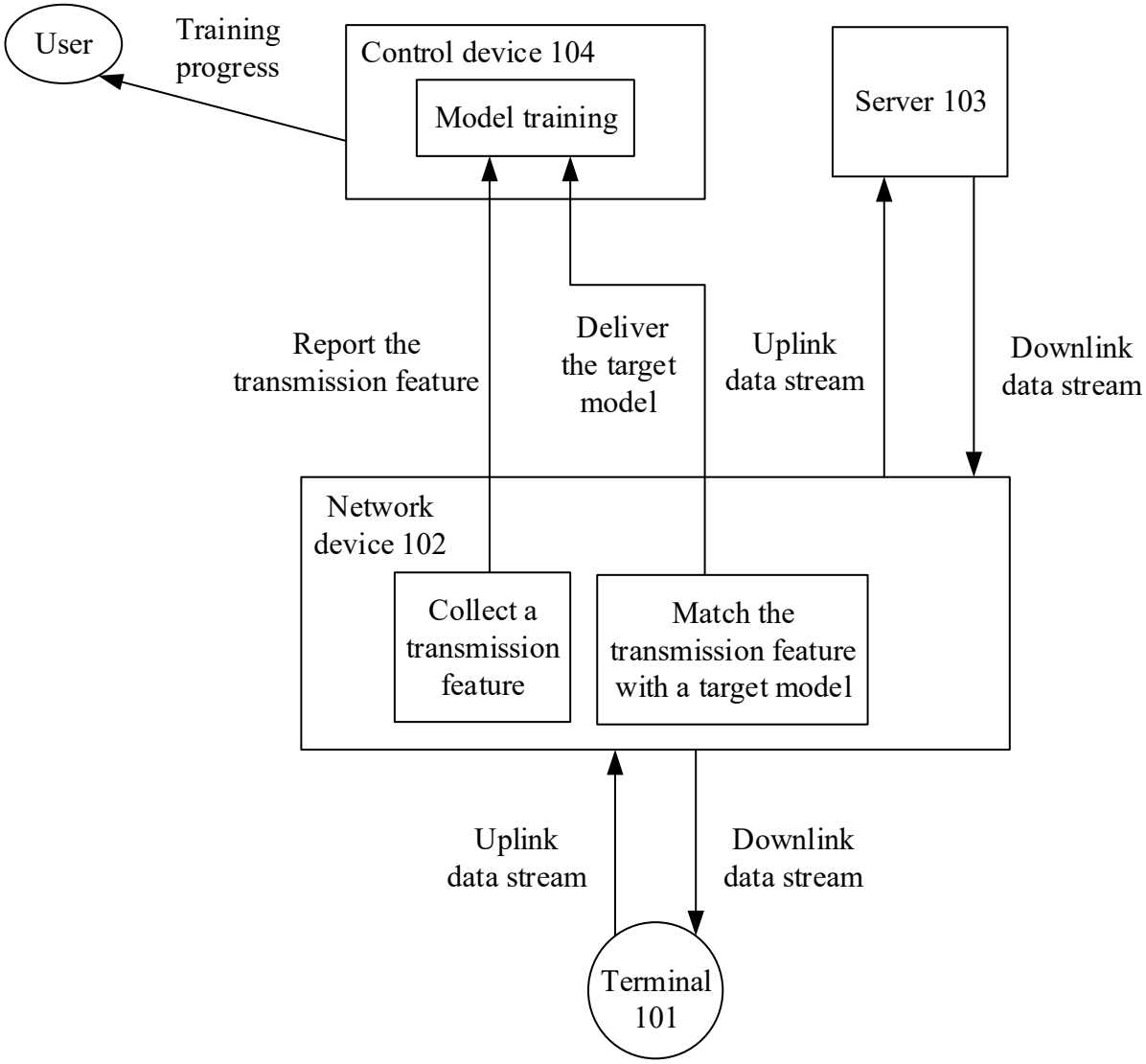
User
Training progress
Control device 104
Model training
Server 103
Report the transmission feature
Deliver the target model
Uplink data stream
Downlink data stream
Network device 102
Collect a transmission feature
Match the transmission feature with a target model
Uplink data stream
Downlink data stream
Terminal 101

