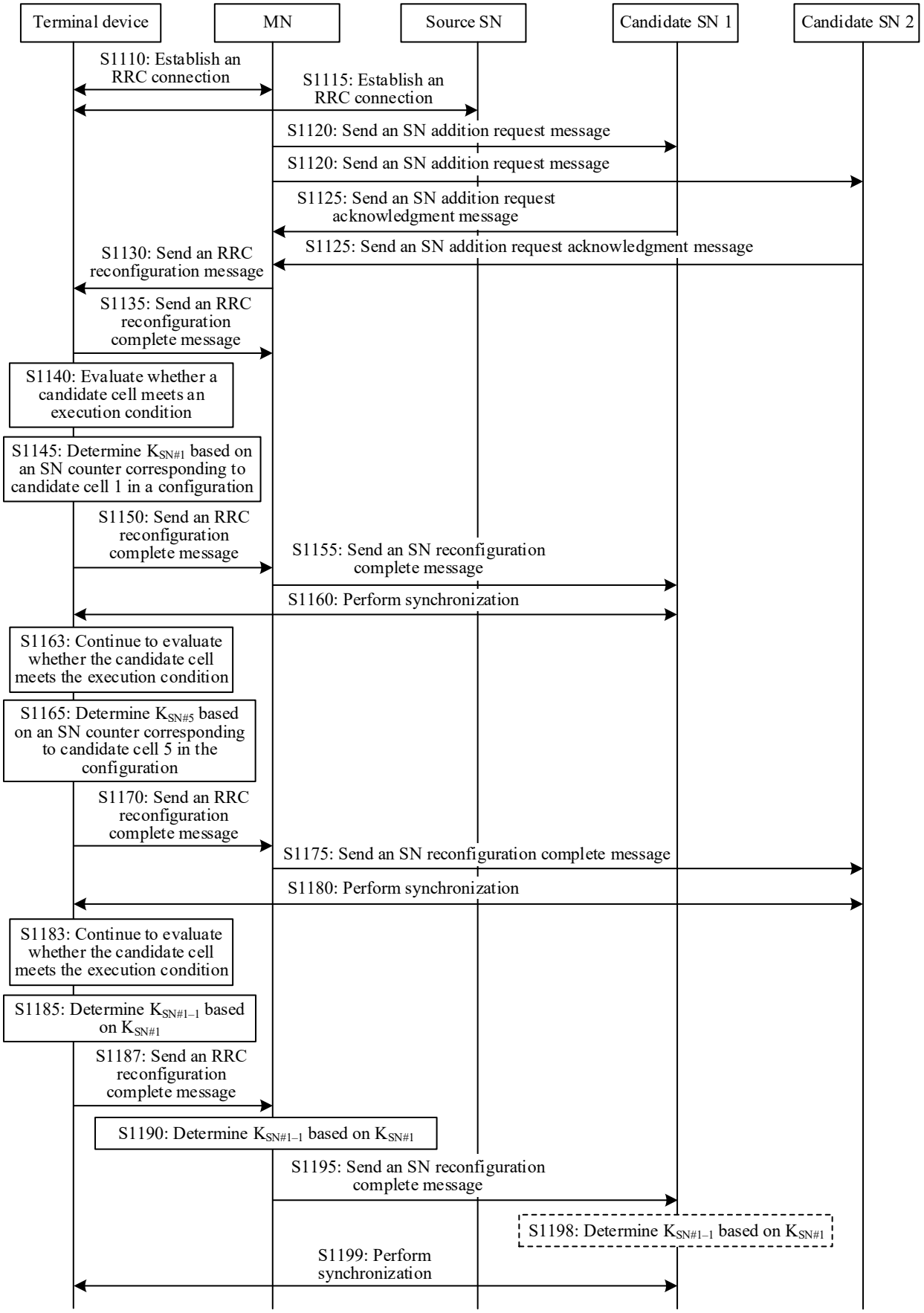

Terminal device
MN
Source SN
Candidate SN 1
Candidate SN 2
S1110: Establish an RRC connection
S1115: Establish an RRC connection
S1120: Send an SN addition request message
S1120: Send an SN addition request message
S1125: Send an SN addition request acknowledgment message
S1125: Send an SN addition request acknowledgment message
S1130: Send an RRC reconfiguration message
S1135: Send an RRC reconfiguration complete message
S1140: Evaluate whether a candidate cell meets an execution condition
S1145: Determine $K_{SN\#1}$ based on an SN counter corresponding to candidate cell 1 in a configuration
S1150: Send an RRC reconfiguration complete message
S1155: Send an SN reconfiguration complete message
S1160: Perform synchronization
S1163: Continue to evaluate whether the candidate cell meets the execution condition
