

What is claimed is:

1. A method for controlling communication states, comprising:

receiving, by a terminal, a physical downlink control channel (PDCCH) from a network device in a first time slot, wherein the PDCCH carries first indication information indicative of a first communication state; and

entering, by the terminal, the first communication state in a second time slot according to the first indication information, wherein the second time slot is after the first time slot;

wherein the first communication state is a first cross-slot scheduling state;

wherein entering, by the terminal, the first communication state in the second time slot according to the first indication information comprises:

entering, by the terminal, the first cross-slot scheduling state in the second time slot according to the first indication information;

wherein entering, by the terminal, the first cross-slot scheduling state in the second time slot according to the first indication information comprises:

entering, by the terminal, the first cross-slot scheduling state in the second time slot when the first cross-slot scheduling state is different from a second cross-slot scheduling state that the terminal is currently in;

wherein an offset of x time slots exists between the second time slot and the first time slot, wherein x is a positive integer, x is the maximum between a and S_c , a is a constant, and S_c is a slot offset corresponding to the second cross-slot scheduling state that the terminal is currently in, wherein the slot offset corresponding to the second cross-slot scheduling state is an offset between a time slot where a data channel scheduled by the PDCCH locates and a time slot where the PDCCH locates.

2. The method of claim 1, wherein the first indication information comprises N bits, wherein N is a positive integer, different values of the first indication information are indicative of different first cross-slot scheduling states, and a correspondence between the first cross-slot scheduling states and values of the N bits is configured by high-layer signaling.

3. The method of claim 2, wherein each first cross-slot scheduling state corresponds to a set of slot offsets, wherein the set of slot offsets comprise a first slot offset for the PDSCH and a second slot offset for a physical uplink shared channel (PUSCH).

4. The method of claim 3, wherein each first cross-slot scheduling state corresponding to a set of slot offsets comprises the following:

the first cross-slot scheduling state is indicated by N bits, and any values of the N bits indicative of the first cross-slot scheduling state correspond to a combination of the first slot offset and the second slot offset.

5. The method of any of claims 1 to 4, further comprising:

transmitting, by the terminal, no first PUSCH to the network device, when the terminal determines that time-domain scheduling information of the first PUSCH does not match the second cross-slot scheduling state that the terminal is currently in, wherein the first PUSCH is a PUSCH scheduled by the PDCCH that is received by the terminal in the first

time slot.

6. The method of claim 5, further comprising:

determining, by the terminal, that the time-domain scheduling information of the first PUSCH does not match the second cross-slot scheduling state that the terminal is currently in, when a slot offset corresponding to the time-domain scheduling information of the first PUSCH is smaller than a slot offset corresponding to the second cross-slot scheduling state that the terminal is currently in.

7. The method of any of claims 1-6, further comprising:

receiving, by the terminal, a dedicated control channel (DCCH) from the network device, wherein the DCCH carries second indication information indicative of a default cross-slot scheduling state; and

according to the second indication information, entering, by the terminal, the default cross-slot scheduling state at the beginning of a discontinuous reception (DRX) ON state, and entering, by the terminal, the default cross-slot scheduling state at the end of the DRX ON state.

8. A method for controlling communication states, comprising:

transmitting, by a network device, a physical downlink control channel (PDCCH) to a terminal, wherein the PDCCH carries first indication information indicative of a first communication state, wherein the first communication state is a first cross-slot scheduling state, the first indication information is used for directing the terminal to enter the first communication state in a second time slot when the first indication information is received by the terminal in a first time slot and when the first communication state is different from a second cross-slot scheduling state that the terminal is currently in, wherein the second time slot is after the first time slot;

wherein an offset of x time slots exists between the second time slot and the first time slot, wherein x is a positive integer, x is the maximum between a and S_c , a is a constant, and S_c is a slot offset corresponding to the second cross-slot scheduling state that the terminal is currently in, wherein the slot offset corresponding to the second cross-slot scheduling state is an offset between a time slot where a data channel scheduled by the PDCCH locates and a time slot where the PDCCH locates.

9. The method of claim 8, wherein the first indication information comprises N bits, wherein N is a positive integer, different values of the first indication information are indicative of different first cross-slot scheduling states, and a correspondence between the first cross-slot scheduling states and the values of the N bits is configured by high-layer signaling.

10. The method of claim 9, wherein each of the first cross-slot scheduling states corresponds to a set of slot offsets, wherein the set of slot offsets comprise a first slot offset for a physical downlink shared channel (PDSCH) and a second slot offset for a physical uplink shared channel (PUSCH).

11. The method of claim 10, wherein each first cross-slot scheduling state corresponding to a set of slot offsets comprises the following:

the first cross-slot scheduling state is indicated by N bits, and any values of the N bits indicative of the first cross-slot scheduling state corresponds to a combination of the first slot offset and the second slot offset.

12. A device for controlling communication states, the device being applied to a terminal and comprising:

a receiving unit configured to receive a physical downlink control channel (PDCCH) from a network device in a first time slot, wherein the PDCCH carries first indication information indicative of a first communication state; and

a controlling unit configured to enter the first communication state in a second time slot according to the first indication information, wherein the second time slot is after the first time slot;

wherein the first communication state is a first cross-slot scheduling state;

wherein the controlling unit configured to enter the first communication state in the second time slot according to the first indication information is configured to enter the first cross-slot scheduling state in the second time slot according to the first indication information;

wherein the controlling unit configured to enter the first cross-slot scheduling state in the second time slot according to the first indication information is configured to enter the first cross-slot scheduling state in the second time slot when the first cross-slot scheduling state is different from a second cross-slot scheduling state that the terminal is currently in;

wherein an offset of x time slots exists between the second time slot and the first time slot, wherein x is a positive integer, x is the maximum between a and S_c , a is a constant, and S_c is a slot offset corresponding to the second cross-slot scheduling state that the terminal is currently in, wherein the slot offset corresponding to the second cross-slot scheduling state is an offset between a time slot where a data channel scheduled by the PDCCH locates and a time slot where the PDCCH locates.

13. A device for controlling communication states, the device being applied to a network device and comprising:

a transmitting unit configured to transmit a physical downlink control channel (PDCCH) to a terminal, wherein the PDCCH carries first indication information indicative of a first communication state, wherein the first communication state is a first cross-slot scheduling state, and the first indication information is used for directing the terminal to enter the first communication state in a second time slot when the first indication information is received by the terminal in a first time slot and when the first communication state is different from a second cross-slot scheduling state that the terminal is currently in, wherein the second time slot is after the first time slot;

wherein an offset of x time slots exists between the second time slot and the first time slot, wherein x is a positive integer, x is the maximum between a and S_c , a is a constant, and S_c is a slot offset corresponding to the second cross-slot scheduling state that the terminal is currently in, wherein the slot offset corresponding to the second cross-slot scheduling state is an offset between a time slot where a data channel scheduled by the PDCCH locates and a time slot where the PDCCH locates.

14. A terminal comprising:

a memory configured to store at least one computer program; and

a processor configured to invoke and run the at least one computer program stored in the memory to perform the method of any of claims 1 to 7.

15. A network device comprising:

a memory configured to store at least one computer program; and

a processor configured to invoke and run the at least one computer program stored in the memory to perform the method of any of claims 8 to 11.

16. A computer-readable storage medium configured to store at least one computer program, the at least one computer program enabling a computer to perform the method of any of claims 1 to 7.

17. A computer-readable storage medium configured to store at least one computer program, the at least one computer program enabling a computer to perform the method of any of claims 8 to 11.