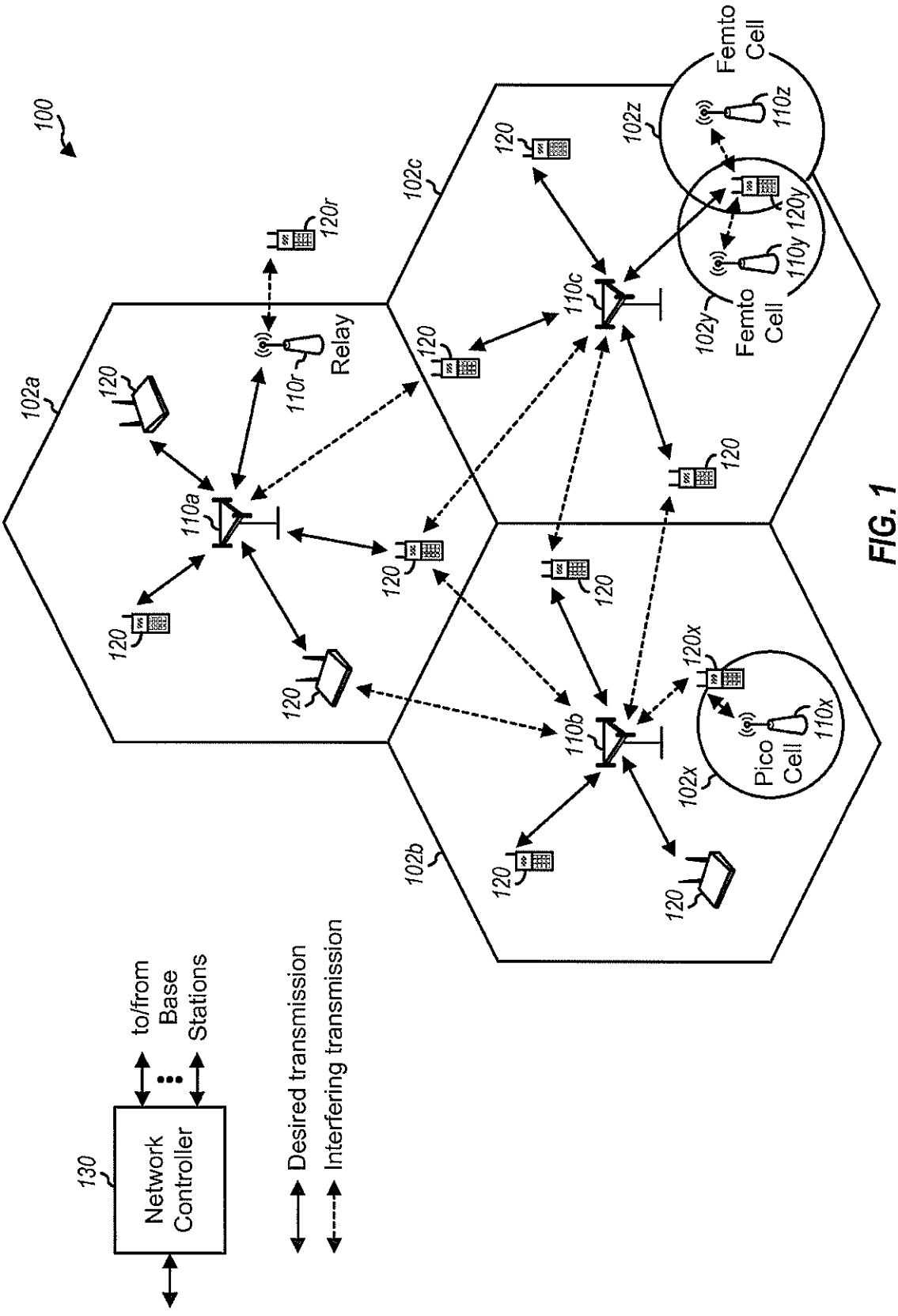
100
102a
102b
102c
102x
102y
102z
110a
110b
110c
110r
110x
110y
110z
120
120r
120x
120y
Relay
Femto Cell
Femto Cell
Pico Cell
130
Network Controller
to/from Base Stations
Desired transmission
Interfering transmission

