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(54) MEASUREMENT SIGNAL RECEIVING AND REPORTING METHODS AND APPARATUSES, BASE STATION AND USER EQUIPMENT

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- **NOKIA ET AL: "UE NR RRM measurement capabilities", 3GPP DRAFT; R4-1705157, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE , vol. RAN WG4, no. Hangzhou, China; 20170515 - 20170519 14 May 2017 (2017-05-14), XP051277299, Retrieved from the Internet: URL:http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN4/Docs/ [retrieved on 2017-05-14]**

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Description

TECHNICAL FIELD

[0001] The present disclosure generally relates to the technical field of communication, and more particularly to, measurement signal receiving and reporting methods and devices, a base station, User Equipment (UE) and a computer-readable storage medium.

BACKGROUND

[0002] At present, 5th Generation (5G) standardization of the 3rd Generation Partnership Project (3GPP) requires mobility measurement to be ensured. However, unlike a Long Term Evolution (LTE) system, in a 5G high-frequency system, a measurement reference signal is scanned based on a beam and thus management over measurement beams is different from that of the LTE system.

[0003] In a related art, when UE is in an intermediate scenario where coverage of two beams exists, a system only configures one of the two beams as a measurement reference signal beam of the UE. However, the beam configured by the system is not always an optimal beam. Therefore, a signal measured by the UE based on the beam configured by the system may be not so accurate.

[0004] In European patent application EP3068060A1, there is provided a method for transmitting a signal from a base station in a wireless communication system supporting multiuser-multiple input and multiple output (MU-MIMO). The patent application WO2015046895A1 relates to transmitting and receiving beam information in a wireless communication system. In the document "UE NR RRM measurement capabilities", XP051277299, the beam management and the related UE requirements are discussed. Further related technologies are discussed in the US patent applications US 2016/150435 A1 and US 2016/337916 A1.

SUMMARY

[0005] In view of this, the present disclosure discloses measurement signal receiving and reporting methods and devices, a base station, UE and a computer-readable storage medium, to improve accuracy of a measurement signal of UE in a multi-beam coverage scenario. The invention is set out in the appended set of claims. Any description that does not fall within the scope of the claims shall be regarded as an example for understanding the present invention.

[0006] The technical solutions provided by the embodiments of the present disclosure may have the following beneficial effects.

[0007] The first measurement configuration information including the multiple beams is generated for the UE according to the multi-beam measurement capability information reported by the UE, and then the UE may generate the first measurement signals according to the multiple beams in the first measurement configuration information, so that accuracy of the measurement signal of the UE in a multi-beam coverage scenario is improved.

[0008] The single beam is configured for the UE at first, and then under the condition that the second measurement signal generated based on the single beam is not so accurate, the multiple beams are configured instead of the single beam, so that improvement in the accuracy of the measurement signal is facilitated.

[0009] After it is confirmed that the UE is at the geometric center, the measurement resource corresponding to each beam is updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam, so that the measurement resource is reasonably allocated for each beam, and the accuracy of the measurement signal may be ensured.

[0010] The reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0011] The reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0012] The multi-beam measurement capability information of the UE is reported to the base station to enable the base station to send the first measurement configuration information to the UE according to the multi-beam measurement capability information reported by the UE, and the UE, after receiving the first measurement configuration information, may generate the first measurement signals according to the multiple beams in the first measurement configuration information and reports the first measurement signals to the base station, so that the accuracy of the measurement signal of the UE in the multi-beam coverage scenario is improved.

[0013] The second measurement signal is generated according to the single beam in the second measurement configuration information sent by the base station and the first measurement configuration information sent by the base station according to the second measurement signal is received, to implement configuration of the multiple beams instead of the single beam under the condition that the second measurement signal generated based on the single beam is not so accurate to enable the UE to generate the first measurement signals based on the multiple beams, so that improvement in the accuracy of the measurement signal is improved.

[0014] The third measurement configuration information sent by the base station is received, the third measurement signal is generated according to the single beam in the third measurement configuration information, and

the third measurement signal is reported to the base station, so that the accuracy of the measurement signal is ensured.

[0015] It is to be understood that the above general descriptions and detailed descriptions below are only exemplary and explanatory and not intended to limit the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

Fig. 1 is a flow chart illustrating a measurement signal receiving method.

Fig. 2 is a flow chart illustrating generation of first measurement configuration information for UE according to multi-beam measurement capability information.

Fig. 3 is a flow chart illustrating another measurement signal receiving method.

Fig. 4A is a flow chart illustrating another measurement signal receiving method.

Fig. 4B is a flow chart illustrating another measurement signal receiving method.

Fig. 5A is a flow chart illustrating another measurement signal receiving method.

Fig. 5B is a flow chart illustrating another measurement signal receiving method.

Fig. 6 is a flow chart illustrating a measurement signal reporting method.

Fig. 7A is a flow chart illustrating reception of first measurement configuration information sent by a base station according to multi-beam measurement capability information.

Fig. 7B is a flow chart illustrating another measurement signal reporting method.

