WHAT IS CLAIMED IS:

1. A method for generating a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook, performed by a user equipment (UE), comprising:

receiving first configuration information and second configuration information;

generating, based on the first configuration information and the second configuration information, the HARQ-ACK codebook for feeding back a physical downlink shared channel (PDSCH); and

sending the HARQ-ACK codebook to a network device;

wherein the first configuration information indicates whether a multi-slot PDSCH transmission scheduled by a physical uplink control channel (PDCCH) is configured, and the second configuration information indicates whether a code block group (CBG) transmission is configured,

wherein generating, based on the first configuration information and the second configuration information, the HARQ-ACK codebook for feeding back the PDSCH comprises:

determining, based on the first configuration information and the second configuration information, transmission scenario groups, each of the transmission scenario group comprising at least one transmission scenario; and

generating the HARQ-ACK codebook based on the transmission scenario group,

wherein generating the HARQ-ACK codebook based on the transmission scenario groups comprises:

for cells belonging to the same transmission scenario group, determining that a number of HARQ-ACK information bits corresponding to each downlink control information (DCI) is a maximum number of HARQ-ACK information bits corresponding to each DCI in transmission scenarios comprised in the transmission scenario group,

wherein the transmission scenarios comprise: a first transmission scenario, a second transmission scenario, and a third transmission scenario; the first transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is not configured and the CBG transmission is not configured; the second transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is not configured and the CBG transmission is configured; and the third

transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the CBG transmission is not configured;

the number of HARQ-ACK information bits corresponding to each DCI in the first transmission scenario is 1;

the number of HARQ-ACK information bits corresponding to each DCI in the second transmission scenario is M;

the number of HARQ-ACK information bits corresponding to each DCI in the third transmission scenario is N;

wherein M is a maximum number of CBGs comprised in one transport block configured by a network device, N is a maximum number of PDSCHs corresponding to the multi-slot PDSCH transmission scheduled by the PDCCH, the maximum number of PDSCHs is a maximum number of PDSCHs scheduled by DCI determined based on a configuration from the network device or a maximum number of PDSCHs scheduled by DCI determined based on a protocol; and M and N are both positive integers greater than 0.

2. The method of claim 1, wherein generating, based on the first configuration information and the second configuration information, the HARQ-ACK codebook for feeding back the PDSCH comprises:

in response to the first configuration information indicating that the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the second configuration information indicating that the CBG transmission is configured, determining that the number of HARQ-ACK information bits corresponding to each DCI is a maximum value between M and N.

3. The method of claim 2, wherein determining that the number of HARQ-ACK information bits corresponding to the DCI is the maximum value of M and N comprises one of:

in response to one DCI scheduling L PDSCHs, L=1 and $M \geqslant N$, determining that HARQ-ACK information corresponding to the DCI comprises M information bits corresponding to M CBGs of the PDSCH;

in response to one DCI scheduling L PDSCHs, L=1 and $M < N$, determining that the HARQ-ACK information corresponding to the DCI comprises M information bits corresponding to M CBGs of the PDSCH and (N-M) stuffing bits, values of the (N-M) stuffing bits being identical;

in response to one DCI scheduling L PDSCHs, $1<L\leqslant N$ and $M\geqslant N$, determining that the HARQ-ACK information corresponding to the DCI comprises L information bits corresponding to the L PDSCHs and (M-L) stuffing bits, values of the (M-L) stuffing bits being identical; or

in response to one DCI scheduling L PDSCHs, $1<L\leqslant N$ and $M<N$, determining that the HARQ-ACK information corresponding to the DCI comprises L information bits corresponding to the L PDSCHs and (N-L) stuffing bits, values of the (N-L) stuffing bits being identical;

wherein L is a positive integer greater than 0.

4. The method of claim 1, wherein the transmission scenarios further comprise: a fourth transmission scenario; the fourth transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the CBG transmission is configured;

the number of HARQ-ACK information bits corresponding to each DCI in the fourth transmission scenario is M*N or a maximum value between M and N.

5. The method of claim 1, wherein generating, based on the first configuration information and the second configuration information, the HARQ-ACK codebook for feeding back the PDSCH comprises:

in response to one physical uplink control channel (PUCCH) group comprising a plurality of cells belonging to different transmission scenarios, obtaining the HARQ-ACK codebook corresponding to the PUCCH group by concatenating codebooks corresponding to the cells belonging to different transmission scenarios; or

in response to one PUCCH group comprising a plurality of cells belonging to different transmission scenario groups, obtaining the HARQ-ACK codebook corresponding to the PUCCH group by concatenating codebooks corresponding to the cells belonging to different transmission scenario groups.

