CLAIMS

WHAT IS CLAIMED IS:

1. A method for determining Channel Quality Indicators (CQI) to be reported by User Equipments (UE) in base station cooperation, comprising steps of:

assigning a sequence of adjustment factors to various possible base station cooperations;

transmitting the assigned adjustment factors to UEs;

calculating an original CQI for each possible base station cooperation in each UE;

adjusting the original CQIs based on the received adjustment factors in UEs; and

reporting one or multiple original CQIs that are the highest after the aforesaid adjustment and knowledge of which CQI(s) are reported to the base station by each UE.

2. The method according to claim 1, wherein in the step of assigning, an adjustment factor is assigned for each possible base station cooperation.

3. The method according to claim 1, wherein in the step of assigning, an adjustment factor is assigned for multiple possible base station cooperations.

4. The method according to any one of claims 1-3, wherein in the step of transmitting, the adjustment factors are transmitted to UEs through Radio Resource Control or Media Access Control or Physical Downlink Control Channel.

5. The method according to claim 1, wherein the base station cooperation is performed by a high power node and one or a plurality of lower power nodes.

6. The method according to claim 5, wherein in the step of assigning, the more heavily the high power node transmitting data in a base station cooperation is loaded, the higher the adjustment factor is assigned to said base station cooperation.

7. The method according to claim 1, wherein in the step of adjusting, a corresponding adjustment factor is subtracted from each original CQI.

8. The method according to claim 1, wherein in the step of adjusting, each original CQI is multiplied by a corresponding adjustment factor.

9. The method according to claim 5, wherein in the step of assigning, the sequence of adjustment factors are assigned for various possible base station cooperations corresponding to a load condition that the high power node is heavily loaded.

10. The method according to claim 9, further comprising steps of:

assigning another sequence of adjustment factors to various possible base station cooperations corresponding to a load condition that the high power node is lightly loaded by a base station;

transmitting the anther sequence of adjustment factors to the UEs;

adjusting the original CQIs based on the received another sequence of adjustment factors, and reporting one or multiple original CQI(s) that are the highest after the aforesaid adjustment and knowledge of which CQI(s) are reported to the base station by each UE.

11. A method for determining Channel Quality Indicators (CQI) to be reported by User Terminals (UE) in base station joint cooperation, comprising the steps of :

assigning an adjustment factor to each base station;

transmitting the assigned adjustment factors to UEs;

calculating an original CQI for each possible base station cooperation in each UE;

adjusting the original CQIs based on the received adjustment factors in UEs; and

reporting one or multiple original CQI(s) that are the highest after the aforesaid adjustment and knowledge of which CQI(s) are reported to the base station by each UE.

12. The method according to claim 11, wherein in the step of assigning, the more heavily the base station is loaded, the higher the adjustment factor is assigned to it.

13. The method according to claim 11, wherein the base station cooperation is performed by a high power node and one or a plurality of lower power nodes.

14. The method according to claim 12, wherein in the step of adjusting, each original CQI is subtracted by the adjustment factors assigned to the base stations, if the base station transmits data in the corresponding base station cooperation.

15. A base station for determining Channel Quality Indicators to be reported, comprising:

an assignment unit, assigning adjustment factors used to adjust original CQIs;

an adjustment factor transmitting unit, transmitting the assigned adjustment factors to User Equipments;

a receiving unit, receiving the knowledge of which CQI is reported and the corresponding CQI from User Equipments; and

a scheduling unit, which allocates spectral resources to User Equipments based on the knowledge of which CQI is reported and the corresponding CQI.

16. The base station according to claim 15, wherein the assignment unit assigns adjustment factors to various possible base station cooperations or base stations.

17. The base station according to claim 15 or 16, further comprising a reference signal and data transmitting unit, which transmits to UEs a reference signal and relevant data which can be used for calculating original CQIs at UE.

18. A User Equipment for determining Channel Quality Indicators to be reported in base station joint transmission, comprising:

an adjustment factor receiving unit, receiving adjustment factors from a base station;

a calculation unit, calculating an original CQI for each possible base station cooperation;

an adjustment unit, adjusting the original CQIs based on the received adjustment factors; and

a reporting unit, reporting one or multiple original CQI(s) that are the highest after the aforesaid adjustment and knowledge of which CQIs are reported to the base station.

19. The User Equipment according to claim 18, further comprising a reference signal and data receiving unit, which receives a reference signal and relevant data which can be used for calculating original CQIs from the base station.