Fig. 8 is a block diagram of a measurement signal receiving device.

Fig. 9A is a block diagram of another measurement signal receiving device.

Fig. 9B is a block diagram of another measurement signal receiving device.

Fig. 9C is a block diagram of another measurement signal receiving device.

Fig. 9D is a block diagram of another measurement signal receiving device.

Fig. 9E is a block diagram of another measurement signal receiving device.

Fig. 9F is a block diagram of another measurement signal receiving device.

Fig. 10 is a block diagram of a measurement signal reporting device.

Fig. 11A is a block diagram of another measurement signal reporting device.

Fig. 11B is a block diagram of another measurement signal reporting device.

Fig. 12 is a block diagram of a measurement signal receiving device.

Fig. 13 is a block diagram of a measurement signal reporting device.

DETAILED DESCRIPTION

[0017] The technical solutions in the embodiments of the present disclosure will be clearly and completely described below in combination with the accompanying drawings in the embodiments of the present disclosure. It is apparent that the described embodiments are not all embodiments but only part of embodiments of the present disclosure. All other embodiments obtained by those of ordinary skill in the art based on the embodiments in the present disclosure without creative work shall fall within the scope of protection of the present disclosure.

[0018] Fig. 1 is a flow chart illustrating a measurement signal receiving method. The method is described from a base station side. As illustrated in Fig. 1, the method includes the following steps.

[0019] In S101, multi-beam measurement capability information reported by UE is received.

[0020] The UE reports its own multi-beam measurement capability information to the base station and also reports its own single-beam measurement capability information to the base station.

[0021] In S102, first measurement configuration information is generated for the UE according to the multi-beam measurement capability information, the first measurement configuration information including multiple beams configured for the UE by a base station.

[0022] The base station receives the multi-beam measurement capability information reported by the UE to generate the first measurement configuration information according to the multi-beam measurement capability information reported by the UE. Responsive to that the UE has a multi-beam measurement capability, the base station may configure a single-beam or multi-beam measurement capability for the UE, but responsive to that the UE has the single-beam measurement capability, the base station may configure the single-beam measurement capability for the UE only.

[0023] Since the UE has the multi-beam measurement capability, the base station may configure the multiple beams for the UE.

[0024] Optionally, the multiple beams in the first measurement configuration information may be neighboring beams, and the first measurement configuration information may further include indication information for simultaneous measurement of the neighboring beams.

[0025] In S103, the first measurement configuration information is sent to the UE such that the UE generates first measurement signals according to the multiple beams in the first measurement configuration information.

[0026] After the base station sends the first measurement configuration information including the multiple beams to the UE, the UE may generate the first meas-

urement signals according to the multiple beams in the first measurement configuration information to improve accuracy of the measurement signal. For example, corresponding measurement signals may be generated based on signal synchronization blocks of the multiple beams, the measurement signals are smoothed to obtain first measurement signals, and the first measurement signals are reported to the base station.

[0027] Optionally, responsive to that the first measurement configuration information includes the indication information for simultaneous measurement of the neighboring beams and the multiple beams are neighboring beams, the UE may simultaneously generate the first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information and report the first measurement signals to the base station.

[0028] In S104, The first measurement signals reported by the UE are received.

[0029] The base station may receive the first measurement signals reported by the UE.

[0030] According to the method, the first measurement configuration information including the multiple beams is generated for the UE according to the multi-beam measurement capability information reported by the UE, and then the UE may generate the first measurement signals according to the multiple beams in the first measurement configuration information, so that accuracy of the measurement signal of the UE in a multi-beam coverage scenario is improved.

[0031] Fig. 2 is a flow chart illustrating generation of first measurement configuration information for UE according to multi-beam measurement capability information. As illustrated in Fig. 2, the operation that the first measurement configuration information is generated may include the following steps.

[0032] In S201, second measurement configuration information is generated for the UE according to the multi-beam measurement capability information, the second measurement configuration information including a single beam configured for the UE by the base station.

[0033] Since the UE has the multi-beam measurement capability, the base station configures the single beam for the UE at first.

[0034] In S202, the second measurement configuration information is sent to the UE such that the UE generates a second measurement signal according to the single beam in the second measurement configuration information.

[0035] The base station sends the configured single beam to the UE, and the UE, after receiving the configured single beam, generates the second measurement signal according to the single beam and report the second measurement signal to the base station.

[0036] In S203, the second measurement signal reported by the UE is received.

[0037] In S204, responsive to that the received second measurement signal is inconsistent with an estimated second measurement signal, the first measurement configuration information is generated for the UE, the first measurement configuration information including the multiple beams configured for the UE by the base station.

[0038] Responsive to that the second measurement signal received by the base station is inconsistent with the estimated second measurement signal, for example, the estimated second measurement signal is within a preset threshold value range and, responsive to that the received second measurement signal is not within the preset threshold value range, it is confirmed that they are inconsistent, which indicates that the second measurement signal generated by the UE based on the single beam configured by the base station is not so accurate, the base station may reconfigure beams for the UE, for example, configuring the multiple beams for the UE.