FIG. 1

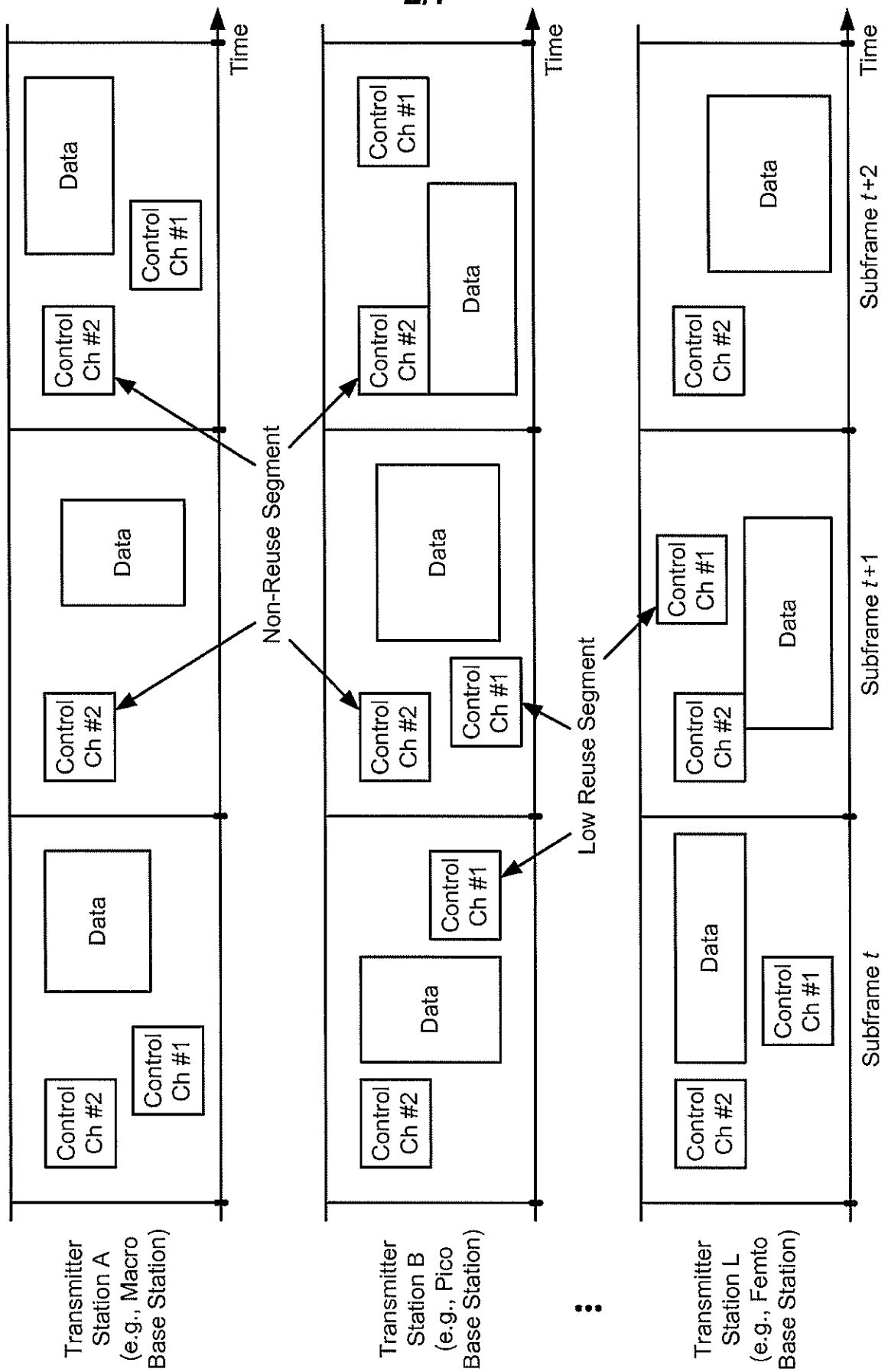
Transmitter Station A (e.g., Macro Base Station)
Transmitter Station B (e.g., Pico Base Station)
Transmitter Station L (e.g., Femto Base Station)
Time
Subframe t
Subframe t+1
Subframe t+2
Control Ch #1
Control Ch #2
Data
Non-Reuse Segment
Low Reuse Segment