CLAIMS:

1. A method for receiving a channel quality indicator (CQI), the method comprising:
transmitting to a UE a factor for each of base station coordination types; and
receiving the CQI reported from the UE, the CQI being calculated at the UE in reference to the factor.

2. The method according to claim 1, wherein the base station coordination types are hypotheses of coordinated transmission among multiple base stations, and the factor is set for each of the hypotheses.

3. The method according to claim 1, wherein the factor is transmitted to the UE through Radio Resource Control, Media Access Control or Physical Downlink Control Channel.

4. The method according to claim 1, wherein each of the base station coordination types includes a high power node and one or a plurality of lower power nodes.

5. The method according to claim 1, wherein the CQI is calculated at the UE by subtracting the factor from an original CQI.

6. The method according to claim 1, wherein the CQI is calculated at the UE by multiplying an original CQI by the factor.

7. The method according to claim 1, further comprising receiving from the UE information identifying one of the base station coordination types, for which the CQI is reported from the UE.

8. A method for reporting a channel quality indicator (CQI), the method comprising:
receiving from a base station a factor for each of base station coordination types;
calculating the CQI in reference to the factor; and
reporting the calculated CQI to the base station.

9. The method according to claim 8, wherein the base station coordination types are hypotheses of coordinated transmission among multiple base stations, and the factor is set for each of the hypotheses.

10. The method according to claim 8, wherein the factor is received through Radio Resource Control, Media Access Control or Physical Downlink Control Channel.

11. The method according to claim 8, wherein each of the base station coordination types includes a high power node and one or a plurality of lower power nodes.

12. The method according to claim 8, wherein the CQI is calculated by subtracting the factor from an original CQI.

13. The method according to claim 8, wherein the CQI is calculated by multiplying an original CQI by the factor.

14. The method according to claim 8, further comprising reporting to the base station information identifying one of the base station coordination types, for which the CQI is reported.

15. A base station comprising:

a transmitting section configured to transmit to a UE a factor for each of base station coordination types; and

a receiving section configured to receive a channel quality indicator (CQI) reported from the UE, the CQI being calculated at the UE in reference to the factor.

16. The base station according to claim 15, wherein the base station coordination types are hypotheses of coordinated transmission among multiple base stations, and the factor is set for each of the hypotheses.

17. The base station according to claim 15, wherein the transmitting section transmits the factor to the UE through Radio Resource Control, Media Access Control or Physical Downlink Control Channel.

18. The base station according to claim 15, wherein each of the base station coordination types includes a high power node and one or a plurality of lower power nodes.

19. The base station according to claim 15, wherein the CQI is calculated at the UE by subtracting the factor from an original CQI.

20. The base station according to claim 15, wherein the CQI is calculated at the UE by multiplying an original CQI by the factor.

21. The base station according to claim 15, wherein the receiving section receives from the UE information identifying one of the base station coordination types, for which the CQI is reported from the UE.

22. A user equipment comprising:

a receiving section configured to receive from a base station a factor for each of base station coordination types;

a calculating section configured to calculate a channel quality indicator (CQI) in reference to the factor; and

a reporting section configured to report the calculated CQI to the base station.

23. The user equipment according to claim 22, wherein the base station coordination types are hypotheses of coordinated transmission among multiple base stations, and the factor is set for each of the hypotheses.

24. The user equipment according to claim 22, wherein the receiving section receives the factor through Radio Resource Control, Media Access Control or Physical Downlink Control Channel.

25. The user equipment according to claim 22, wherein each of the base station coordination types includes a high power node and one or a plurality of lower power nodes.

26. The user equipment according to claim 22, wherein the calculating section calculates the CQI by subtracting the factor from an original CQI.

27. The user equipment according to claim 22, wherein the calculating section calculates the CQI by multiplying an original CQI by the factor.

28. The user equipment according to claim 22, wherein the reporting section reports to the base station information identifying one of the base station coordination types, for which the CQI is reported.

29. An integrated circuit for controlling a process comprising:

transmitting to a UE a factor for each of base station coordination types; and

receiving the CQI reported from the UE, the CQI being calculated at the UE in reference to the factor.

30. An integrated circuit for controlling a process comprising:

receiving from a base station a factor for each of base station coordination types;

calculating a channel quality indicator (CQI) in reference to the factor; and

reporting the calculated CQI to the base station.