CLAIMS

1. A random access method, applied to a terminal device and comprising:

buffering a second Medium Access Control Protocol Data Unit (MAC PDU) in a target Hybrid Automatic Repeat Request (HARQ) buffer if a contention-free random access procedure is successful, wherein

the second MAC PDU is a PDU that comprises at least data content of a first MAC PDU, the first MAC PDU is a PDU that is buffered in a Msg3 buffer in a contention random access procedure, and the target HARQ buffer and the Msg3 buffer are different buffers;

wherein after the buffering a second MAC PDU in a target HARQ buffer, the method further comprises:

transmitting the second MAC PDU to a network side device by using a HARQ procedure until a transmission stopping condition is met;

wherein the transmission stopping condition comprises at least one of the following:

the maximum HARQ transmission times of the Msg3 is reached; and

the HARQ procedure is occupied by first data, wherein the first data is different from the second MAC PDU.

2. The method according to claim 1, wherein before the buffering the second MAC PDU in the target HARQ buffer, the method further comprises:

in a case that a random access request identifier indicated by a random access response corresponds to the random access request sent by the UE, considering that the contention-free random access procedure is completed.

3. The method according to claim 1, wherein after the transmitting the second MAC PDU to a network side device by using a HARQ procedure until a transmission stopping condition is met, the method further comprises:

if the transmission stopping condition is met, flushing the second MAC PDU buffered in the target HARQ buffer.

4. The method according to claim 1, wherein the transmission stopping condition further comprises:

a response corresponding to HARQ transmission of a Msg3 is received.

5. The method according to claim 1, wherein before the buffering a second MAC PDU in a target HARQ buffer, the method further comprises:

generating the second MAC PDU based on the data content of the first MAC PDU; and

storing the second MAC PDU in the target HARQ buffer.

6. A terminal device, comprising:

a processing module, configured to buffer a second Medium Access Control Protocol Data Unit (MAC PDU) in a target Hybrid Automatic Repeat Request (HARQ) buffer if a contention-free random access procedure is successful, wherein

the second MAC PDU is a PDU that comprises at least data content of a first MAC PDU, the first MAC PDU is a PDU that is buffered in a Msg3 buffer in a contention random access procedure, and the target HARQ buffer and the Msg3 buffer are different buffers;

wherein the terminal device further comprises:

a transmission module, configured to: after the buffering a second MAC PDU in a target HARQ buffer, transmit the second MAC PDU to a network side device by using a HARQ procedure until a transmission stopping condition is met;

wherein the transmission stopping condition comprises at least one of the following:

the maximum HARQ transmission times of the Msg3 is reached; and

the HARQ procedure is occupied by first data, wherein the first data is different from the second MAC PDU.

7. The terminal device according to claim 6, wherein the processing module (301) is further configured to: before the buffering the second MAC PDU in the target HARQ buffer,

in a case that a random access request identifier indicated by a random access response corresponds to the random access request sent by the UE, consider that the contention-free random access procedure is completed.

8. The terminal device according to claim 6, wherein the terminal device further comprises:

a flushing module, configured to: after the transmitting the second MAC PDU to a network side device by using a HARQ procedure until a transmission stopping condition is met, if the transmission stopping condition is met, flush the second MAC PDU buffered in the target HARQ buffer.

9. The terminal device according to claim 6, wherein the transmission stopping condition further comprises:

a response corresponding to HARQ transmission of a Msg3 is received.

10. The terminal device according to claim 6, wherein the terminal device further comprises:

a generation module, configured to: before the buffering a second MAC PDU in a target HARQ buffer, generate the second MAC PDU based on the data content of the first MAC PDU; and

a storage module, configured to store the second MAC PDU in the target HARQ buffer.

11. A terminal device, comprising a processor, a memory, and a computer program that is stored in the memory and that can run on the processor, wherein when the computer program is

executed by the processor, steps of the random access method according to any one of claims 1 to 5 are implemented.

12. 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, steps of the random access method according to any one of claims 1 to 5 are implemented.