[0039] It is to be noted that the process of generating the first measurement configuration information in Fig. 2 may be applied to S102 in Fig. 1. That is, since the UE has the multi-beam measurement capability, the base station may configure the multiple beams for the UE, and may also configure the single beam for the UE at first and, responsive to that the second measurement signal generated based on the single beam is not so accurate, reconfigure the multiple beams instead of the single beam.

[0040] According to the method, the single beam is configured for the UE at first, and then under the condition that the second measurement signal generated based on the single beam is not so accurate, the multiple beams are configured instead of the single beam, so that improvement in the accuracy of the measurement signal is facilitated.

[0041] Fig. 3 is a flow chart illustrating another measurement signal receiving method. The method is described based on the method illustrated in Fig. 1. In the method, the multiple beams may include a primary beam and at least one secondary beam, the first measurement configuration information may further include a measurement resource corresponding to the primary beam and measurement resources corresponding to the at least one secondary beam respectively, the measurement resource corresponding to the primary beam being greater than the measurement resource corresponding to each secondary beam, and the first measurement signals include first measurement signals, each of which corresponds to a respective beam,. As illustrated in Fig. 3, after S104, the method may further include the following steps.

[0042] In S301, responsive to that it is confirmed according to the first measurement signals each of which corresponds to a respective beam that the UE is at a geometric center of the multiple beams, the measurement resource corresponding to each beam is updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam.

[0043] For different numbers of beams, geometric

centers are different. For example, for two beams, the geometric center is a middle position between the two beams.

[0044] Responsive to that the multiple beams are two beams, i.e., a primary beam and a secondary beam, when the base station confirms according to first measurement signals corresponding to the two beams that the UE is at a middle position between the two beams, it is indicated that the primary beam and the secondary beam require the same measurement resource. Therefore, the measurement resource corresponding to each beam may be updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to the secondary beam.

[0045] In S302, the first measurement signals reported by the UE according to the updated measurement resources corresponding to respective beams are received.

[0046] After the base station updates the measurement resource corresponding to each beam, the UE may report the first measurement signals corresponding to each beam according to the updated measurement resources.

[0047] According to the method, after it is confirmed that the UE is at the geometric center, the measurement resource corresponding to each beam is updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam, so that the measurement resource is reasonably allocated for each beam, and the accuracy of the measurement signal may be ensured.

[0048] Fig. 4A is a flow chart illustrating another measurement signal receiving method. The method is described based on the method illustrated in Fig. 3. As illustrated in Fig. 4A, before S301, the method may further include the following steps.

[0049] In S401, a reference beam is determined according to the first measurement signals each of which corresponds to a respective beam.

[0050] A beam with high signal quality in the first measurement signals each of which corresponds to a respective beam is selected as the reference beam.

[0051] In S402, responsive to that it is confirmed that a signal of a cell where the UE is located is greater than a first preset threshold value and a signal of a neighboring cell is less than a second preset threshold value, third measurement configuration information is generated, the third measurement configuration information including the single beam configured for the UE by the base station and the single beam being the reference beam.

[0052] The first preset threshold value is greater than the second preset threshold value.

[0053] Since the UE is mobile, for improving the accuracy of the measurement signal, the single beam may be configured for the UE, and the single beam may be the reference beam.

[0054] Responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, it is indicated that the UE is still in the present cell. But responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, it is indicated that the UE may be handed over to the neighboring cell. A measurement reporting process corresponding to the condition of handover of the UE to the neighboring cell is substantially the same as a measurement reporting process for the condition that the UE is still in the present cell, and the difference is that a judgment condition is different, namely S402 may be replaced with S402', as illustrated in Fig. 4B.

[0055] In S402', responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, the third measurement configuration information is generated, the third measurement configuration information including the single beam configured for the UE by the base station and the single beam being the reference beam.

[0056] It is to be noted that, although the measurement signal reporting processes of the UE under the two conditions are the same, the reference signals are different because a beam belongs to a cell and beams of different cells are certainly different in case of handover between the cells.

[0057] In S403, the third measurement configuration information is sent to the UE such that the UE generates a third measurement signal according to the single beam in the second measurement configuration information.

[0058] In S404, the third measurement signal reported by the UE is received.

[0059] According to the method, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0060] Fig. 5A is a flow chart illustrating another measurement signal receiving method. The method is described based on the method illustrated in Fig. 1. In the method, the first measurement configuration information may further include the measurement resource corresponding to each beam, the measurement resource corresponding to the each being the same, and the first measurement signals includes the first measurement signals each of which corresponds to a respective beam. As illustrated in Fig. 5A, after S104, the method may further include the following steps.

[0061] In S501, the reference beam is determined according to the first measurement signals each of which corresponds to a respective beam.

[0062] A beam with high signal quality in the first meas-

urement signals corresponding to respective beams is selected as the reference beam.

