

Claims

1. A method of reporting, by a user equipment (UE), channel state information (CSI) in a wireless communication system, the method comprising:

5 receiving, by the UE and from a base station (BS), downlink control information (DCI) related to an aperiodic CSI report that is to be performed by the UE in a slot n ;

determining, by the UE, a value n_{CQI_ref} based on a number of symbols Z' related to a time for computing the CSI;

10 determining, by the UE, a CSI reference resource as being a slot $n - n_{CQI_ref}$ in a time domain that is to be used for the aperiodic CSI report; and

transmitting, by the UE and to the BS, the aperiodic CSI report in the slot n , based on the CSI reference resource being slot $n - n_{CQI_ref}$,

wherein the n_{CQI_ref} is a smallest value greater than or equal to $\left\lfloor \frac{Z'}{N_{slot}^{slot}} \right\rfloor$ such that the slot $n - n_{CQI_ref}$ satisfies a valid downlink slot criteria, and

15 wherein $\lfloor \cdot \rfloor$ is a floor function and N_{slot}^{slot} is a number of symbols in one slot.

2. The method of claim 1, wherein the valid downlink slot criteria is based at least on (i) the number of symbols Z' related to the time for computing the CSI and (ii) a DCI processing time.

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3. The method of claim 1, wherein N_{slot}^{slot} is equal to 14 symbols in a slot.

4. The method of claim 1, further comprising:

receiving, from the BS, an aperiodic reference signal (CSI-RS) in the CSI

reference resource, slot $n - n_{CQI_ref}$;

determining the CSI based on the aperiodic CSI-RS; and

generating the aperiodic CSI report based on the CSI.

5 5. The method of claim 1, further comprising:

determining the number of symbols Z' related to the time for computing the CSI based on a CSI complexity and a subcarrier spacing.

10 6. The method of claim 5, wherein the number of symbols Z' does not include a DCI processing time.

7. The method of claim 1, wherein determining the value n_{CQI_ref} based on the number of symbols Z' related to the time for computing the CSI comprises:

15 determining the value n_{CQI_ref} based on the number of symbols Z' related to the time for computing the CSI, and further based on a number of symbols in one slot.

8. The method of claim 1, wherein receiving the DCI comprises:

receiving the DCI in a slot other than the slot n in which the aperiodic CSI report is to be performed.

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9. The method of claim 1, wherein, based on the value n_{CQI_ref} being equal to zero, the aperiodic CSI report is performed in a same slot as receiving the DCI.

10. A user equipment (UE) configured to report channel state information (CSI)

in a wireless communication system, the UE comprising:

a radio frequency (RF) module configured to transmit and receive radio signals;

at least one processor; and

at least one computer memory operably connectable to the at least one

5 processor and storing instructions that, when executed, cause the at least one processor to perform operations comprising:

receiving, via the RF module and from a base station (BS), downlink control information (DCI) related to an aperiodic CSI report that is to be performed by the UE in a slot n ;

10 determining, by the UE, a value n_{CQI_ref} based on a number of symbols Z' related to a time for computing the CSI;

determining, by the UE, a CSI reference resource as being a slot $n - n_{CQI_ref}$ in a time domain that is to be used for the aperiodic CSI report; and

15 transmitting, via the RF module and to the BS, the aperiodic CSI report in the slot n , based on the CSI reference resource being slot $n - n_{CQI_ref}$,

wherein the n_{CQI_ref} is a smallest value greater than or equal to $\left\lceil \frac{Z'}{N_{symp}^{slot}} \right\rceil$ such that the slot $n - n_{CQI_ref}$ satisfied a valid downlink slot criteria, and

wherein $\lfloor \cdot \rfloor$ is a floor function and N_{symp}^{slot} is a number of symbols in one slot.

20 11. The UE of claim 10, wherein the valid downlink slot criteria is based at least on (i) the number of symbols Z' related to the time for computing the CSI and (ii) a DCI processing time.

12. The UE of claim 10, wherein N_{symp}^{slot} is equal to 14 symbols in a slot.

13. The UE of claim 10, wherein the operations further comprise:

receiving, via the RF module and from the BS, an aperiodic reference signal (CSI-RS) in the CSI reference resource, slot $n - n_{CQI_ref}$;

5 determining the CSI based on the aperiodic CSI-RS; and
generating the aperiodic CSI report based on the CSI.

14. The UE of claim 10, wherein determining the number of symbols Z' related to the time for computing the CSI comprises:

10 determining the number of symbols Z' related to the time for computing the CSI based on a CSI complexity and a subcarrier spacing.

15. The UE of claim 14, wherein the number of symbols Z' does not include a DCI processing time.

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16. The UE of claim 10, wherein determining the value n_{CQI_ref} based on the number of symbols Z' related to the time for computing the CSI comprises:

determining the value n_{CQI_ref} based on the number of symbols Z' and further based on information related to a subcarrier spacing.

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17. The UE of claim 10, wherein receiving the DCI comprises:

receiving the DCI in a slot other than the slot n in which the aperiodic CSI report is to be performed.

18. The UE of claim 10, wherein, based on the value n_{CQI_ref} being equal to zero, the aperiodic CSI report is performed in a same slot as receiving the DCI.