

CLAIMS

1. A method for uplink transmission in an unlicensed band, applied to a terminal, comprising:
receiving first downlink control information DCI used to indicate the scheduled resource;
sensing a scheduled resource to obtain a corresponding sensing result; and
transmitting a transport block on the scheduled resource based on the sensing result;
wherein the transmitting a transport block on the scheduled resource based on the sensing result comprises:

separately transmitting a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time, wherein the update time is associated with the sensing result.

~~2. The method for uplink transmission in an unlicensed band according to claim 1, wherein before the step of sensing a scheduled resource to obtain a corresponding sensing result, the method further comprises:~~

~~receiving first downlink control information DCI used to indicate the scheduled resource.~~

32. The method for uplink transmission in an unlicensed band according to claim 21, wherein the transmitting a transport block on the scheduled resource based on the sensing result comprises:

receiving second downlink control information DCI from a network device, wherein the second DCI carries an updated uplink scheduling parameter; and

transmitting the transport block on the scheduled resource based on the updated uplink scheduling parameter in the second DCI.

43. The method for uplink transmission in an unlicensed band according to claim 32, wherein the second DCI is triggered by the network device based on a received demodulation reference signal DMRS in the scheduled resource; or

the second DCI is triggered by the network device based on received first uplink control information UCI in the scheduled resource, wherein the first UCI carries the sensing result.

54. The method for uplink transmission in an unlicensed band according to claim 21, wherein the first DCI comprises at least one of modulation and coding scheme MCS indication information, time domain resource allocation TDRA indication information, frequency domain resource allocation FDRA indication information, a transport block scaling factor, or the number of consecutively scheduled slots.

~~6. The method for uplink transmission in an unlicensed band according to claim 5, wherein the transmitting a transport block on the scheduled resource based on the sensing result comprises:~~

~~separately transmitting a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time, wherein the update time is associated with the sensing result.~~

75. The method for uplink transmission in an unlicensed band according to claim 61, wherein the update time is carried in the first DCI, or the update time is determined based on a terminal capability.

86. The method for uplink transmission in an unlicensed band according to claim 61, wherein in a case that the first DCI does not comprise the transport block scaling factor, the first transport block is determined based on the MCS indication information, the TDRA indication information, and the FDRA indication information; or

in a case that the first DCI comprises the transport block scaling factor, the first transport block is determined based on the MCS indication information, the TDRA indication information, the FDRA indication information, and the transport block scaling factor; ~~or~~

7. The method for uplink transmission in an unlicensed band according to claim 1, wherein the second transport block is determined based on the MCS indication information, the TDRA indication information, the FDRA indication information, and the sensing result.

98. The method for uplink transmission in an unlicensed band according to claim 61, wherein the step of separately transmitting a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time comprises:

in a case that the sensing result indicates that sensing for at least part of the scheduled resource succeeds, transmitting the first transport block in the first $(n+i-1)$ slots in the scheduled resource; and

transmitting the second transport block in the $(n+i)^{\text{th}}$ to N^{th} slots in the scheduled resource; wherein

n is the update time, i is the first slot in which sensing succeeds, N is the number of slots comprised in the scheduled resource, and n , i , and N are all integers.

109. The method for uplink transmission in an unlicensed band according to claim 1, wherein the transport block carries second UCI, and the second UCI comprises at least one of transmission resource indication information, indication information for indicating whether to perform puncturing, a transport block scaling factor, or indication information for indicating whether a transport block is to be adjusted in the next slot.

110. The method for uplink transmission in an unlicensed band according to claim 108, wherein in a case that the second UCI comprises the indication information for indicating whether to perform puncturing and that the indication information indicates that no puncturing is to be performed, the transport block is associated with the sensing result.

1211. The method for uplink transmission in an unlicensed band according to claim 1, wherein the transmitting a transport block on the scheduled resource based on the sensing result further comprises:

in a case that the sensing result indicates that sensing for at least part of the scheduled resource fails, performing slot aggregation for the scheduled resource; and
transmitting a slot-aggregated transport block.

1312. The method for uplink transmission in an unlicensed band according to claim 1211, wherein the transport block carries third UCI, and the third UCI comprises a slot aggregation parameter used for slot aggregation; or,

13. The method for uplink transmission in an unlicensed band according to claim 11, wherein a slot aggregation parameter used for slot aggregation is predefined.

14. The method for uplink transmission in an unlicensed band according to claim 1, wherein the transmitting a transport block on the scheduled resource based on the sensing result further comprises:

in a case that the sensing result indicates that sensing for at least part of the scheduled resource fails, performing initial transmission of the transport block in a first part of the scheduled resource; and

performing retransmission of the transport block in a second part of the scheduled resource.

15. The method for uplink transmission in an unlicensed band according to claim 14, wherein the transport block carries fourth UCI, and the fourth UCI comprises at least one of hybrid automatic repeat request HARQ identification information or redundancy version identification information.

16. A terminal, comprising:

a first receiving module, configured to receive first downlink control information DCI used to indicate the scheduled resource;

a sensing module, configured to sense a scheduled resource to obtain a corresponding sensing result; and

a first transmitting module, configured to transmit a transport block on the scheduled resource based on the sensing result;

wherein the first transmitting module further comprises:

a second transmitting submodule, configured to separately transmit a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time, wherein the update time is associated with the sensing result.

17. A terminal, comprising a processor, a memory, and a computer program stored in the memory and running on the processor, wherein when the computer program is executed by the processor, the steps of the method for uplink transmission in an unlicensed band according to any one of claims 1 to 15 are implemented.

18. A method for uplink transmission in an unlicensed band, applied to a network device, comprising:

receiving a transport block on a scheduled resource;

wherein before the step of receiving a transport block on a scheduled resource, the method comprises:

transmitting first downlink control information DCI used to indicate the scheduled resource to a terminal, to enable the terminal to sense a scheduled resource to obtain a corresponding sensing result, and separately transmit a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time, wherein the update time is associated with the sensing result.

19. A network device, comprising:

a second receiving module, configured to receive a transport block on a scheduled resource;

wherein the network device further comprises: a second transmitting module, configured to transmit first downlink control information DCI used to indicate the scheduled resource to a terminal, to enable the terminal to sense a scheduled resource to obtain a corresponding sensing result, and separately transmit a first transport block and a second transport block on the scheduled resource based on the sensing result, the first DCI, and an update time, wherein the update time is associated with the sensing result.

20. A network device, comprising a processor, a memory, and a computer program stored in the memory and running on the processor, wherein when the computer program is executed by the processor, the steps of the method for uplink transmission in an unlicensed band according to claim 18 are implemented.