FIG. 1

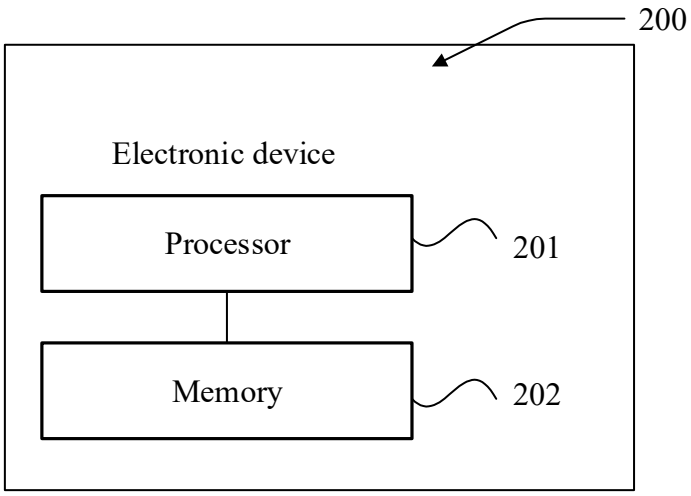

FIG. 2

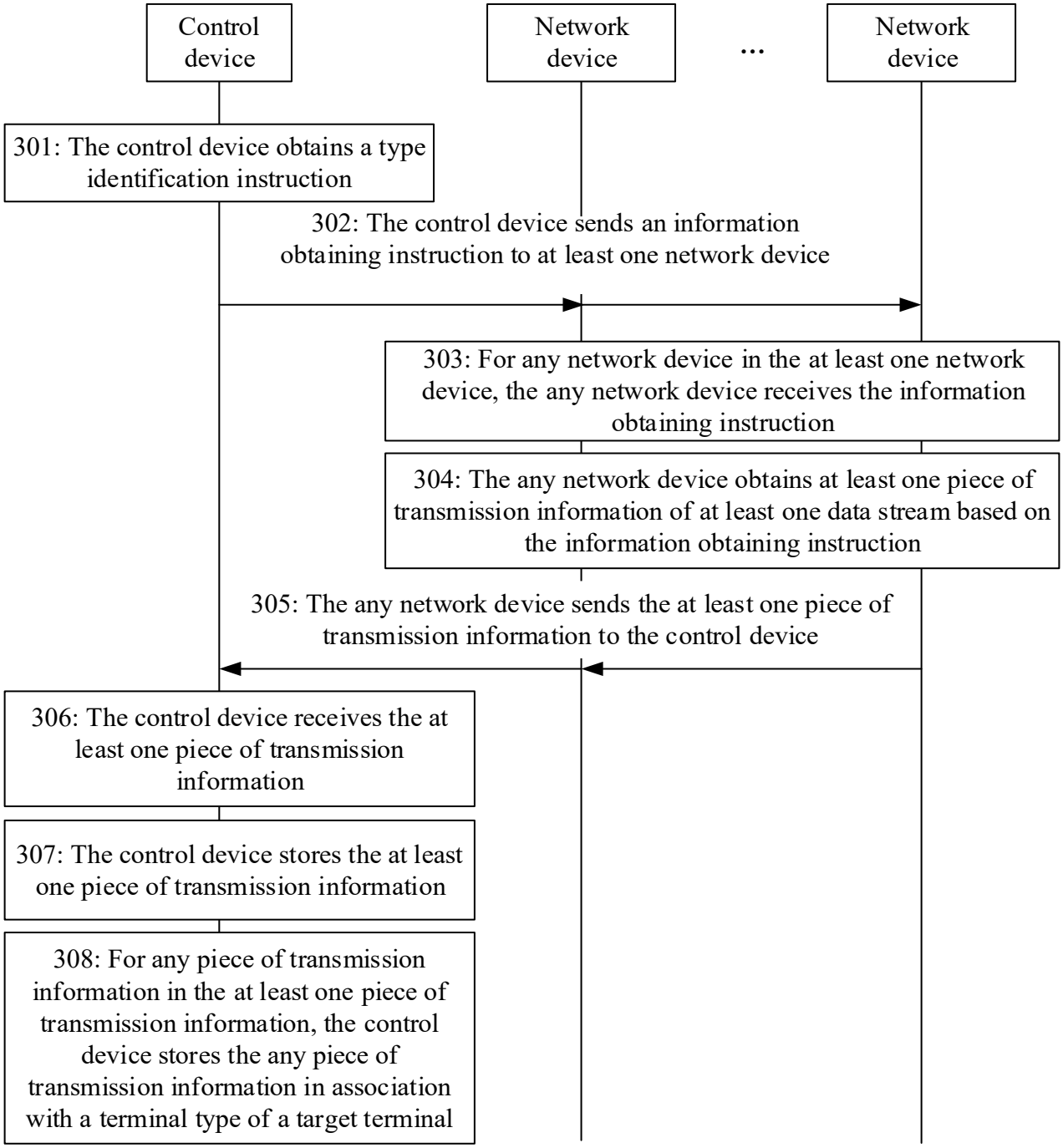
Control device
Network device
...
Network device
301: The control device obtains a type identification instruction
302: The control device sends an information obtaining instruction to at least one network device
303: For any network device in the at least one network device, the any network device receives the information obtaining instruction
304: The any network device obtains at least one piece of transmission information of at least one data stream based on the information obtaining instruction
305: The any network device sends the at least one piece of transmission information to the control device
306: The control device receives the at least one piece of transmission information
307: The control device stores the at least one piece of transmission information
308: For any piece of transmission information in the at least one piece of transmission information, the control device stores the any piece of transmission information in association with a terminal type of a target terminal