S1165: Determine $K_{SN\#5}$ based on an SN counter corresponding to candidate cell 5 in the configuration
S1170: Send an RRC reconfiguration complete message
S1175: Send an SN reconfiguration complete message
S1180: Perform synchronization
S1183: Continue to evaluate whether the candidate cell meets the execution condition
S1185: Determine $K_{SN\#1-1}$ based on $K_{SN\#1}$
S1187: Send an RRC reconfiguration complete message
S1190: Determine $K_{SN\#1-1}$ based on $K_{SN\#1}$
S1195: Send an SN reconfiguration complete message
S1198: Determine $K_{SN\#1-1}$ based on $K_{SN\#1}$
S1199: Perform synchronization

FIG. 11

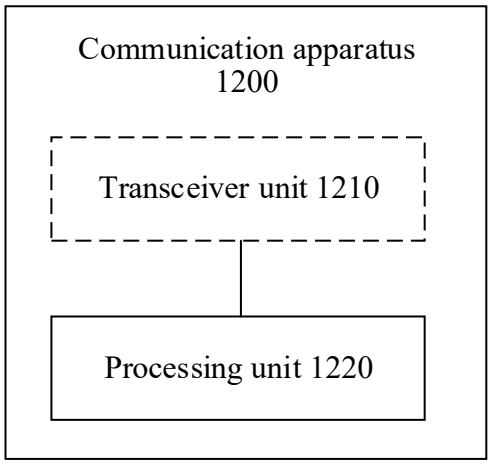


FIG. 12

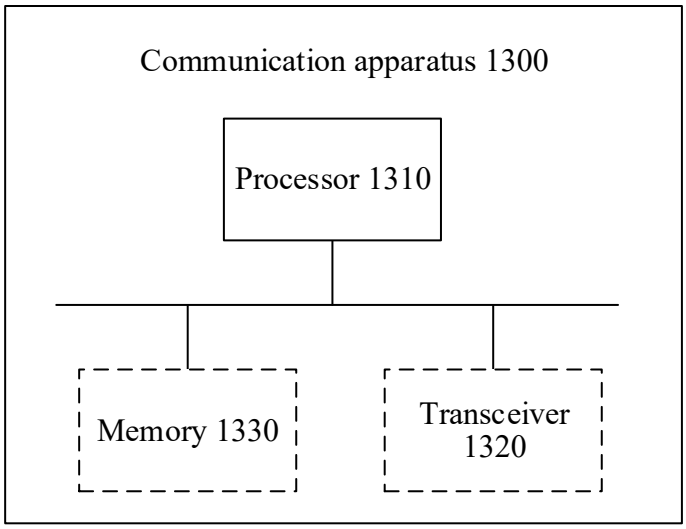


FIG. 13

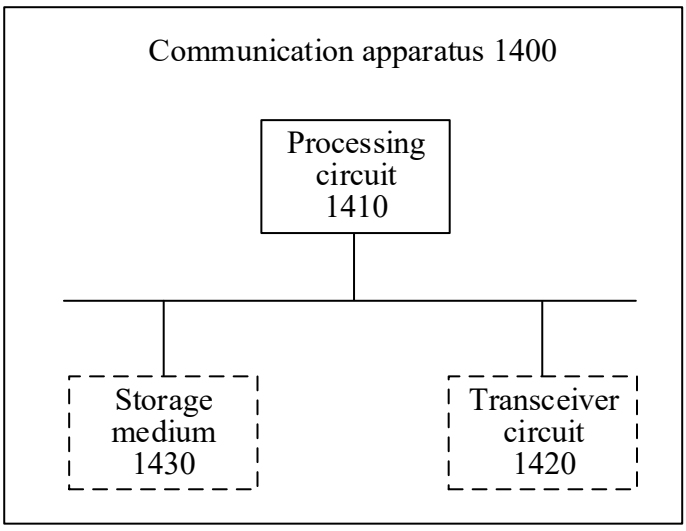


FIG. 14