CLAIMS

What is claimed is:

1. A resource multiplexing method, wherein the method comprises:

receiving, by a first node, first configuration information sent by a second node, wherein the first configuration information comprises first guard interval information associated with a first timing mode of a mobile termination MT, the first guard interval information comprises a first symbol quantity and a second symbol quantity, the first symbol quantity indicates a quantity of guard symbols for switching from a distributed unit DU resource to an MT resource and the second symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource to enable the first node to switch between the DU resource and the MT resource, the first node is an integrated access and backhaul (IAB) node and the second node is a parent node or a donor node of the first node;

receiving, by the first node, second configuration information sent by the second node, wherein the second configuration information comprises second guard interval information associated with a second timing mode of the MT, the second guard interval information comprises a third symbol quantity and a fourth symbol quantity, the third symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the fourth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

receiving, by the first node, a timing difference that is between the first timing mode and the second timing mode and that is configured by the second node.

2. The method according to claim 1, wherein the method further comprises:

when a timing mode of the first node is the first timing mode, determining a time domain position of the MT resource based on a time domain position of the DU resource and the first guard interval information; or

when a timing mode of the first node is the second timing mode, determining a time domain position of the MT resource based on a time domain position of the DU resource and the second guard interval information.

3. The method according to claim 1 or 2, wherein the method further comprises:

reporting, by the first node to the second node, third guard interval information associated with the first timing mode of the MT, wherein the third guard interval information comprises a fifth symbol quantity and a sixth symbol quantity, the fifth symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the sixth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

reporting, by the first node to the second node, fourth guard interval information associated with the second timing mode of the MT, wherein the fourth guard interval information comprises a seventh symbol quantity and an eighth symbol quantity, the seventh symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the eighth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource.

4. The method according to any one of claims 1 to 3, wherein when a timing mode of the first node is the second timing mode, and the second timing mode is timing mode 6, the MT uplink sending of the first node is aligned with DU downlink sending of the first node in time domain.

5. The method according to any one of claims 1 to 4, wherein when a timing mode of the first node is the second timing mode, and the second timing mode is timing mode 6, the following switching scenarios are included: MT uplink transmission to DU downlink transmission (MT UL Tx to DU DL Tx), MT uplink transmission to DU uplink receiving (MT UL Tx to DU UL Rx), DU downlink transmission to MT uplink transmission (DU DL Tx to MT UL Tx) and DU uplink transmission to MT uplink transmission (DU UL Rx to MT UL Tx).

6. The method according to any one of claims 1 to 5, wherein

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 6;

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 7; or

the first timing mode is a timing mode 6, and the second timing mode is a timing mode 7.

7. The method according to any one of claims 1 to 6, wherein the method further comprises:

when the second node configures the first node to use a third timing mode, reporting, by the first node to the second node, fifth guard interval information associated with the third timing mode.

8. A resource multiplexing method, wherein the method comprises:

sending, by a second node, first configuration information to a first node, wherein the first configuration information comprises first guard interval information associated with a first timing mode of a mobile termination MT, the first guard interval information comprises a first symbol quantity and a second symbol quantity, the first symbol quantity indicates a quantity of guard symbols for switching from a distributed unit DU resource to an MT resource and the second symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource to enable the first node to switch between the DU resource and the MT resource, the first node is an integrated access and backhaul (IAB) node and the second node is a parent node or a donor node of the first node;

sending, by the second node, second configuration information to the first node, wherein the second configuration information comprises second guard interval information associated with a second timing mode of the MT, the second guard interval information comprises a third symbol

quantity and a fourth symbol quantity, the third symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the fourth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

sending, by the second node, a configured timing difference between the first timing mode and the second timing mode to the first node.

9. The method according to claim 8, wherein the method further comprises:

receiving, by the second node, third guard interval information that is associated with the first timing mode of the MT and that is reported by the first node, wherein the third guard interval information comprises a fifth symbol quantity and a sixth symbol quantity, the fifth symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the sixth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

receiving, by the second node, fourth guard interval information that is associated with the second timing mode of the MT and that is reported by the first node, wherein the fourth guard interval information comprises a seventh symbol quantity and an eighth symbol quantity, the seventh symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the eighth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource.