FIG. 3

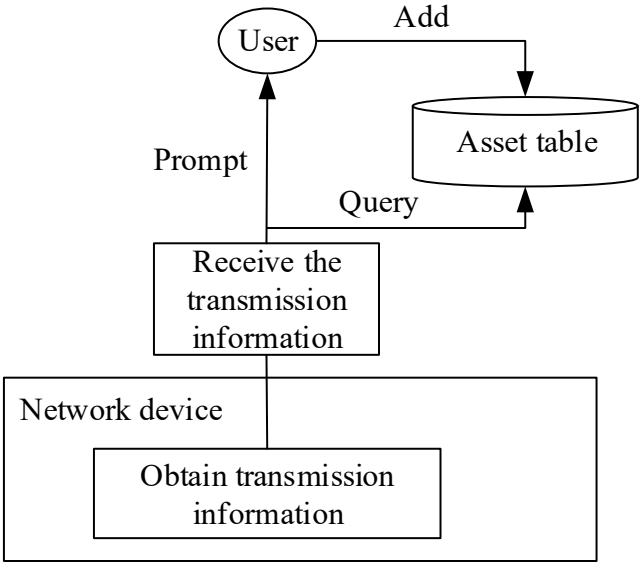
User
Add
Asset table
Prompt
Query
Receive the transmission information
Network device
Obtain transmission information

FIG. 4

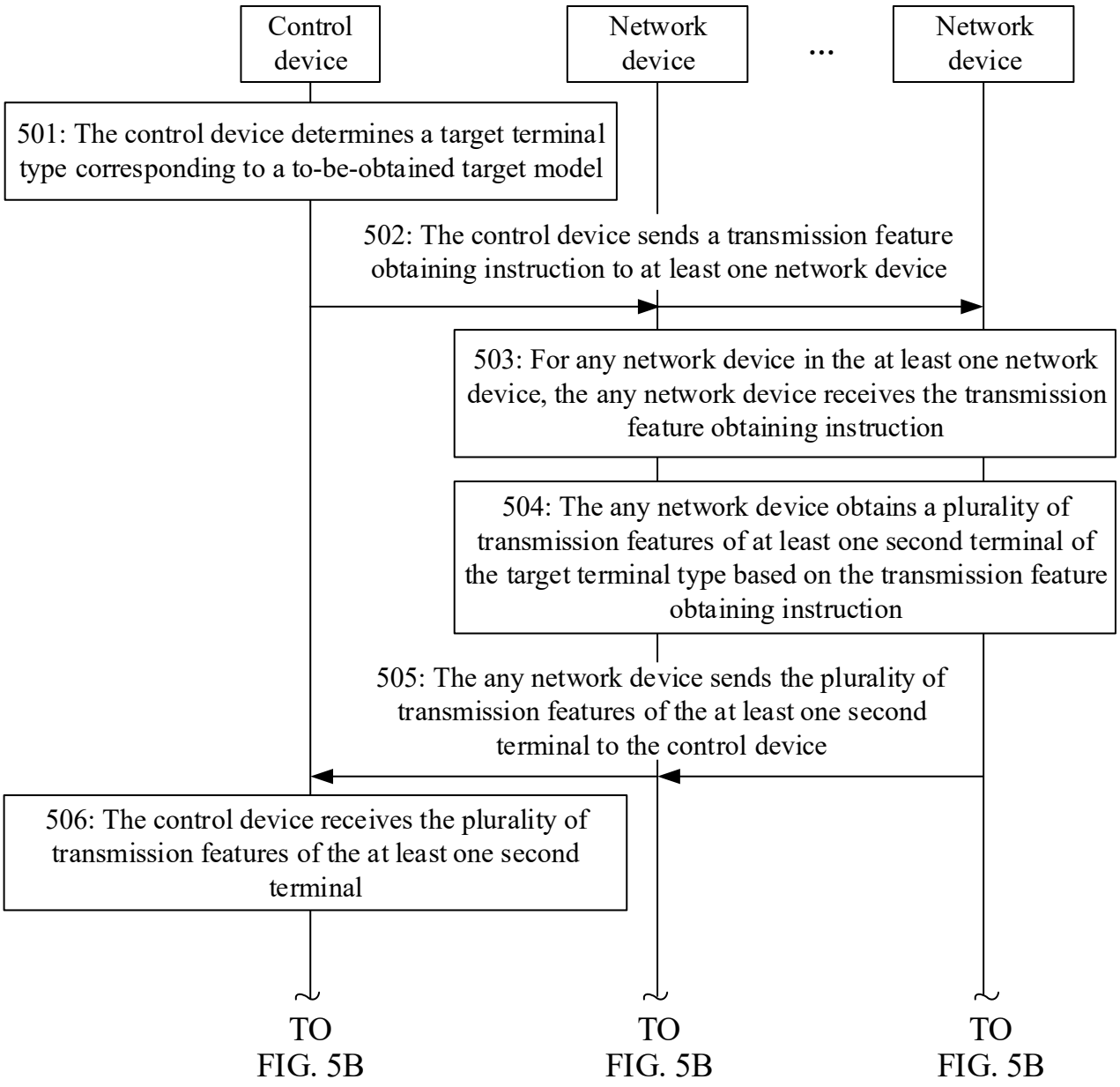
Control device
Network device
...
Network device
501: The control device determines a target terminal type corresponding to a to-be-obtained target model
502: The control device sends a transmission feature obtaining instruction to at least one network device
503: For any network device in the at least one network device, the any network device receives the transmission feature obtaining instruction
504: The any network device obtains a plurality of transmission features of at least one second terminal of the target terminal type based on the transmission feature obtaining instruction
505: The any network device sends the plurality of transmission features of the at least one second terminal to the control device
506: The control device receives the plurality of transmission features of the at least one second terminal
TO FIG. 5B
TO FIG. 5B
TO FIG. 5B

