CLAIMS

What is claimed is:

1. A link state switching method, executed by a first relay device, comprising:

switching between a first link state and a second link state based on a first guard period, wherein

the first link state and the second link state are link states of an integrated access backhaul IAB node in different transmission modes;

wherein the first guard period is defined by first signaling, and the first signaling comprises:

signaling with which the IAB node reports first information to a centralized unit CU or an IAB parent node;

the first information comprises the first guard period or information associated with the first guard period.

2. The method according to claim 1, wherein the first link state is a link state in a first transmission mode, and the first transmission mode satisfies:

mobile termination transmission MT TX and distributed unit transmission DU TX are aligned in time domain units or MT TX and DU TX work synchronously; and

DU TX is aligned with TX timing of an IAB parent node in time domain units or DU TX is aligned with DU TX timing of the IAB parent node in time domain units, wherein the IAB parent node is a parent node of the IAB node.

3. The method according to claim 1, wherein the second link state is a link state in a second transmission mode, and the second transmission mode satisfies:

DU TX is aligned with TX timing of an IAB parent node in time domain units or DU TX is aligned with DU TX timing of the IAB parent node in time domain units, wherein the IAB parent node is a parent node of the IAB node.

4. The method according to claim 1, wherein different guard periods of the first guard period are for: switching between different first link states and the second link state, and/or switching between the first link state and different second link states.

5. The method according to claim 4, wherein the first guard period comprises at least one of the following:

a guard period for switching from a first link state of MT TX and/or DU TX to a second link state of MT TX;

a guard period for switching from a first link state of MT TX and/or DU TX to a second link state of mobile termination reception MT RX;

a guard period for switching from a second link state of MT TX to a first link state of MT TX and/or DU TX;

a guard period for switching from a second link state of MT RX to a first link state of MT TX and/or DU TX;

a guard period for switching from a first link state of MT TX and/or DU TX to a second link state of DU TX;

a guard period for switching from a first link state of MT TX and/or DU TX to a second link state of distributed unit reception DU RX;

a guard period for switching from a second link state of DU TX to a first link state of MT TX and/or DU TX; and

a guard period for switching from a second link state of DU RX to a first link state of MT TX and/or DU TX.

6. The method according to claim 1, wherein the first signaling comprises at least one of RRC signaling, MAC CE signaling, DCI signaling, BAP control PDU signaling, PDCCH, or

7. The method according to claim 1, wherein the first guard period is associated with a second guard period, the second guard period is a guard period set for switching between the second link state and a third link state, and the third link state and the second link state are link states under a same transmission mode.

8. The method according to claim 1, wherein an object to which the first guard period applies is defined by a protocol or configured by a network device, a CU, or an IAB parent node.

9. The method according to claim 8, wherein the object to which the first guard period applies comprises at least one of the following:

MT in the first link state;

MT in the second link state;

DU in the first link state; and

DU in the second link state.

10. The method according to claim 9, wherein in a case that the first guard period is for switching between a first link state of MT TX and/or DU TX and a second link state of MT TX or MT RX, the first guard period applies to MT or DU in the first link state.

11. The method according to claim 9, wherein the first guard period applies to a start time period or an end time period of a link state of the applied-to object.

12. The method according to claim 1, wherein in a case that the first relay device is the IAB node, the method further comprises:

transmitting second signaling to an IAB parent node or a CU, wherein

the second signaling is used to indicate whether the IAB node supports a first transmission mode and a second transmission mode, or indicate configurations of the first transmission mode and the second transmission mode,

13. The method according to claim 1, wherein in a case that the first relay device is an IAB node, the IAB node reports a DU RX offset and/or a time at which a DU RX offset occurs.

14. The method according to claim 1, wherein an IAB parent node is configured with a first offset associated with the first guard period.

15. The method according to claim 1, wherein the first signaling is configured with a first indication that is used to indicate whether data transmission is configured with the first guard period.

16. The method according to claim 1, wherein in a case that the first relay device is an IAB parent node or a CU, the method further comprises:

transmitting third signaling to a terminal, wherein

the third signaling is used to configure a third guard period for MT TX and/or MT RX of the IAB node or uplink transmission and/or downlink transmission of the terminal.

17. A relay device, comprising a memory, a processor, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the link state switching method according to any one of claims 1 to 16 are implemented.

18. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed by a processor, the steps of the link state switching method according to any one of claims 1 to 16 are implemented.