[0063] In S502, responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, the third measurement configuration information is generated, the third measurement configuration information including the single beam configured for the UE by the base station and the single beam being the reference beam.

[0064] The first preset threshold value is greater than the second preset threshold value.

[0065] Since the UE is mobile, for improving the accuracy of the measurement signal, the single beam may be configured for the UE, and the single beam may be the reference beam.

[0066] Responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, it is indicated that the UE is still in the present cell. But responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, it is indicated that the UE may be handed over to the neighboring cell. The measurement reporting process corresponding to the condition of handover of the UE to the neighboring cell is substantially the same as the measurement reporting process for the condition that the UE is still in the present cell, and the difference is that a judgment condition is different, namely S502 may be replaced with S502', as illustrated in Fig. 5B.

[0067] In S502', responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, the third measurement configuration information is generated, the third measurement configuration information including the single beam configured for the UE by the base station and the single beam being the reference beam.

[0068] It is to be noted that, although the measurement signal reporting processes of the UE under the two conditions are the same, the reference signals are different because a beam belongs to a cell and beams of different cells are certainly different in case of handover between the cells.

[0069] In S503, the third measurement configuration information is sent to the UE such that the UE generates the third measurement signal according to the single beam in the second measurement configuration information.

[0070] In S504, the third measurement signal reported by the UE is received.

[0071] According to the method, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0072] Fig. 6 is a flow chart illustrating a measurement signal reporting method. The method is described from a UE side. As illustrated in Fig. 6, the measurement signal reporting method includes the following steps.

[0073] In S601, multi-beam measurement capability information of UE is reported to a base station.

[0074] The UE reports its own multi-beam measurement capability information to the base station.

[0075] In S602, first measurement configuration information sent by the base station according to the multi-beam measurement capability information is received, the first measurement configuration information including multiple beams configured for the UE by the base station.

[0076] The base station, after receiving the multi-beam measurement capability information reported by the UE, generates the first measurement configuration information according to the multi-beam measurement capability information reported by the UE and send the first measurement configuration information to the UE.

[0077] Optionally, the multiple beams in the first measurement configuration information may be neighboring beams, and the first measurement configuration information may further include indication information for simultaneous measurement of the neighboring beams.

[0078] In S603, first measurement signals are generated according to the multiple beams in the first measurement configuration information.

[0079] The UE generates the first measurement signals according to the multiple beams in the first measurement configuration information to improve accuracy of the measurement signal. For example, corresponding measurement signals may be generated based on signal synchronization blocks of the multiple beams, and the measurement signals are smoothed to obtain first measurement signals.

[0080] Optionally, responsive to that the first measurement configuration information includes the indication information for simultaneous measurement of the neighboring beams and the multiple beams are neighboring beams, the UE may simultaneously generate the first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information.

[0081] In S604, the first measurement signals are reported to the base station.

[0082] The UE reports the first measurement signals to the base station.

[0083] According to the method, the multi-beam measurement capability information of the UE is reported to the base station to enable the base station to send the first measurement configuration information to the UE according to the multi-beam measurement capability information reported by the UE, and the UE, after receiving the first measurement configuration information, may

generate the first measurement signals according to the multiple beams in the first measurement configuration information and reports the first measurement signals to the base station, so that the accuracy of the measurement signal of the UE in the multi-beam coverage scenario is improved.

[0084] Fig. 7A is a flow chart illustrating reception of first measurement configuration information sent by a base station according to multi-beam measurement capability information. As illustrated in Fig. 7A, the operation that the first measurement configuration information sent by the base station according to the multi-beam measurement capability information is received includes the following steps.

[0085] In S701, second measurement configuration information sent by the base station according to the multi-beam measurement capability information is received, the second measurement configuration information including a single beam configured for the UE by the base station.

[0086] Since the UE has a multi-beam measurement capability, the base station configures the single beam for the UE at first.

[0087] In S702, a second measurement signal is generated according to the single beam in the second measurement configuration information.

[0088] The UE, after receiving the configured single beam, generates the second measurement signal according to the single beam.

[0089] In S703, the second measurement signal is reported to the base station.

[0090] The UE reports the second measurement signal to the base station.

[0091] In S704, the first measurement configuration information sent by the base station according to the second measurement signal is received.

[0092] Responsive to that the second measurement signal received by the base station is inconsistent with an estimated second measurement signal, beams are reconfigured for the UE. The first measurement configuration information including the multiple beams is sent to the UE.

[0093] According to the method, the second measurement signal is generated according to the single beam in the second measurement configuration information sent by the base station and the first measurement configuration information sent by the base station according to the second measurement signal is received, to implement configuration of the multiple beams instead of the single beam under the condition that the second measurement signal generated based on the single beam is not so accurate to enable the UE to generate the first measurement signals based on the multiple beams, so that improvement in the accuracy of the measurement signal is improved.

[0094] Fig. 7B is a flow chart illustrating another measurement signal reporting method. As illustrated in Fig. 7B, the method may further include the following steps.