FIG. 5A

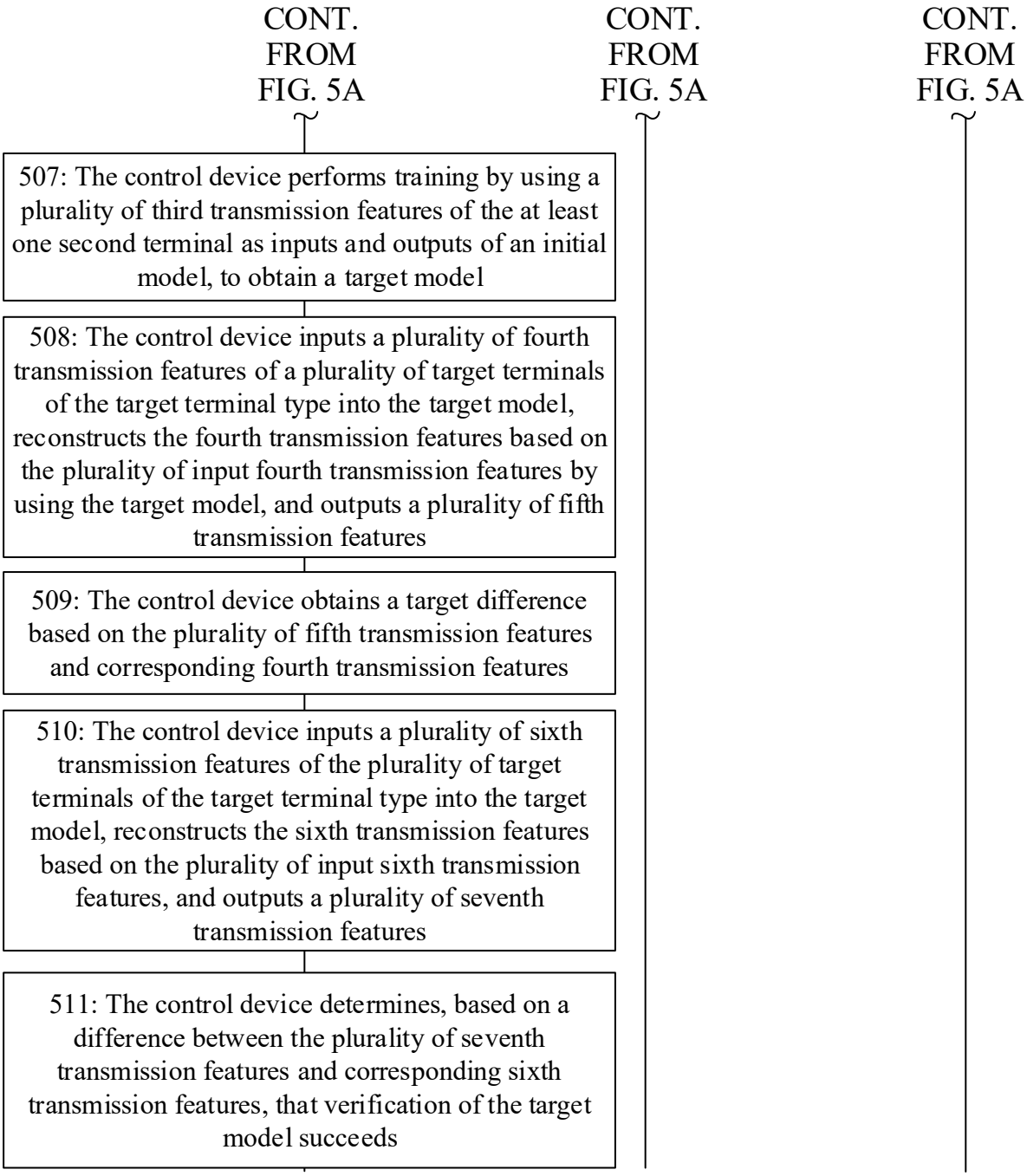
CONT. FROM FIG. 5A
CONT. FROM FIG. 5A
CONT. FROM FIG. 5A
507: The control device performs training by using a plurality of third transmission features of the at least one second terminal as inputs and outputs of an initial model, to obtain a target model
508: The control device inputs a plurality of fourth transmission features of a plurality of target terminals of the target terminal type into the target model, reconstructs the fourth transmission features based on the plurality of input fourth transmission features by using the target model, and outputs a plurality of fifth transmission features
509: The control device obtains a target difference based on the plurality of fifth transmission features and corresponding fourth transmission features
510: The control device inputs a plurality of sixth transmission features of the plurality of target terminals of the target terminal type into the target model, reconstructs the sixth transmission features based on the plurality of input sixth transmission features, and outputs a plurality of seventh transmission features
511: The control device determines, based on a difference between the plurality of seventh transmission features and corresponding sixth transmission features, that verification of the target model succeeds