FIG. 2

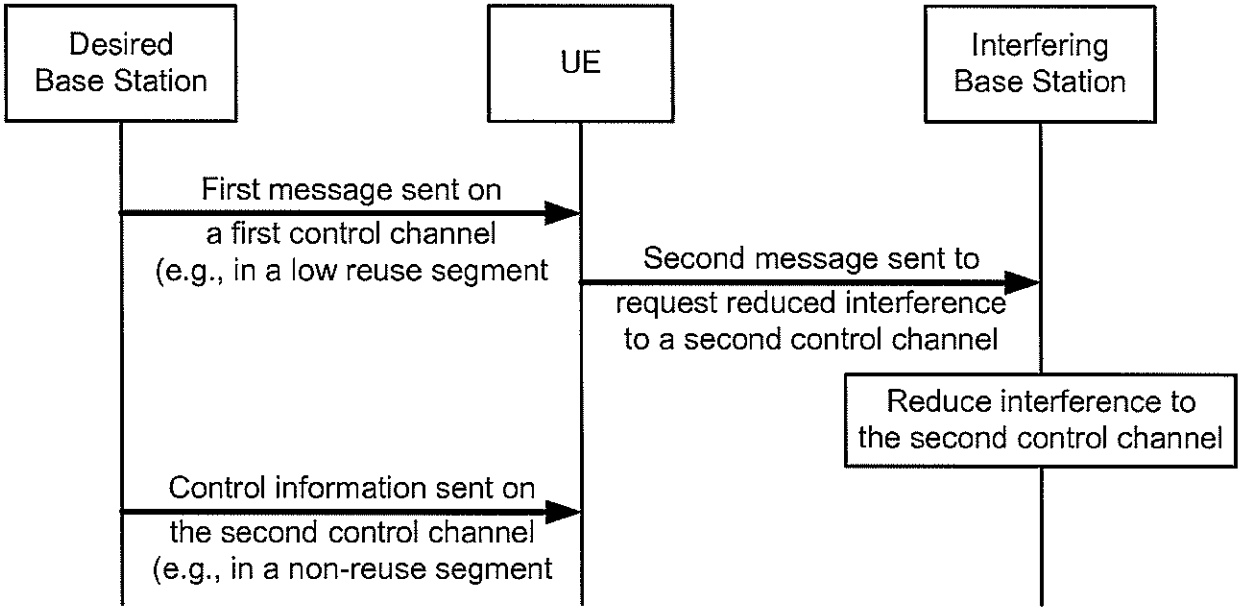
Desired Base Station
UE
Interfering Base Station
First message sent on a first control channel (e.g., in a low reuse segment
Second message sent to request reduced interference to a second control channel
Reduce interference to the second control channel
Control information sent on the second control channel (e.g., in a non-reuse segment

FIG. 3

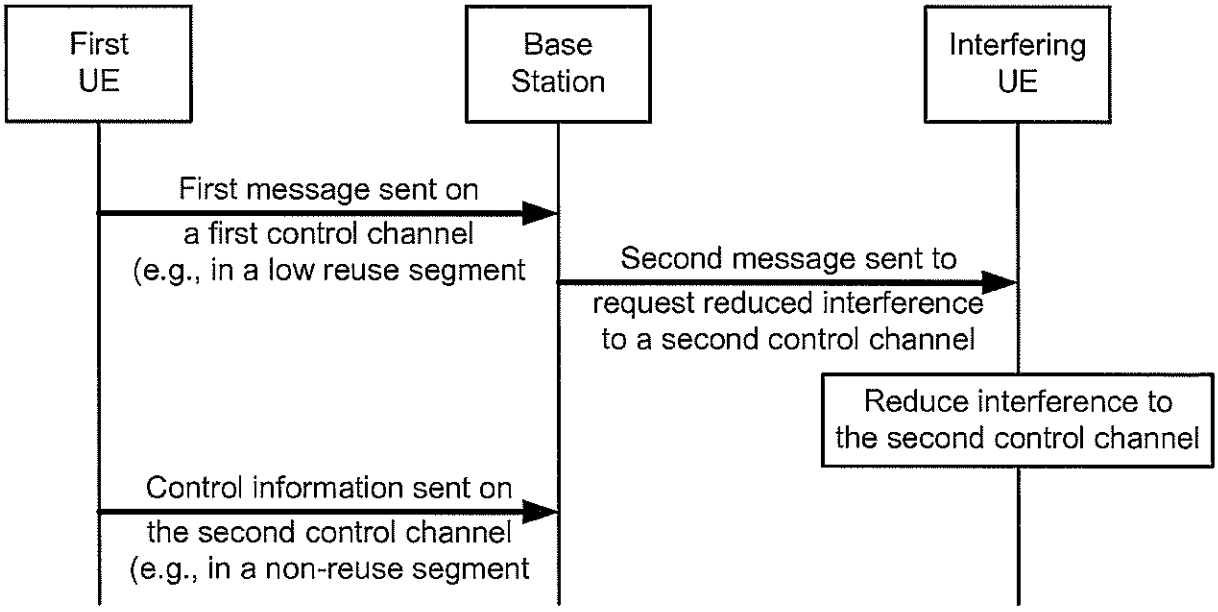
First UE
Base Station
Interfering UE
First message sent on a first control channel (e.g., in a low reuse segment
Second message sent to request reduced interference to a second control channel
Reduce interference to the second control channel
Control information sent on the second control channel (e.g., in a non-reuse segment

