CLAIMS

What is claimed is:

1. A relay communication method, comprising:

receiving, by a relay device, first information sent by a access network device, wherein the first information indicates to turn on an amplify-and-forward function on a first time domain resource unit in a first time domain resource set, the first time domain resource set comprises one or more time domain resource units, and the first time domain resource unit is any time domain resource unit in the first time domain resource set; and

performing, by the relay device, relay forwarding based on the first information.

2. The method according to claim 1, wherein the performing, by the relay device, relay forwarding based on the first information comprises:

if the first time domain resource unit is configured for uplink transmission, turning on, by the relay device, an uplink amplify-and-forward function on the first time domain resource unit; or

if the first time domain resource unit is configured for downlink transmission, turning on, by the relay device, a downlink amplify-and-forward function on the first time domain resource unit; or

if the first time domain resource unit comprises at least one first time domain resource subunit and at least one second time domain resource subunit, the first time domain resource subunit is configured for uplink transmission, and the second time domain resource subunit is configured for downlink transmission, turning on, by the relay device, an uplink amplify-and-forward function on the at least one first time domain resource subunit, and turning on a downlink amplify-and-forward function on the at least one second time domain resource subunit.

3. The method according to claim 1 or 2, wherein before the performing, by the relay device, relay forwarding based on the first information, the method further comprises:

receiving, by the relay device, a common TDD configuration; or

receiving, by the relay device, a dedicated TDD configuration.

4. The method according to claim 3, the method further comprises:

determining, based on the common TDD configuration or the dedicated TDD configuration, a time domain resource used for uplink forwarding and a time domain resource used for downlink forwarding in the first time domain resource set.

5. The method according to claim 4, the determining step comprises:

an uplink slot/symbol in the first time domain resource set is a slot/symbol used for uplink forwarding;

a downlink slot/symbol in the first time domain resource set is a slot/symbol used for downlink forwarding;

a flexible slot/symbol in the first time domain resource set is a slot/symbol not used for uplink forwarding and downlink forwarding.

6. The method according to claim 1 or 2, wherein before the performing, by the relay device, relay forwarding based on the first information, the method further comprises:

receiving, by the relay device, second information, wherein the second information indicates at least one of the following information: a start position of uplink transmission in a first periodicity, an end position of uplink transmission in the first periodicity, a start position of downlink transmission in the first periodicity, and an end position of downlink transmission in the first periodicity; and

determining, by the relay device based on the second information, a time domain resource used for uplink forwarding and a time domain resource used for downlink forwarding in the first time domain resource set, wherein the first time domain resource set comprises one or more time domain resources in the first periodicity.

7. The method according to any one of claims 1 to 6, wherein a downlink forwarding timing of the relay device is the same as a downlink reception timing of the relay device.

8. The method according to any one of claims 1 to 7, wherein an uplink forwarding timing of the relay device is the same as an uplink timing of a control link of the relay device.

9. A relay communication method, comprising:

determining, by a access network device, first information, wherein the first information indicates to turn on an amplify-and-forward function on a first time domain resource unit in a first time domain resource set, the first time domain resource set comprises one or more time domain resource units, and the first time domain resource unit is any time domain resource unit in the first time domain resource set; and

sending, by the access network device, the first information to the relay device.

10. The method according to claim 9, wherein the method further comprises:

sending, by the access network device, a common TDD configuration; or

receiving, by the access network device, a dedicated TDD configuration.

11. The method according to claim 9, wherein the method further comprises:

sending, by the access network device, second information to the relay device, wherein the second information indicates at least one of the following information: a start position of uplink transmission in a first periodicity, an end position of uplink transmission in the first periodicity, a start position of downlink transmission in the first periodicity, and an end position of downlink transmission in the first periodicity, wherein the first time domain resource set comprises one or more time domain resources in the first periodicity.

12. A relay communication apparatus, comprising a transceiver unit, a processing unit, and an amplification unit, wherein the amplification unit is configured to amplify and forward a signal;

the transceiver unit is configured to receive first information sent by a access network device, wherein the first information indicates to turn on an amplify-and-forward function on a first time domain resource unit in a first time domain resource set, the first time domain resource set comprises one or more time domain resource units, and the first time domain resource unit is any time domain resource unit in the first time domain resource set; and

the processing unit is configured to control, based on the first information, whether the amplification unit turns on the amplify-and-forward function on the first time domain resource unit in the first time domain resource set.

