

WHAT IS CLAIMED IS:

1. A method for configuring a downlink control channel, performed by a ~~network-side device~~network device, comprising:

configuring a multiple-transmission-time-interval (multi-TTI) physical downlink shared channel (PDSCH), scheduled by downlink control information (DCI), to comprise at least one of: a first category of PDSCH or a second category of PDSCH; wherein a scheduling offset between each PDSCH in ~~of~~ the first category of PDSCH and a physical downlink control channel (PDCCH) of the DCI is less than a preset threshold and a scheduling offset between each PDSCH in ~~of~~ the second category of PDSCH and the PDCCH of the DCI is greater than or equal to the preset threshold.

2. The method according to claim 1, further comprising:

configuring a transmission configuration indication (TCI) of a quasi-co-location (QCL) for each PDSCH in the first category of PDSCH to be the same as a TCI of a control resource set (CORESET) with a smallest index in CORESETs in a search space of a nearest slot, from the PDSCH, to which a user equipment is monitoring.

3. The method according to claim 1, further comprising:

configuring a transmission configuration indication (TCI) of a quasi-co-location (QCL) for a first PDSCH in the first category of PDSCH to be the same as a TCI of a control resource set (CORESET) with a smallest index in CORESETs in a search space of a nearest slot, from the PDSCH, to which a user equipment is monitoring.

4. The method according to claim 3, further comprising:

configuring a TCI of a QCL for each PDSCH in the first category of PDSCH except for the first PDSCH, to be the same as a TCI of the first PDSCH.

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

configuring a transmission configuration indication (TCI) of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH to be the same as a TCI of the PDCCH of the DCI, in response to the DCI being configured with no TCI.

6. The method according to any one of claims 1 to 4, further comprising:
configuring, in response to the DCI being configured with one transmission configuration indication (TCI), a ~~transmission configuration indication (TCI)~~ of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH to be the same as the one TCI, ~~in response to the DCI configured with the one TCI~~.

7. The method according to any one of claims 1 to 4, further comprising:
configuring, in response to the DCI being configured with more than one transmission configuration indication (TCI), a ~~transmission configuration indication (TCI)~~ of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH to be determined based on at least one of the more than one TCI, ~~in response to the DCI configured with the more than one TCI~~.

8. The method according to claim 7, wherein
configuring the TCI of the QCL for the at least one PDSCH in the second category of PDSCH to be determined based on the at least one of the more than one TCI ~~more than one TCI~~ comprises:

configuring the TCI of the QCL for the at least one PDSCH in the second category of PDSCH to correspond ~~in corresponding to~~ N of the more than one TCI one to one, in response to a number of the at least one PDSCH in the second category of PDSCH being less than or equal to a number of the more than one TCI, wherein N is equal to or greater than one, and is a number of PDSCHs in the second category of PDSCH.

9. The method according to claim 8, further comprising:
configuring, in response to two of the more than one TCI configured in the DCI being corresponding to different QCL type D, a time domain interval between two PDSCH slots corresponding to the two of the more than one TCI to be greater than or equal to a set interval; ~~in response to the two of the more than one TCI configured in the DCI corresponding to different QCL type D~~.

10. The method according to claim 9, further comprising:
configuring the time domain interval between the two PDSCH slots corresponding to the two of the more than one TCI to be related to a subcarrier spacing.

11. A method for determining a downlink control channel, performed by a user equipment, comprising:

determining a multiple-transmission-time-interval (multi-TTI) physical downlink shared channel (PDSCH), scheduled by downlink control information (DCI), to comprise at least one of: a first category of PDSCH or a second category of PDSCH; wherein a scheduling offset between each PDSCH in ~~of~~ the first category of PDSCH and a physical downlink control channel (PDCCH) of the DCI is less than a preset threshold and a scheduling offset between each PDSCH in ~~of~~ the second category of PDSCH and the PDCCH of the DCI is greater than or equal to the preset threshold.

12. The method according to claim 11, further comprising:

determining that a transmission configuration indication (TCI) of a quasi-co-location (QCL) for each PDSCH in the first category of PDSCH is the same as a TCI of a control resource set (CORESET) with a smallest index in CORESETs in a search space of a nearest slot, from the PDSCH, to which the user equipment is monitoring.