FIG. 5B

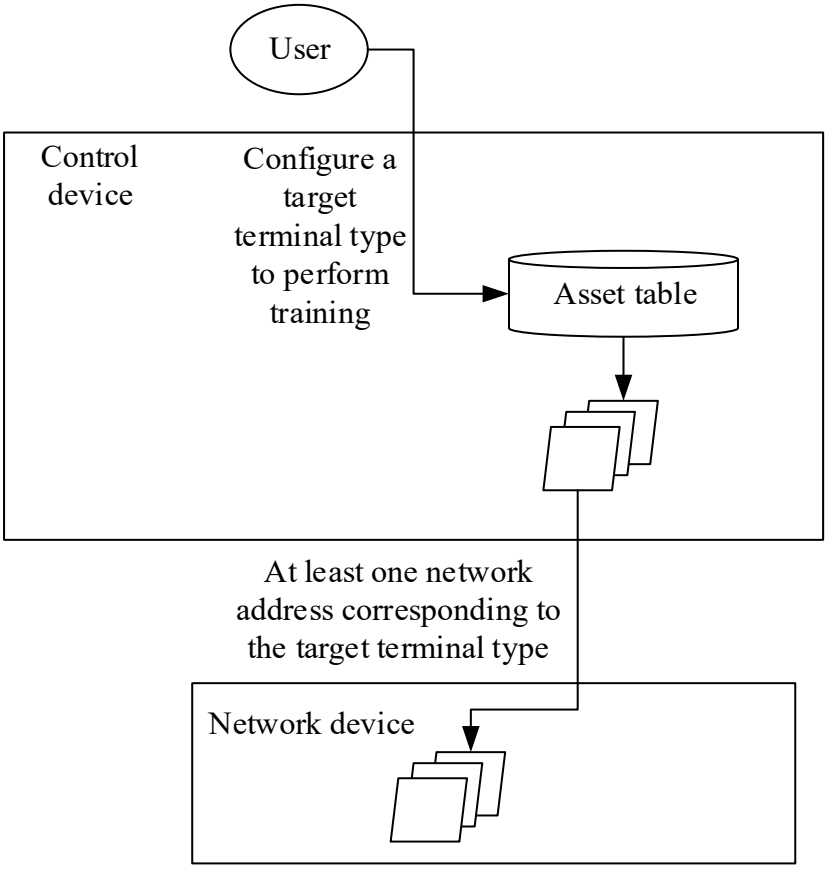
User
Control device
Configure a target terminal type to perform training
Asset table
At least one network address corresponding to the target terminal type
Network device