[0095] In S801, third measurement configuration information sent by the base station is received, the third measurement configuration information including the single beam configured for the UE by the base station.

[0096] The UE may receive the third measurement configuration information sent by the base station, the third measurement configuration information may include the single beam configured for the UE by the base station, and the single beam may be a beam with relatively measurement signal quality in the multiple beams corresponding to the UE.

[0097] In S802, a third measurement signal is generated according to the single beam in the third measurement configuration information.

[0098] The UE may generate the third measurement signal according to the single beam in the third measurement configuration information.

[0099] In S803, the third measurement signal is reported to the base station.

[0100] The UE may report the third measurement signal to the base station.

[0101] According to the method, the third measurement configuration information sent by the base station is received, the third measurement signal is generated according to the single beam in the third measurement configuration information, and the third measurement signal is reported to the base station, so that the accuracy of the measurement signal is ensured.

[0102] Fig. 8 is a block diagram of a measurement signal receiving device. As illustrated in Fig. 8, the device includes a first receiving module 81, a generation module 82, a first sending module 83 and a second receiving module 84.

[0103] The first receiving module 81 is configured to receive multi-beam measurement capability information reported by UE.

[0104] The UE reports its own multi-beam measurement capability information to the base station and also reports its own single-beam measurement capability information to the base station.

[0105] The generation module 82 is configured to generate first measurement configuration information for the UE according to the multi-beam measurement capability information received by the first receiving module 81, the first measurement configuration information including multiple beams configured for the UE by a base station.

[0106] The base station receives the multi-beam measurement capability information reported by the UE to generate the first measurement configuration information according to the multi-beam measurement capability information reported by the UE. Responsive to that the UE has a multi-beam measurement capability, the base station may configure a single-beam or multi-beam measurement capability for the UE, but responsive to that the UE has the single-beam measurement capability, the base station may configure the single-beam measurement capability for the UE only.

[0107] Since the UE has the multi-beam measurement

capability, the base station may configure the multiple beams for the UE.

[0108] Optionally, the multiple beams in the first measurement configuration information may be neighboring beams, and the first measurement configuration information may further include indication information for simultaneous measurement of the neighboring beams.

[0109] The first sending module 83 is configured to send the first measurement configuration information generated by the generation module 82 to the UE such that the UE generates first measurement signals according to the multiple beams in the first measurement configuration information.

[0110] After the base station sends the first measurement configuration information including the multiple beams to the UE, the UE may generate the first measurement signals according to the multiple beams in the first measurement configuration information to improve accuracy of the measurement signal. For example, corresponding measurement signals may be generated based on signal synchronization blocks of the multiple beams, the measurement signals are smoothed to obtain first measurement signals, and the first measurement signals are reported to the base station.

[0111] Optionally, responsive to that the first measurement configuration information includes the indication information for simultaneous measurement of the neighboring beams and the multiple beams are neighboring beams, the UE may simultaneously generate the first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information and report the first measurement signals to the base station.

[0112] The second receiving module 84 is configured to receive the first measurement signals reported by the UE and generated according to the first measurement configuration information sent by the first sending module 83.

[0113] The base station receives the first measurement signals reported by the UE.

[0114] According to the device, the first measurement configuration information including the multiple beams is generated for the UE according to the multi-beam measurement capability information reported by the UE, and then the UE may generate the first measurement signals according to the multiple beams in the first measurement configuration information, so that accuracy of the measurement signal of the UE in a multi-beam coverage scenario is improved.

[0115] Fig. 9A is a block diagram of another measurement signal receiving device. As illustrated in Fig. 9A, based on the device illustrated in Fig. 8, the generation module 82 may include a first generation submodule 821, a sending submodule 822, a receiving submodule 823 and a second generation submodule 824.

[0116] The first generation submodule 821 is configured to generate second measurement configuration information for the UE according to the multi-beam measurement capability information, the second measurement configuration information including a single beam configured for the UE by the base station.

[0117] Since the UE has the multi-beam measurement capability, the base station configures the single beam for the UE at first.

[0118] The sending submodule 822 is configured to send the second measurement configuration information generated by the first generation submodule 821 to the UE such that the UE generates a second measurement signal according to the single beam in the second measurement configuration information.

[0119] The base station sends the configured single beam to the UE, and the UE, after receiving the configured single beam, generates the second measurement signal according to the single beam and reports the second measurement signal to the base station.

[0120] The receiving submodule 823 is configured to receive the second measurement signal reported by the UE and generated according to the second measurement configuration information sent by the sending submodule 822.

[0121] The second generation submodule 824 is configured to, responsive to that the second measurement signal received by the receiving submodule 823 is inconsistent with an estimated second measurement signal, generate the first measurement configuration information for the UE, the first measurement configuration information including the multiple beams configured for the UE by the base station.

[0122] Responsive to that the second measurement signal received by the base station is inconsistent with an estimated second measurement signal, for example, the estimated second measurement signal is within a preset threshold value range and, responsive to that the received second measurement signal is not within the preset threshold value range, it is confirmed that they are inconsistent, which indicates that the second measurement signal generated by the UE based on the single beam configured by the base station is not so accurate, the base station may reconfigure beams for the UE, for example, configuring the multiple beams for the UE.