FIG. 4

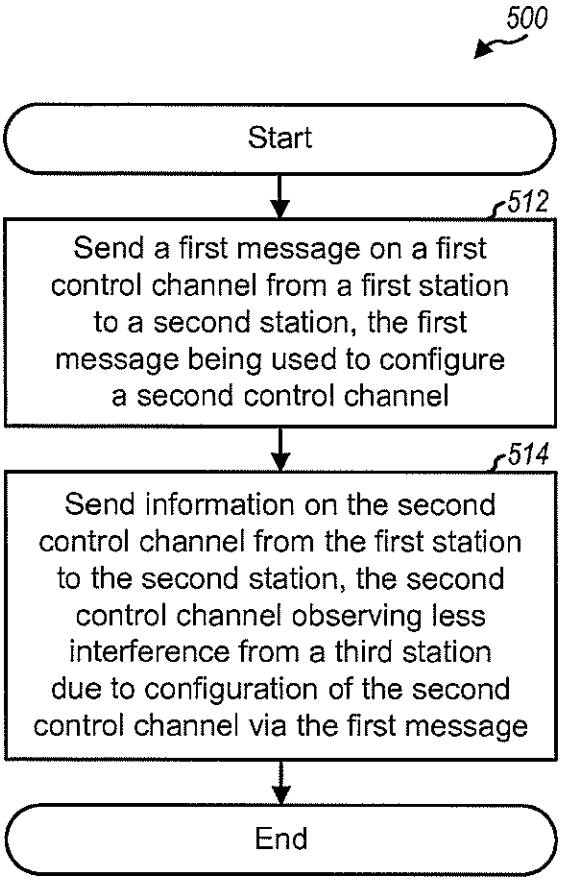
500
Start
512
Send a first message on a first control channel from a first station to a second station, the first message being used to configure a second control channel
514
Send information on the second control channel from the first station to the second station, the second control channel observing less interference from a third station due to configuration of the second control channel via the first message
End

FIG. 5

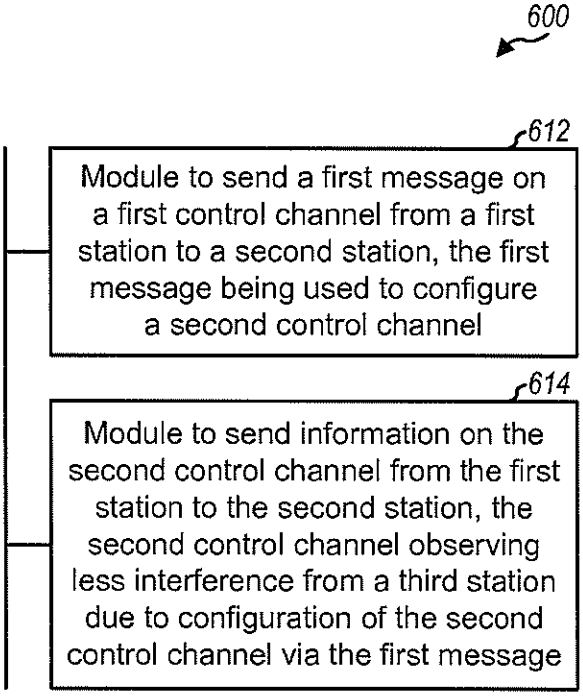
600
612
Module to send a first message on a first control channel from a first station to a second station, the first message being used to configure a second control channel
614
Module to send information on the second control channel from the first station to the second station, the second control channel observing less interference from a third station due to configuration of the second control channel via the first message