FIG. 6

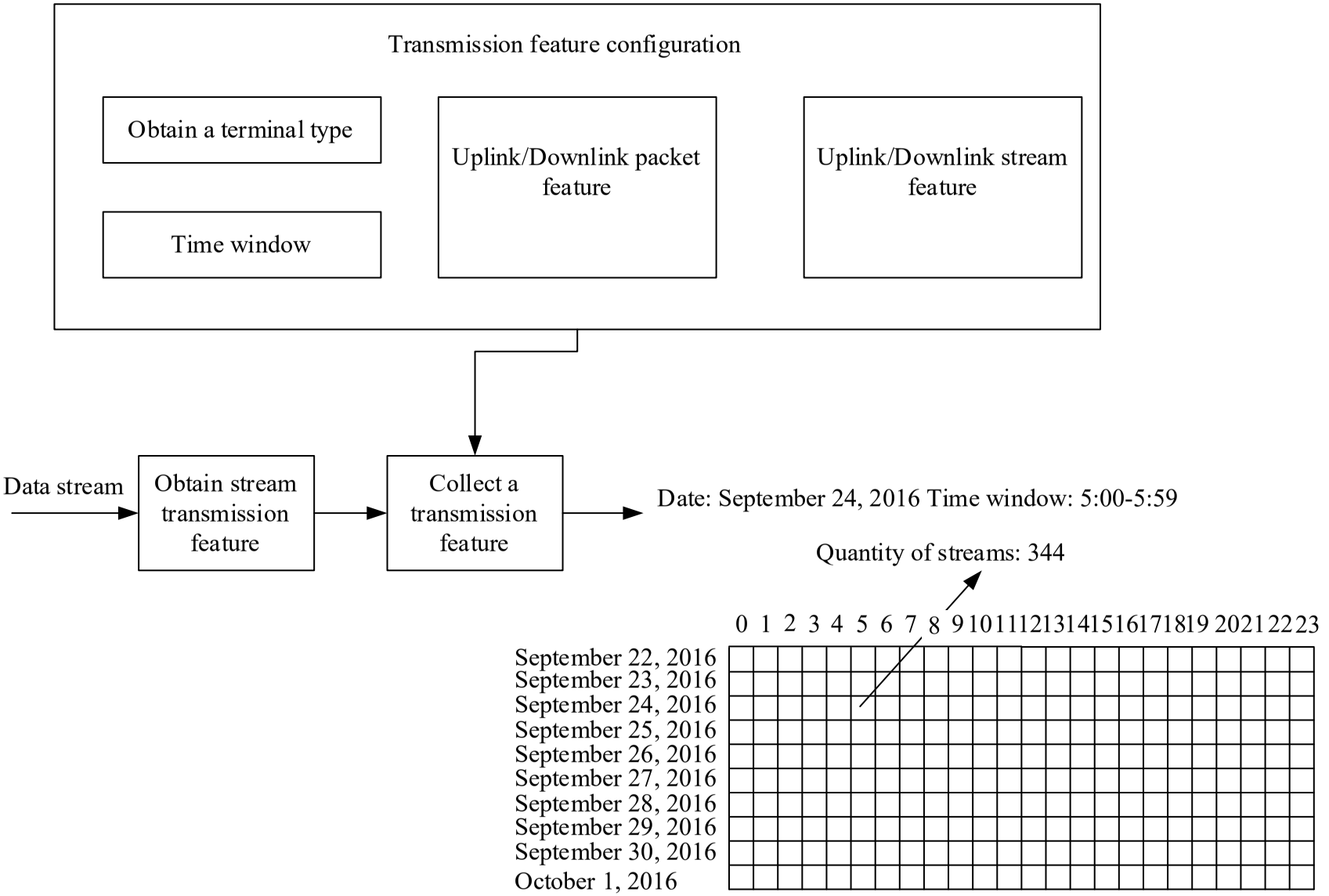
Transmission feature configuration
Obtain a terminal type
Time window
Uplink/Downlink packet feature
Uplink/Downlink stream feature
Data stream
Obtain stream transmission feature
Collect a transmission feature
Date: September 24, 2016 Time window: 5:00-5:59
Quantity of streams: 344
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
September 22, 2016
September 23, 2016
September 24, 2016
September 25, 2016
September 26, 2016
September 27, 2016
September 28, 2016
September 29, 2016
September 30, 2016
October 1, 2016