10. The method according to claim 7 or 8, wherein when a timing mode of the first node is the second timing mode, and the second timing mode is timing mode 6, the MT uplink sending of the first node is aligned with DU downlink sending of the first node in time domain.

11. The method according to any one of claims 7 to 10, wherein when a timing mode of the first node is the second timing mode, and the second timing mode is timing mode 6, the following switching scenarios are included: MT uplink transmission to DU downlink transmission (MT UL Tx to DU DL Tx), MT uplink transmission to DU uplink receiving (MT UL Tx to DU UL Rx), DU downlink transmission to MT uplink transmission (DU DL Tx to MT UL Tx) and DU uplink transmission to MT uplink transmission (DU UL Rx to MT UL Tx).

12. The method according to any one of claims 7 to 11, wherein

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 6; or

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 7; or

the first timing mode is a timing mode 6, and the second timing mode is a timing mode 7.

13. The method according to any one of claims 7 to 12, wherein the method further comprises:

when the second node configures the first node to use a third timing mode, receiving, by the second node, fifth guard interval information that is associated with the third timing mode and that is

reported by the first node.

14. A resource multiplexing apparatus, wherein the apparatus comprises:

a transceiver unit, configured to: receive first configuration information sent by a second node, wherein the first configuration information comprises first guard interval information associated with a first timing mode of a mobile termination MT, the first guard interval information comprises a first symbol quantity and a second symbol quantity, the first symbol quantity indicates a quantity of guard symbols for switching from a distributed unit DU resource to an MT resource and the second symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource to enable the first node to switch between the DU resource and the MT resource, the first node is an integrated access and backhaul (IAB) node and the second node is a parent node or a donor node of the resource multiplexing apparatus; and

receive second configuration information sent by the second node, wherein the second configuration information comprises second guard interval information associated with a second timing mode of the MT, the second guard interval information comprises a third symbol quantity and a fourth symbol quantity, the third symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the fourth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource,

wherein when a timing mode of the apparatus is the second timing mode, and the second timing mode is timing mode 6, the MT uplink sending of the first node is aligned with DU downlink sending of the apparatus in time domain,

wherein the transceiver unit is further configured to receive a timing difference that is between the first timing mode and the second timing mode and that is configured by the second node.

15. The apparatus according to claim 14, wherein the apparatus further comprises:

a processing unit, configured to: when a timing mode of the first node is the first timing mode, determine a time domain position of the MT resource based on a time domain position of the DU resource and the first guard interval information; or

when a timing mode of the first node is the second timing mode, determine a time domain position of the MT resource based on a time domain position of the DU resource and the second guard interval information.

16. The apparatus according to claim 14 or 15, wherein

the transceiver unit is further configured to report, to the second node, third guard interval information associated with the first timing mode of the MT, wherein the third guard interval information comprises a fifth symbol quantity and a sixth symbol quantity, the fifth symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and

the sixth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

the transceiver unit is further configured to report, to the second node, fourth guard interval information associated with the second timing mode of the MT, wherein the fourth guard interval information comprises a seventh symbol quantity and an eighth symbol quantity, the seventh symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the eighth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource.

17. The apparatus according to any one of claims 14 to 16, wherein when a timing mode of the apparatus is the second timing mode, and the second timing mode is timing mode 6, the following switching scenarios are included: MT uplink transmission to DU downlink transmission (MT UL Tx to DU DL Tx), MT uplink transmission to DU uplink receiving (MT UL Tx to DU UL Rx), DU downlink transmission to MT uplink transmission (DU DL Tx to MT UL Tx) and DU uplink transmission to MT uplink transmission (DU UL Rx to MT UL Tx).

18. The apparatus according to any one of claims 16 to 17, wherein

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 6; or

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 7; or

the first timing mode is a timing mode 6, and the second timing mode is a timing mode 7.

19. The apparatus according to any one of claims 16 to 18, wherein

the transceiver unit is further configured to: when the second node configures the apparatus to use a third timing mode, report, to the second node, fifth guard interval information associated with the third timing mode.

