

CLAIMS

What is claimed is:

1. A method for reporting positioning measurement information, applied to a terminal and comprising:

- 5 receiving first configuration information from a network device;
 receiving second configuration information from the network device, wherein the second configuration information is used to configure a reference beam;
 calculating a reference signal received power RSRP of a first beam according to the reference beam, wherein the first beam is from a beam group and the first beam is
10 different from the reference beam;
 reporting a measurement result of the beam group based on the first configuration information, wherein the measurement result comprises the RSRP of the first beam, wherein
 the beam group is used to transmit a positioning reference signal PRS, and the
15 beam group comprises N beams in cells participating in positioning.

2. The method according to claim 1, wherein the N beams comprises any one of the following:

- top N beams in descending order of reference signal received power RSRP in a first cell, the first cell is a cell participating in positioning;
20 all beams whose RSRP is higher than a preset threshold in the first cell;
 top N beams selected from M beams in descending order of RSRP, wherein the M beams are beams whose RSRP is higher than the preset threshold in the first cell, and M is an integer greater than N;
 top N beams in ascending order of TOA in the first cell;
25 top N beams selected from M beams in ascending order of TOA, wherein the M beams are beams whose RSRP is higher than a preset threshold in the first cell; and
 top L beams in ascending order of TOA and top K beams in descending order of RSRP in the first cell, wherein $N \leq L + K$.

3. The method according to claim 2, wherein in a case in which the N beams are the top L beams and the top K beams,

when the top L beams and the top K beams do not comprise a same beam, $N = L + K$; or

5 when the top L beams and the top K beams comprise a same beam, N is the actual number of beams.

4. The method according to claim 1, wherein the measurement result of the beam group further comprises a first measurement result and/or a second measurement result, wherein the first measurement result is a measurement result associated with a
10 downlink time difference of arrival DL-TDOA, and the second measurement result is a measurement result associated with a downlink angle of departure DL-AoD.

5. The method according to claim 4, wherein the first configuration information is used to indicate the terminal to report the first measurement result or the second measurement result.

15 6. The method according to claim 1, wherein the cells participating in positioning comprise a reference cell and a neighboring cell; or the cells participating in positioning comprise a neighboring cell.

7. The method according to claim 6, wherein when N is equal to 1, a beam in a beam group of the reference cell is determined as a reference beam.

20 8. The method according to claim 1, wherein the reference beam is any one of the following beams:

a beam with a largest RSRP;

a beam with a smallest TOA; and

a designated second beam, wherein the second beam is different from the beam
25 with the largest RSRP, and the second beam is different from the beam with the smallest TOA.

9. The method according to claim 1, wherein the reporting a measurement result of a beam group comprises:

reporting a measurement result of each beam in the beam group; or

reporting a joint measurement result of the beam group, wherein the joint measurement result is a measurement result obtained after joint processing is performed on measurement results of beams in the beam group.

10. The method according to claim 9, wherein the reporting a measurement result
5 of each beam in the beam group comprises:

reporting measurement results of the reference beam and a third beam based on first preset content, wherein the third beam is a beam in the beam group of the neighboring cell; and

reporting a measurement result of a fourth beam based on second preset content,
10 wherein the fourth beam is a beam other than the reference beam in the beam group which contains the reference beam, wherein

the first preset content comprises at least one of a beam identifier beam ID, a cell identity cell ID, a positioning reference signal identifier PRS ID, an additional path, reference quality, a reference signal time difference RSTD, reference signal time
15 difference quality RSTD quality, RSRP, reference signal received power quality RSRP quality, and a port; and

the second preset content comprises at least one of a reference time difference reference time difference, a beam ID, a cell ID, a PRS ID, an additional path, reference quality, RSRP, RSRP quality, and a port.

11. The method according to claim 9, wherein a manner of joint processing
20 comprises any one of the following:

calculating an average value of the measurement results of the beams in the beam group;

calculating a weighted average value of the measurement results of the beams in
25 the beam group;

selecting measurement results of top J beams from the beam group in descending order of measurement quality;

selecting measurement results of top J beams from the beam group in descending order of measurement result values; and

selecting measurement results of top J beams from the beam group in ascending
30 order of measurement result values, wherein

J is a positive integer less than N.