FIG. 6

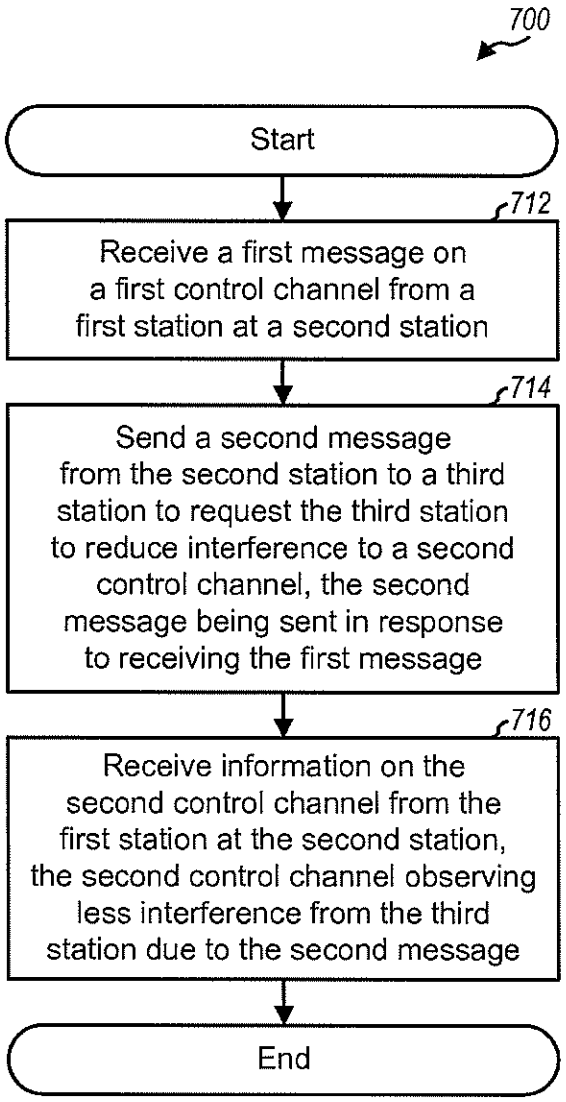
700
Start
712
Receive a first message on a first control channel from a first station at a second station
714
Send a second message from the second station to a third station to request the third station to reduce interference to a second control channel, the second message being sent in response to receiving the first message
716
Receive information on the second control channel from the first station at the second station, the second control channel observing less interference from the third station due to the second message
End

FIG. 7

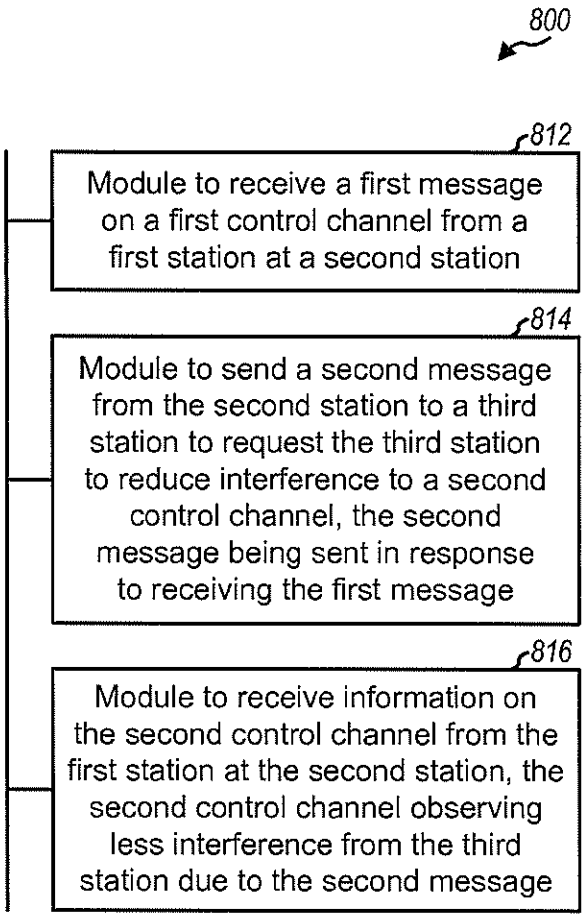
800
812
Module to receive a first message on a first control channel from a first station at a second station
814
Module to send a second message from the second station to a third station to request the third station to reduce interference to a second control channel, the second message being sent in response to receiving the first message
816
Module to receive information on the second control channel from the first station at the second station, the second control channel observing less interference from the third station due to the second message

