

Claims

- [Claim 1] A method of reporting, by a user equipment (UE), channel state information (CSI) in a wireless communication system, the method comprising:
 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 $n_{\text{CQI_ref}}$ 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 $n - n_{\text{CQI_ref}}$ 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 $n - n_{\text{CQI_ref}}$.
- [Claim 2] The method of claim 1, wherein the $n_{\text{CQI_ref}}$ is a smallest value greater than or equal to $\left\lfloor \frac{Z'}{N_{\text{ymb}}^{\text{slot}}} \right\rfloor$ such that the slot $n - n_{\text{CQI_ref}}$ satisfies a valid downlink slot criteria, and
 wherein $\lfloor \cdot \rfloor$ is a floor function and $N_{\text{ymb}}^{\text{slot}}$ is a number of symbols in one slot.
- [Claim 3] The method of claim 2, 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.
- [Claim 4] The method of claim 2, wherein $N_{\text{ymb}}^{\text{slot}}$ is equal to 14 symbols in a slot.
- [Claim 5] The method of claim 1, further comprising:
 receiving, from the BS, an aperiodic reference signal (CSI-RS) in the CSI reference resource, slot $n - n_{\text{CQI_ref}}$;
 determining the CSI based on the aperiodic CSI-RS; and
 generating the aperiodic CSI report based on the CSI.
- [Claim 6] 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.
- [Claim 7] The method of claim 6, wherein the number of symbols Z' does not include a DCI processing time.
- [Claim 8] The method of claim 1, wherein determining the value $n_{\text{CQI_ref}}$ based on the number of symbols Z' related to the time for computing the CSI

comprises:

determining the value $n_{\text{CQI_ref}}$ 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.

[Claim 9]

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.

[Claim 10]

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

[Claim 11]

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 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 ;

determining, by the UE, a value $n_{\text{CQI_ref}}$ 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 $n - n_{\text{CQI_ref}}$ in a time domain that is to be used for the aperiodic CSI report; and

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 $n - n_{\text{CQI_ref}}$.

[Claim 12]

The UE of claim 11, wherein the $n_{\text{CQI_ref}}$ is a smallest value greater than or equal to

$$\left\lceil \frac{Z'}{N_{\text{sym}}^{\text{slot}}} \right\rceil$$

downlink slot criteria, and

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

[Claim 13]

The UE of claim 12, 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.

- [Claim 14] The UE of claim 12, wherein N_{symbol}^{slot} is equal to 14 symbols in a slot.
- [Claim 15] The UE of claim 11, 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 $n - n_{CQI_ref}$;
determining the CSI based on the aperiodic CSI-RS; and
generating the aperiodic CSI report based on the CSI.
- [Claim 16] The UE of claim 11, wherein determining the number of symbols Z' related to the time for computing the CSI comprises:
determining the number of symbols Z' related to the time for computing the CSI based on a CSI complexity and a subcarrier spacing.
- [Claim 17] The UE of claim 16, wherein the number of symbols Z' does not include a DCI processing time.
- [Claim 18] The UE of claim 11, 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.
- [Claim 19] The UE of claim 11, 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.
- [Claim 20] The UE of claim 11, 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.