FIG. 7

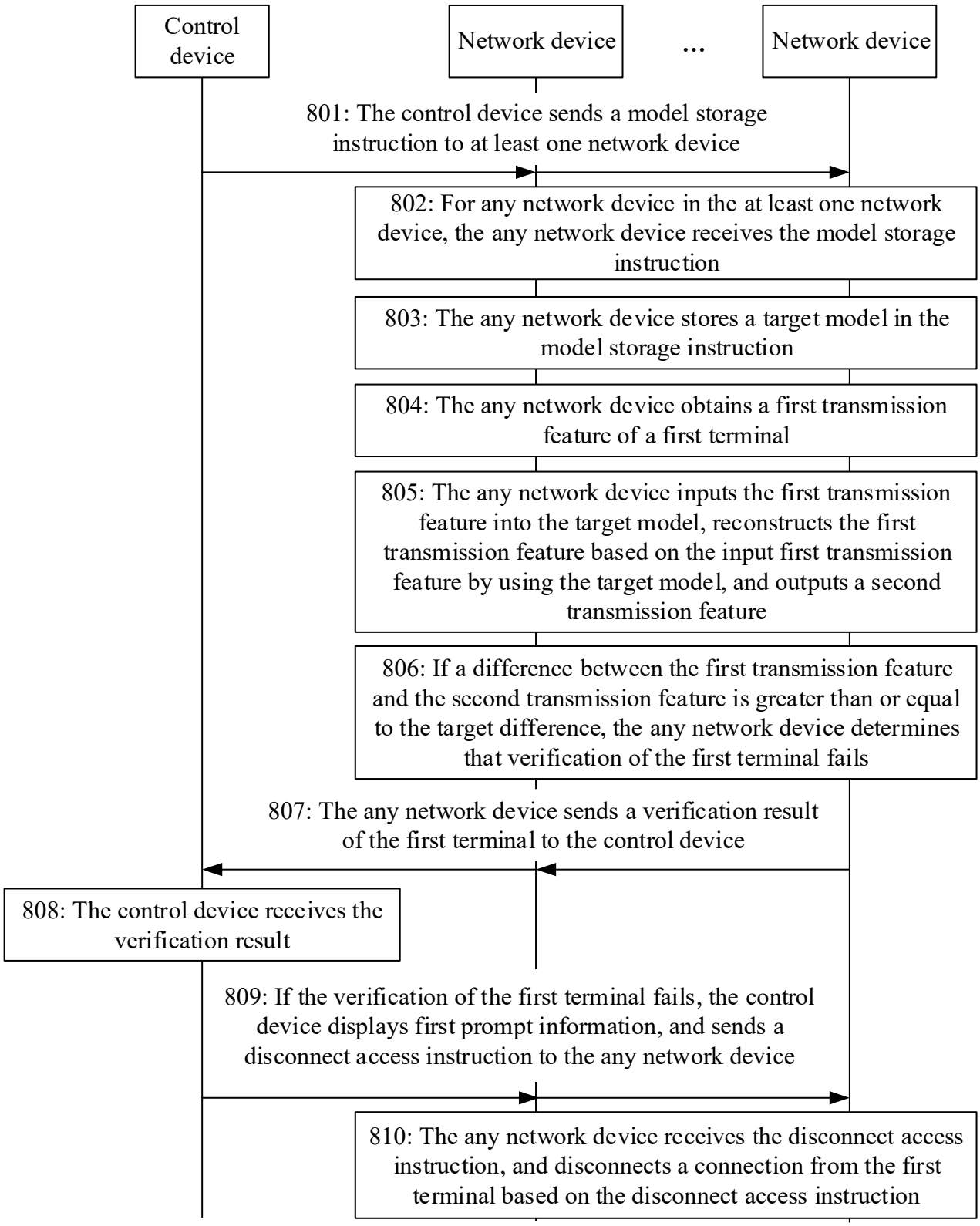
Control device
Network device
...
Network device
801: The control device sends a model storage instruction to at least one network device
802: For any network device in the at least one network device, the any network device receives the model storage instruction
803: The any network device stores a target model in the model storage instruction
804: The any network device obtains a first transmission feature of a first terminal
805: The any network device inputs the first transmission feature into the target model, reconstructs the first transmission feature based on the input first transmission feature by using the target model, and outputs a second transmission feature
806: If a difference between the first transmission feature and the second transmission feature is greater than or equal to the target difference, the any network device determines that verification of the first terminal fails
807: The any network device sends a verification result of the first terminal to the control device
808: The control device receives the verification result
809: If the verification of the first terminal fails, the control device displays first prompt information, and sends a disconnect access instruction to the any network device
810: The any network device receives the disconnect access instruction, and disconnects a connection from the first terminal based on the disconnect access instruction