FIG. 8

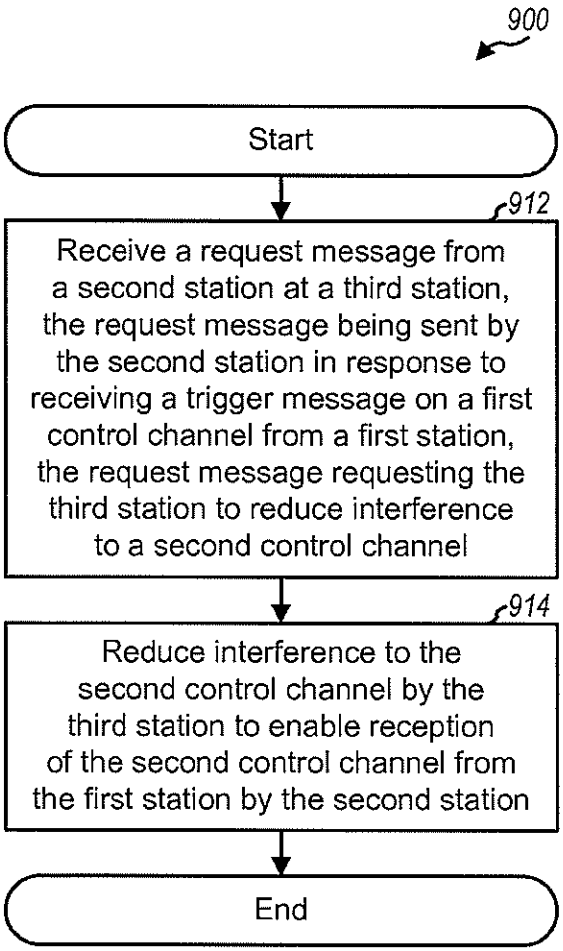
900
Start
912
Receive a request message from a second station at a third station, the request message being sent by the second station in response to receiving a trigger message on a first control channel from a first station, the request message requesting the third station to reduce interference to a second control channel
914
Reduce interference to the second control channel by the third station to enable reception of the second control channel from the first station by the second station
End

FIG. 9

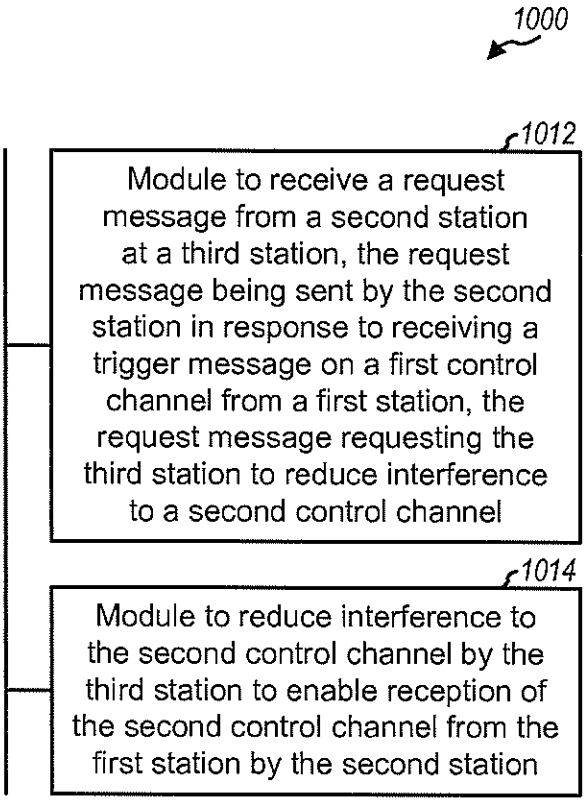
1000
1012
Module to receive a request message from a second station at a third station, the request message being sent by the second station in response to receiving a trigger message on a first control channel from a first station, the request message requesting the third station to reduce interference to a second control channel
1014
Module to reduce interference to the second control channel by the third station to enable reception of the second control channel from the first station by the second station