13. The method according to claim 11, further comprising:

determining that a transmission configuration indication (TCI) of a quasi-co-location (QCL) for a first PDSCH in the first category of PDSCH is the same as a TCI of a control resource set (CORESET) with a smallest index in CORESETs in a search space of a nearest slot, from the PDSCH, to which the user equipment is monitoring; and

determining that a TCI of a QCL for each PDSCH in the first category of PDSCH except for the first PDSCH, is the same as a TCI of the first PDSCH.

~~14. The method according to claim 13, comprising:~~

~~determining that a TCI of a QCL for each PDSCH in the first category of PDSCH except for the first PDSCH is the same as a TCI of the first PDSCH.~~

~~14~~14. The method according to any one of claims 11 to 13, further comprising:

determining that a transmission configuration indication (TCI) of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH is the same as a TCI of the PDCCH of the DCI, in response to the DCI being configured with no TCI.

~~16~~15. The method according to any one of claims 11 to 13, further comprising:

determining, in response to the DCI being configured with one transmission configuration indication (TCI), that a ~~transmission configuration indication (TCI)~~ of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH is the same as the one TCI, ~~in response to the DCI configured with the one TCI~~.

~~17~~16. The method according to any one of claims 11 to 13, further comprising:

determining, in response to the DCI being configured with more than one transmission configuration indication (TCI), that a ~~transmission configuration indication (TCI)~~ of a quasi-co-location (QCL) for at least one PDSCH in the second category of PDSCH is determined based on at least one of the more than one TCI, ~~in response to the DCI configured with the more than one TCI~~.

~~18~~17. The method according to claim ~~17~~16,

determining that the TCI of the QCL for the at least one PDSCH in the second category of PDSCH is determined based on the at least one of the more than one TCI, ~~more than one TCI~~ comprises:

determining the TCI of the QCL for the at least one PDSCH in the second category of PDSCH to correspond in corresponding to N of the more than one TCI one to one, in response to a number of the at least one PDSCH in the second category of PDSCH being less than or equal to a number of the more than one TCI, wherein N is equal to or greater than one, and is a number of PDSCHs in the second category of PDSCH.

~~19~~18. The method according to claim ~~18~~17, further comprising:

determining, in response to two of the more than one TCI configured in the DCI being corresponding to different QCL type D, that a time domain interval between two PDSCH slots corresponding to the two of the more than one TCI is greater than or equal to a set interval, ~~in response to the two of the more than one TCI configured in the DCI corresponding to different QCL type D~~; and

determining that the time domain interval between the two PDSCH slots corresponding to the two of the more than one TCI is related to a subcarrier spacing.

~~20. The method according to claim 19, comprising:~~

~~determining that the time domain interval between the two PDSCH slots corresponding to the two of the more than one TCI is related to a subcarrier spacing.~~

~~21. An apparatus for configuring a downlink control channel, implemented in a network side device, comprising:~~

~~a first configuration module, configured to configure a multiple transmission time interval (multi-TTI) physical downlink shared channel (PDSCH), scheduled by downlink control information (DCI), to comprise at least one of: a first category of PDSCH or a second category of PDSCH; wherein a scheduling offset between each of the first category of PDSCH and a physical downlink control channel (PDCCH) of the DCI is less than a preset threshold and a scheduling offset between each of the second category of PDSCH and the PDCCH of the DCI is greater than or equal to the preset threshold.~~

~~22. An apparatus for determining a downlink control channel, implemented in a user equipment, comprising:~~

~~a first determining module, configured to determine a multiple transmission time interval (multi-TTI) physical downlink shared channel (PDSCH), scheduled by downlink control information (DCI), to comprise at least one of: a first category of PDSCH or a second category of PDSCH; wherein a scheduling offset between each of the first category of PDSCH and a physical downlink control channel (PDCCH) of the DCI is less than a preset threshold and a scheduling offset between each of the second category of PDSCH and the PDCCH of the DCI is greater than or equal to the preset threshold.~~

~~23~~19. A ~~network side device~~network device, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to execute the executable instructions in the memory to implement steps of the method of any one of claims 1 to 10.

~~24~~20. A user equipment, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to execute the executable instructions in the memory to implement steps of the method of any one of claims 11 to ~~20~~18.

~~25. A non-transitory computer-readable storage medium with executable instructions stored thereon, wherein when the executable instructions are executed by a processor, steps of the method of any one of claims 1 to 10 or steps of the method of any one of claims 11 to 20 are implemented.~~