6. A method for receiving a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook, performed by a network device, comprising:

sending first configuration information and second configuration information to a user equipment (UE); and

receiving the HARQ-ACK codebook for feeding back a physical downlink shared channel (PDSCH) from the UE;

wherein the first configuration information indicates whether a multi-slot PDSCH

transmission scheduled by a physical downlink control channel (PDCCH) is configured, and the second configuration information indicates whether a code block group (CBG) transmission is configured,

wherein the HARQ-ACK codebook is generated based on transmission scenario groups determined based on the first configuration information and the second configuration information, and each of the transmission scenario group comprising at least one transmission scenario,

wherein for cells belonging to the same transmission scenario group, a number of HARQ-ACK information bits corresponding to each DCI is the maximum number of HARQ-ACK information bits corresponding to each DCI in transmission scenarios comprised in the transmission scenario group,

wherein the transmission scenarios comprise: a first transmission scenario, a second transmission scenario, and a third transmission scenario; the first transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is not configured and the CBG transmission is not configured; the second transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is not configured and the CBG transmission is configured; the third transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the CBG transmission is not configured;

the number of HARQ-ACK information bits corresponding to each DCI in the first transmission scenario is 1;

the number of HARQ-ACK information bits corresponding to each DCI in the second transmission scenario is M;

the number of HARQ-ACK information bits corresponding to each DCI in the third transmission scenario is N;

wherein M is a maximum number of CBGs comprised in one transport block configured by a network device, N is a maximum number of PDSCHs corresponding to the multi-slot PDSCH transmission scheduled by the PDCCH, the maximum number of PDSCHs is a maximum number of PDSCHs scheduled by DCI determined based on a configuration from the network device or a maximum number of PDSCHs scheduled by DCI determined based on a protocol; and M and N are both positive integers greater than 0.7. The method of claim 6, wherein in response to the first configuration information indicating that the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the second configuration

information indicating that the CBG transmission is configured, the number of HARQ-ACK information bits corresponding to each DCI is a maximum value between M and N.

8. The method of claim 7, wherein

in response to one DCI scheduling L PDSCHs, L=1 and M ⩾ N, HARQ-ACK information corresponding to the DCI comprises M information bits corresponding to M CBGs of the PDSCH;

in response to one DCI scheduling L PDSCHs, L=1 and M ＜ N, the HARQ-ACK information corresponding to the DCI comprises M information bits corresponding to M CBGs of the PDSCH and (N-M) stuffing bits, values of the (N-M) stuffing bits being identical;

in response to one DCI scheduling L PDSCHs, 1＜L⩽N and M⩾N, the HARQ-ACK information corresponding to the DCI comprises L information bits corresponding to the L PDSCHs and (M-L) stuffing bits, values of the (M-L) stuffing bits being identical; or

in response to one DCI scheduling L PDSCHs, 1＜L⩽N and M＜N, the HARQ-ACK information corresponding to the DCI comprises L information bits corresponding to the L PDSCHs and (N-L) stuffing bits, values of the (N-L) stuffing bits being identical;

wherein L is a positive integer greater than 0.

9. The method of claim 6, wherein the transmission scenarios further comprise: a fourth transmission scenario; the fourth transmission scenario is a transmission scenario in which the multi-slot PDSCH transmission scheduled by the PDCCH is configured and the CBG transmission is configured;

the number of HARQ-ACK information bits corresponding to each DCI in the fourth transmission scenario is M*N or a maximum value between M and N.

10. The method of claim 6, wherein in response to one physical uplink control channel (PUCCH) group comprising a plurality of cells belonging to different transmission scenarios, the HARQ-ACK codebook corresponding to the PUCCH group is obtained by concatenating codebooks corresponding to the cells belonging to different transmission scenarios; or

in response to one PUCCH group comprising a plurality of cells belonging to different transmission scenario groups, the HARQ-ACK codebook corresponding to the PUCCH group is obtained by concatenating codebooks corresponding to the cells belonging to different transmission scenario groups.

11. A mobile terminal, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to execute executable instructions in the memory to implement the steps of the method for generating a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook of any one of claims 1 to 5.

12. A network side device, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to execute executable instructions in the memory to implement the steps of the method for receiving a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook of any one of claims 6 to 10.

13. A non-transitory computer-readable storage medium, having executable instructions stored thereon, wherein when the executable instructions are executed by a processor, the method for generating a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook of any one of claims 1 to 5 is performed.

14. A non-transitory computer-readable storage medium, having executable instructions stored thereon, wherein when the executable instructions are executed by a processor, the method for receiving a Hybrid Automatic Repeat Request Acknowledgement (HARQ-ACK) codebook of any one of claims 6 to 10 is performed.