[0123] According to the device, the single beam is configured for the UE at first, and then under the condition that the second measurement signal generated based on the single beam is not so accurate, the multiple beams are configured instead of the single beam, so that improvement in the accuracy of the measurement signal is facilitated.

[0124] Fig. 9B is a block diagram of another measurement signal receiving device. Based on the device illustrated in Fig. 8, the multiple beams includes a primary beam and at least one secondary beam, the first measurement configuration information further includes a measurement resource corresponding to the primary beam and measurement resources corresponding to the at least one secondary beam respectively, the measurement resource corresponding to the primary beam being

greater than the measurement resource corresponding to each secondary beam, and the first measurement signals include first measurement signals, each of which corresponds to a respective beam,. As illustrated in Fig. 9B, the device may further include a confirmation and updating module 85 and a third receiving module 86.

[0125] The confirmation and updating module 85 is configured to, after the second receiving module 84 receives the first measurement signals reported by the UE, responsive to that it is confirmed according to the first measurement signals each of which corresponds to a respective beam that the UE is at a geometric center of the multiple beams, update the measurement resource corresponding to each beam to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam.

[0126] For different numbers of beams, geometric centers are different. For example, for two beams, the geometric center is a middle position between the two beams.

[0127] Responsive to that the multiple beams are two beams, i.e., a primary beam and a secondary beam, when the base station confirms according to first measurement signals corresponding to the two beams that the UE is at a middle position between the two beams, it is indicated that the primary beam and the secondary beam require the same measurement resource. Therefore, the measurement resource corresponding to each beam may be updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to the secondary beam.

[0128] The third receiving module 86 is configured to receive the first measurement signals reported by the UE according to the measurement resources updated by the confirmation and updating module 85 and corresponding to each beam.

[0129] After the base station updates the measurement resource corresponding to each beam, the UE may report the first measurement signals corresponding to each beam according to the updated measurement resources.

[0130] According to the device, after it is confirmed that the UE is at the geometric center, the measurement resource corresponding to each beam is updated to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam, so that the measurement resource is reasonably allocated for each beam, and the accuracy of the measurement signal may be ensured.

[0131] Fig. 9C is a block diagram of another measurement signal receiving device. As illustrated in Fig. 9C, based on the device illustrated in Fig. 9B, the device further includes a first determination module 87, a first confirmation and generation module 88, a second sending module 89 and a fourth receiving module 90.

[0132] The first determination module 87 is configured to, before the confirmation and updating module 85 updates the measurement resource corresponding to each beam, determine a reference beam according to the first measurement signals each of which corresponds to a respective beam.

[0133] A beam with high signal quality in the first measurement signals corresponding to respective beams is selected as the reference beam.

[0134] The first confirmation and generation module 88 is configured to, responsive to that it is confirmed that a signal of a cell where the UE is located is greater than a first preset threshold value and a signal of a neighboring cell is less than a second preset threshold value, generate third measurement configuration information, the third measurement configuration information including the single beam configured for the UE by the base station, the single beam being the reference beam determined by the first determination module 87 and the first preset threshold value being greater than the second preset threshold value.

[0135] The first preset threshold value is greater than the second preset threshold value.

[0136] Since the UE is mobile, for improving the accuracy of the measurement signal, the single beam may be configured for the UE, and the single beam may be the reference beam.

[0137] Responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, it is indicated that the UE is still in the present cell.

[0138] The second sending module 89 is configured to send the third measurement configuration information generated by the first confirmation and generation module 88 to the UE such that the UE generates a third measurement signal according to the single beam in the third measurement configuration information.

[0139] The fourth receiving module 90 is configured to receive the third measurement signal reported by the UE and generated according to the third measurement configuration information sent by the second sending module 89.

[0140] According to the device, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0141] Fig. 9D is a block diagram of another measurement signal receiving device. As illustrated in Fig. 9D, based on the device illustrated in Fig. 9B, the device further includes a second determination module 91, a second confirmation and generation module 92, a third sending module 93 and a fifth receiving module 94.

[0142] The second determination module 91 is configured to, before the confirmation and updating module updates the measurement resource corresponding to each beam, determine the reference beam according to the first measurement signals each of which corresponds

to a respective beam.

[0143] The second confirmation and generation module 92 is configured to, responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, generate the third measurement configuration information, the third measurement configuration information including the single beam configured for the UE by the base station, the single beam being the reference beam determined by the second determination module 91 and the first preset threshold value being greater than the second preset threshold value.

[0144] But responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, it is indicated that the UE may be handed over to the neighboring cell. A measurement reporting process corresponding to the condition of handover of the UE to the neighboring cell is substantially the same as a measurement reporting process for the condition that the UE is still in the present cell.