FIG. 10

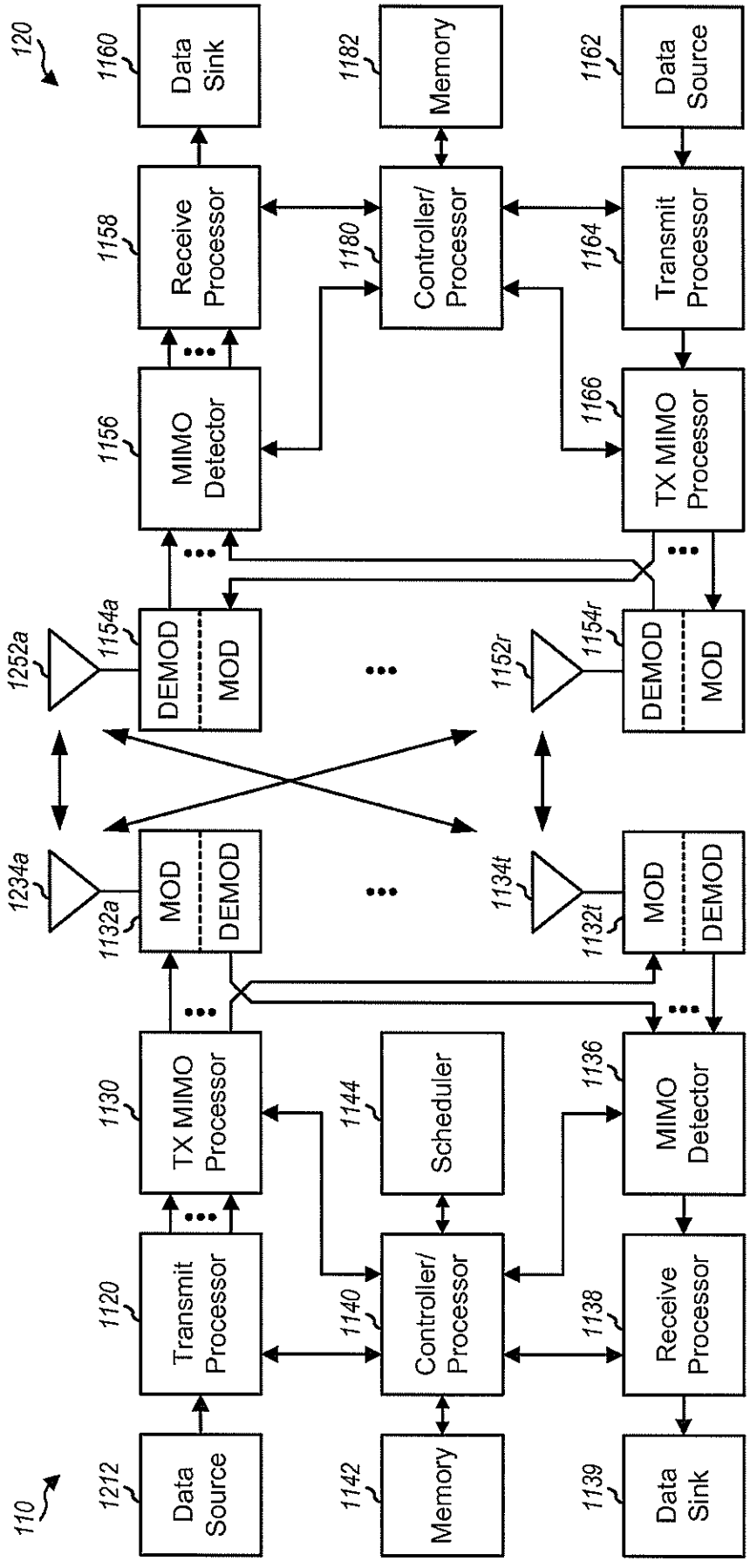
120
1160
Data Sink
1182
Memory
1162
Data Source
1158
Receive Processor
1180
Controller/ Processor
1164
Transmit Processor
1156
MIMO Detector
1166
TX MIMO Processor
1252a
1154a
DEMOD
MOD
1152r
1154r
DEMOD
MOD
1234a
1132a
MOD
DEMOD
1134t
1132t
MOD
DEMOD
1130
TX MIMO Processor
1144
Scheduler
1136
MIMO Detector
1120
Transmit Processor
1140
Controller/ Processor
1138
Receive Processor
110
1212
Data Source
1142
Memory
1139
Data Sink

FIG. 11