13. The apparatus according to claim 12, wherein the processing unit is specifically configured to:

if the first time domain resource unit is configured for uplink transmission, control the amplification unit to turn on an uplink amplify-and-forward function on the first time domain resource unit; or

if the first time domain resource unit is configured for downlink transmission, control the amplification unit to turn on a downlink amplify-and-forward function on the first time domain resource unit; or

if the first time domain resource unit comprises at least one first time domain resource subunit and at least one second time domain resource subunit, the first time domain resource subunit is configured for uplink transmission, and the second time domain resource subunit is configured for downlink transmission, control the amplification unit to turn on an uplink amplify-and-forward function on the at least one first time domain resource subunit, and turn on a downlink amplify-

and-forward function on the at least one second time domain resource subunit.

14. The method according to claim 12 or 13, wherein the transceiver unit is specifically configured to:

receive a common TDD configuration; or

receive a dedicated TDD configuration.

15. The apparatus according to claim 14, wherein the processing unit is specifically configured to:

determine, based on the common TDD configuration or the dedicated TDD configuration, a time domain resource used for uplink forwarding and a time domain resource used for downlink forwarding in the first time domain resource set.

16. The apparatus according to claim 15, wherein:

an uplink slot/symbol in the first time domain resource set is a slot/symbol used for uplink forwarding;

a downlink slot/symbol in the first time domain resource set is a slot/symbol used for downlink forwarding;

a flexible slot/symbol in the first time domain resource set is a slot/symbol not used for uplink forwarding and downlink forwarding.

17. The apparatus according to claim 12 or 13, wherein the transceiver unit is further configured to:

before the processing unit controls, based on the first information, whether the amplification unit turns on the amplify-and-forward function on the first time domain resource unit in the first time domain resource set, receive second information, wherein the second information indicates at least one of the following information: a start position of uplink transmission in a first periodicity, an end position of uplink transmission in the first periodicity, a start position of downlink transmission in the first periodicity, and an end position of downlink transmission in the first periodicity; and

the processing unit is further configured to:

determine, based on the second information, a time domain resource used for uplink forwarding and a time domain resource used for downlink forwarding in the first time domain resource set, wherein the first time domain resource set comprises one or more time domain resources in the first periodicity.

18. The apparatus according to any one of claims 12 to 17, wherein a downlink forwarding timing of the relay device is the same as a downlink reception timing of the relay device.

19. The apparatus according to any one of claims 12 to 18, wherein an uplink forwarding timing of the relay device is the same as an uplink timing of a control link of the relay device.

20. A relay communication apparatus, comprising:

a processing unit, configured to determine first information, wherein the first information indicates to turn on an amplify-and-forward function on a first time domain resource unit in a first time domain resource set, the first time domain resource set comprises one or more time domain resource units, and the first time domain resource unit is any time domain resource unit in the first time domain resource set; and

a transceiver unit, configured to send the first information to the relay device.

21. The apparatus according to claim 20, wherein the transceiver unit is further configured to:

send a common TDD configuration; or

receive a dedicated TDD configuration.

22. The apparatus according to claim 20, wherein the transceiver unit is further configured to:

send second information to the relay device, wherein the second information indicates at least one of the following information: a start position of uplink transmission in a first periodicity, an end position of uplink transmission in the first periodicity, a start position of downlink transmission in the first periodicity, and an end position of downlink transmission in the first periodicity, wherein the first time domain resource set comprises one or more time domain resources in the first periodicity.

23. A communication device, wherein the communication device comprises a transceiver, a processor, an amplifier, and a memory; the memory stores program instructions; and when the program instructions are executed, the communication device is enabled to perform the method according to any one of claims 1 to 8.

24. A communication device, wherein the communication device comprises a transceiver, a processor, and a memory; the memory stores program instructions; and when the program instructions are executed, the communication device is enabled to perform the method according to any one of claims 9 to 11.

25. A chip, wherein the chip is coupled to a memory in an electronic device, so that when running, the chip invokes program instructions stored in the memory, to implement the method

according to any one of claims 1 to 8, or implement the method according to any one of claims 9 to 11.

26. A computer-readable storage medium, wherein the computer-readable storage medium comprises program instructions, and when the program instructions are run on a device, the device is enabled to perform the method according to any one of claims 1 to 11.

27. A communication system, comprising the relay communication apparatus according to any one of claims 12 to 19 and the relay communication apparatus according to any one of claims 20 to 22.