[0145] The third sending module 93 is configured to send the third measurement configuration information generated by the second confirmation and generation module 92 to the UE such that the UE generates the third measurement signal according to the single beam in the third measurement configuration information.

[0146] The fifth receiving module 94 is configured to receive the third measurement signal reported by the UE and generated according to the third measurement configuration information sent by the third sending module 93.

[0147] According to the device, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0148] Fig. 9E is a block diagram of another measurement signal receiving device. Based on the device illustrated in Fig. 8, the first measurement configuration information further includes the measurement resource corresponding to each beam, the measurement resource corresponding to each beam being the same, and the first measurement signals include the first measurement signals each of which corresponds to a respective beam. As illustrated in Fig. 9E, the device may further include a third determination module 95, a third confirmation and generation module 96, a fourth sending module 97 and a sixth receiving module 98.

[0149] The third determination module 95 is configured to, after the second receiving module 84 receives the first measurement signals reported by the UE, determine the reference beam according to the first measurement signals each of which corresponds to a respective beam.

[0150] The third confirmation and generation module 96 is configured to, responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, generate the third measurement configuration information, the third measurement configuration information including the single beam configured for the UE by the base station, the single beam being the reference beam determined by the third determination module 95 and the first preset threshold value being greater than the second preset threshold value.

[0151] The fourth sending module 97 is configured to send the third measurement configuration information generated by the third confirmation and generation module 96 to the UE such that the UE generates the third measurement signal according to the single beam in the third measurement configuration information.

[0152] The sixth receiving module 98 is configured to receive the third measurement signal reported by the UE and generated according to the third measurement configuration information sent by the fourth sending module 97.

[0153] According to the device, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0154] Fig. 9F is a block diagram of another measurement signal receiving device. Based on the device illustrated in Fig. 8, the first measurement configuration information further includes the measurement resource corresponding to each beam, the measurement resource corresponding to each beam being the same, and the first measurement signals include the first measurement signals each of which corresponds to a respective beam. As illustrated in Fig. 9F, the device may further include a fourth determination module 99, a fourth confirmation and generation module 100, a fifth sending module 101 and a seventh receiving module 102.

[0155] The fourth determination module 99 is configured to, after the second receiving module 84 receives the first measurement signals reported by the UE, determine the reference beam according to the first measurement signals each of which corresponds to a respective beam.

[0156] The fourth confirmation and generation module 100 is configured to, responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, generate the third measurement configuration information, the third measurement configuration information including the single beam configured for the UE by the base station, the single beam being the reference beam determined by the fourth determination module 99 and the first preset threshold value being greater than the second preset threshold value.

[0157] The fifth sending module 101 is configured to send the third measurement configuration information generated by the fourth confirmation and generation module 100 to the UE such that the UE generates the third measurement signal according to the single beam in the third measurement configuration information.

[0158] The seventh receiving module 102 is configured to receive the third measurement signal reported by the UE and generated according to the third measurement configuration information sent by the fifth sending module 101.

[0159] According to the device, the reference beam is determined, the single beam is configured for the UE, and the single beam is the determined reference beam, so that the UE may generate the third measurement signal according to the configured reference beam, and the accuracy of the measurement signal is improved.

[0160] Fig. 10 is a block diagram of a measurement signal reporting device. As illustrated in Fig. 10, the measurement signal reporting device includes a first reporting module 110, a first receiving module 120, a first generation module 130 and a second reporting module 140.

[0161] The first reporting module 110 is configured to report multi-beam measurement capability information of UE to a base station.

[0162] The UE reports its own multi-beam measurement capability information to the base station.

[0163] The first receiving module 120 is configured to receive first measurement configuration information sent by the base station according to the multi-beam measurement capability information reported by the first reporting module 110, the first measurement configuration information including multiple beams configured for the UE by the base station;

[0164] The base station, after receiving the multi-beam measurement capability information reported by the UE, generates the first measurement configuration information according to the multi-beam measurement capability information reported by the UE and send the first measurement configuration information to the UE.

[0165] Optionally, the multiple beams in the first measurement configuration information may be neighboring beams, and the first measurement configuration information may further include indication information for simultaneous measurement of the neighboring beams.

[0166] The first generation module 130 is configured to generate first measurement signals according to the multiple beams in the first measurement configuration information received by the first receiving module 120.

[0167] The UE generates the first measurement signals according to the multiple beams in the first measurement configuration information to improve accuracy of the measurement signal. For example, corresponding measurement signals may be generated based on signal synchronization blocks of the multiple beams, and the measurement signals are smoothed to obtain first measurement signals.

[0168] Optionally, responsive to that the first measurement configuration information includes the indication information for simultaneous measurement of the neighboring beams and the multiple beams are neighboring beams, the UE may simultaneously generate the first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information.

[0169] The second reporting module 140 is configured to report the first measurement signals generated by the first generation module 130 to the base station.

[0170] The UE reports the first measurement signals to the base station.