12. A method for reporting positioning measurement information, applied to a network device and comprising:

sending first configuration information to a terminal;

5 sending second configuration information to the terminal, wherein the second configuration information is used to configure a reference beam used to calculate a reference signal received power RSRP of a first beam, wherein the first beam is from a beam group and the first beam is different from the reference beam;

10 receiving a measurement result of the beam group from the terminal, wherein the measurement result comprises the RSRP of the first beam, wherein

the beam group is used to transmit a positioning reference signal PRS, and the beam group comprises N beams in cells participating in positioning.

13. The method according to claim 12, wherein the N beams comprises any one of the following:

15 top N beams in descending order of reference signal received power RSRP in a first cell, wherein the first cell is a cell participating in positioning;

all beams whose RSRP is higher than a preset threshold in the first cell;

20 top N beams selected from M beams in descending order of RSRP, wherein the M beams are beams whose RSRP is higher than the preset threshold in the first cell, and M is an integer greater than N;

top N beams in ascending order of TOA in the first cell;

top N beams selected from M beams in ascending order of TOA, wherein the M beams are beams whose RSRP is higher than a preset threshold in the first cell; and

25 top L beams in ascending order of TOA and top K beams in descending order of RSRP in the first cell, wherein $N \leq L + K$.

14. The method according to claim 13, wherein in a case in which the N beams are the top L beams and the top K beams,

when the top L beams and the top K beams do not comprise a same beam, $N = L + K$; or

30 when the top L beams and the top K beams comprise a same beam, N is the actual number of beams.

15. The method according to claim 12, wherein the measurement result of the beam group further comprises a first measurement result and/or a second measurement result, wherein the first measurement result is a measurement result associated with a downlink time difference of arrival DL-TDOA, and the second measurement result is a measurement result associated with a downlink angle of departure DL-AoD.

16. The method according to claim 12, wherein the cells participating in positioning comprise a reference cell and a neighboring cell; or the cells participating in positioning comprise a neighboring cell.

17. A terminal, comprising:

a first receiving module, configured to: receive first configuration information from a network device; receive second configuration information from the network device, wherein the second configuration information is used to configure a reference beam; and calculate a reference signal received power RSRP of a first beam according to the reference beam, wherein the first beam is from a beam group and the first beam is different from the reference beam;

a first sending module, configured to report a measurement result of the beam group based on the first configuration information, wherein the measurement result comprises the RSRP of the first beam, wherein

the beam group is used to transmit a positioning reference signal PRS, and the beam group comprises N beams in cells participating in positioning.

18. The terminal according to claim 17, wherein the N beams comprises any one of the following:

top N beams in descending order of reference signal received power RSRP in a first cell, the first cell is a cell participating in positioning;

all beams whose RSRP is higher than a preset threshold in the first cell;

top N beams selected from M beams in descending order of RSRP, wherein the M beams are beams whose RSRP is higher than the preset threshold in the first cell, and M is an integer greater than N;

top N beams in ascending order of TOA in the first cell;

top N beams selected from M beams in ascending order of TOA, wherein the M beams are beams whose RSRP is higher than a preset threshold in the first cell; or,

top L beams in ascending order of TOA and top K beams in descending order of RSRP in the first cell, wherein $N \leq L + K$.

19. The terminal according to claim 17, wherein the measurement result of the beam group further comprises a first measurement result and/or a second measurement result, wherein the first measurement result is a measurement result associated with a downlink time difference of arrival DL-TDOA, and the second measurement result is a measurement result associated with a downlink angle of departure DL-AoD.

20. A network device, comprising:

10 a second sending module, configured to: send first configuration information to a terminal; send second configuration information to the terminal, wherein the second configuration information is used to configure a reference beam used to calculate a reference signal received power RSRP of a first beam, wherein the first beam is from a beam group and the first beam is different from the reference beam; and

15 a second receiving module, configured to receive a measurement result of the beam group from the terminal, wherein the measurement result comprises the RSRP of the first beam, wherein

the beam group is used to transmit a positioning reference signal PRS, and the beam group comprises N beams in cells participating in positioning.