FIG. 8

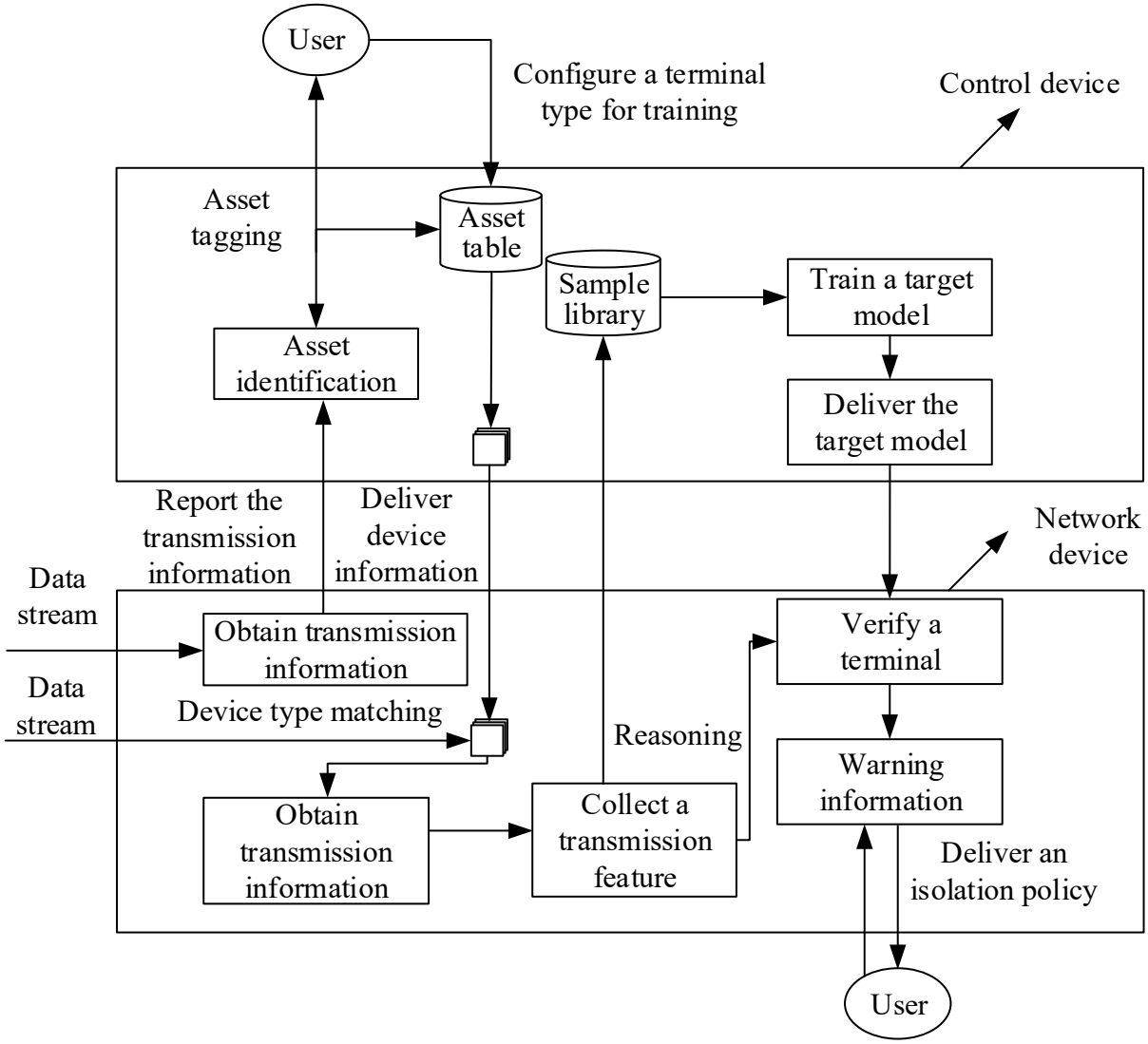
User
Configure a terminal type for training
Control device
Asset tagging
Asset table
Sample library
Train a target model
Asset identification
Deliver the target model
Report the transmission information
Deliver device information
Network device
Data stream
Obtain transmission information
Verify a terminal
Data stream
Device type matching
Reasoning
Warning information
Obtain transmission information
Collect a transmission feature
Deliver an isolation policy
User

FIG. 9

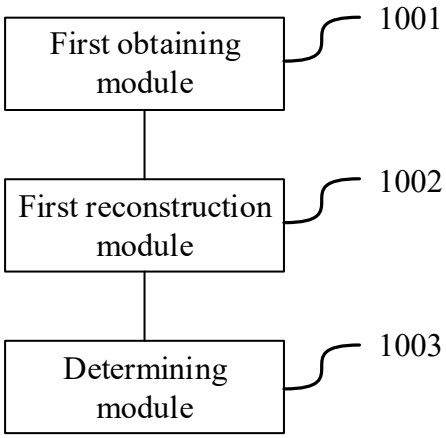
First obtaining module
1001
First reconstruction module
1002
Determining module
1003

FIG. 10

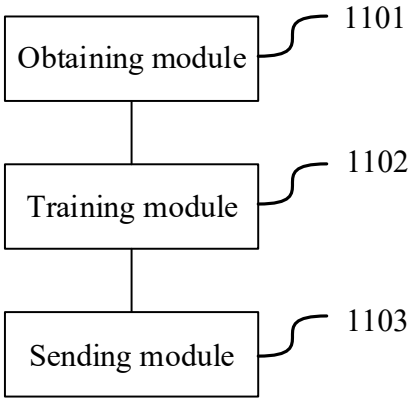
Obtaining module
1101
Training module
1102
Sending module
1103

FIG. 11