20. The apparatus according to any one of claims 16 to 19, wherein

the first symbol quantity comprises a quantity of symbols by which a DU downlink symbol and an MT downlink symbol are separated, a quantity of symbols by which the DU downlink symbol and an MT uplink symbol are separated, a quantity of symbols by which a DU uplink symbol and the MT uplink symbol are separated, and a quantity of symbols by which the DU uplink symbol and the MT downlink symbol are separated; and

the second symbol quantity comprises a quantity of symbols by which the MT downlink symbol and the DU downlink symbol are separated, a quantity of symbols by which the MT downlink symbol and the DU uplink symbol are separated, a quantity of symbols by which the MT uplink symbol and the DU uplink symbol are separated, and a quantity of symbols by which the MT uplink symbol and the DU downlink symbol are separated.

21. A resource multiplexing apparatus, wherein the apparatus comprises:

a transceiver unit, configured to: send first configuration information to a first node, wherein the first configuration information comprises first guard interval information associated with a first timing mode of a mobile termination MT, the first guard interval information comprises a first symbol quantity and a second symbol quantity, the first symbol quantity indicates a quantity of guard symbols for switching from a distributed unit DU resource to an MT resource and the second symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource to enable the first node to switch between the DU resource and the MT resource, the first node is an integrated access and backhaul (IAB) node and the resource multiplexing apparatus is a parent node or a donor node of the first node; and

send second configuration information to the first node, wherein the second configuration information comprises second guard interval information associated with a second timing mode of the MT, the second guard interval information comprises a third symbol quantity and a fourth symbol quantity, the third symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the fourth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource,

wherein the transceiver unit is further configured to send a configured timing difference between the first timing mode and the second timing mode to the first node.

22. The apparatus according to claim 21, wherein

the transceiver unit is further configured to receive third guard interval information that is associated with the first timing mode of the MT and that is reported by the first node, wherein the third guard interval information comprises a fifth symbol quantity and a sixth symbol quantity, the fifth symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the sixth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource; and

the transceiver unit is further configured to receive fourth guard interval information that is associated with the second timing mode of the MT and that is reported by the first node, wherein the fourth guard interval information comprises a seventh symbol quantity and an eighth symbol quantity, the seventh symbol quantity indicates a quantity of guard symbols for switching from the DU resource to the MT resource, and the eighth symbol quantity indicates a quantity of guard symbols for switching from the MT resource to the DU resource.

23. The apparatus according to claim 21 or 22, wherein when a timing mode of the first node is the second timing mode, and the second timing mode is timing mode 6, the MT uplink sending of the first node is aligned with DU downlink sending of the first node in time domain.

24. The apparatus according to claim 21 or 22, wherein when a timing mode of the first node is

the second timing mode, and the second timing mode is timing mode 6, the following switching scenarios are included: MT uplink transmission to DU downlink transmission (MT UL Tx to DU DL Tx), MT uplink transmission to DU uplink receiving (MT UL Tx to DU UL Rx), DU downlink transmission to MT uplink transmission (DU DL Tx to MT UL Tx) and DU uplink transmission to MT uplink transmission (DU UL Rx to MT UL Tx).

25. The apparatus according to any one of claims 21 to 24, wherein

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 6; or

the first timing mode is a timing mode 1, and the second timing mode is a timing mode 7; or

the first timing mode is a timing mode 6, and the second timing mode is a timing mode 7.

26. The apparatus according to any one of claims 21 to 25, wherein

the transceiver unit is further configured to: when the apparatus configures the first node to use a third timing mode, receive fifth guard interval information that is associated with the third timing mode and that is reported by the first node.

27. A resource multiplexing apparatus, comprising a processor, wherein the processor is coupled to a memory, and is configured to: read instructions in the memory, and implement the method according to any one of claims 1 to 8 or any one of claims 9 to 15 according to the instructions.

28. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program; and when the program is executed by a processor, the method according to any one of claims 1 to 7 or any one of claims 8 to 13 is implemented.