[0171] According to the device, the multi-beam measurement capability information of the UE is reported to the base station to enable the base station to send the first measurement configuration information to the UE according to the multi-beam measurement capability information reported by the UE, and the UE, after receiving the first measurement configuration information, may generate the first measurement signals according to the multiple beams in the first measurement configuration information and reports the first measurement signals to the base station, so that the accuracy of the measurement signal of the UE in the multi-beam coverage scenario is improved.

[0172] Fig. 11A is a block diagram of another measurement signal reporting device. As illustrated in Fig. 11A, based on the device illustrated in Fig. 10, the first receiving module 120 may include a first receiving submodule 1201, a generation submodule 1202, a reporting submodule 1203 and a second receiving submodule 1204.

[0173] The first receiving submodule 1201 is configured to receive second measurement configuration information sent by the base station according to the multi-beam measurement capability information, the second measurement configuration information including a single beam configured for the UE by the base station.

[0174] Since the UE has a multi-beam measurement capability, the base station may configure the single beam for the UE at first.

[0175] The generation submodule 1202 is configured to generate a second measurement signal according to the single beam in the second measurement configuration information received by the first receiving submodule 1201.

[0176] The UE, after receiving the configured single beam, may generate the second measurement signal according to the single beam.

[0177] The reporting submodule 1203 is configured to report the second measurement signal generated by the generation submodule 1202 to the base station.

[0178] The UE may report the second measurement signal to the base station.

[0179] The second receiving submodule 1204 is configured to receive the first measurement configuration information sent by the base station according to the second measurement signal reported by the reporting sub-

module 1203.

[0180] Responsive to that the second measurement signal received by the base station is inconsistent with an estimated second measurement signal, beams may be reconfigured for the UE, for example, the first measurement configuration information including the multiple beams may be sent to the UE.

[0181] According to the device, the second measurement signal is generated according to the single beam in the second measurement configuration information sent by the base station and the first measurement configuration information sent by the base station according to the second measurement signal is received, to implement configuration of the multiple beams instead of the single beam under the condition that the second measurement signal generated based on the single beam is not so accurate to enable the UE to generate the first measurement signals based on the multiple beams, so that improvement in the accuracy of the measurement signal is improved.

[0182] Fig. 11B is a block diagram of another measurement signal reporting device. As illustrated in Fig. 11B, based on the device illustrated in Fig. 10, the device may further include a second receiving module 150, a second generation module 160 and a third reporting module 170.

[0183] The second receiving module 150 is configured to receive third measurement configuration information sent by the base station, the third measurement configuration information including the single beam configured for the UE by the base station.

[0184] The UE may receive the third measurement configuration information sent by the base station, the third measurement configuration information may include the single beam configured for the UE by the base station, and the single beam may be a beam with relatively measurement signal quality in the multiple beams corresponding to the UE.

[0185] The second generation module 160 is configured to generate a third measurement signal according to the single beam in the third measurement configuration information received by the second receiving module 150.

[0186] The UE may generate the third measurement signal according to the single beam in the third measurement configuration information.

[0187] The third reporting module 170 is configured to report the third measurement signal generated by the second generation module 160 to the base station.

[0188] The UE may report the third measurement signal to the base station.

[0189] According to the device, the third measurement configuration information sent by the base station is received, the third measurement signal is generated according to the single beam in the third measurement configuration information, and the third measurement signal is reported to the base station, so that the accuracy of the measurement signal is ensured.

[0190] Fig. 12 is a block diagram of a measurement signal receiving device. The device 1200 may be provided as a base station. Referring to Fig. 12, the device 1200 includes a processing component 1222, a wireless transmission/receiving component 1224, an antenna component 1226 and a wireless interface-specific signal processing part, and the processing component 1222 may further include one or more processors.

[0191] One processor in the processing component 1222 may be configured to:

receive multi-beam measurement capability information reported by UE;

generate first measurement configuration information for the UE according to the multi-beam measurement capability information, the first measurement configuration information including multiple beams configured for the UE by a base station;

send the first measurement configuration information to the UE such that the UE generates first measurement signals according to the multiple beams in the first measurement configuration information; and

receive the first measurement signals reported by the UE.

[0192] Fig. 13 is a block diagram of a measurement signal reporting device. For example, the device 1300 may be UE such as a mobile phone, a computer, a digital broadcast terminal, a messaging device, a gaming console, a tablet, a medical device, exercise equipment and a personal digital assistant.

[0193] Referring to Fig. 13, the device 1300 may include one or more of the following components: a processing component 1302, a memory 1304, a power component 1306, a multimedia component 1308, an audio component 1310, an Input/Output (I/O) interface 1312, a sensor component 1314, and a communication component 1316.

[0194] The processing component 1302 typically controls overall operations of the device 1300, such as the operations associated with display, telephone calls, data communications, camera operations, and recording operations. The processing component 1302 may include one or more processors 1320 to execute instructions to perform all or part of the steps in the abovementioned method. Moreover, the processing component 1302 may include one or more modules which facilitate interaction between the processing component 1302 and the other components. For instance, the processing component 1302 may include a multimedia module to facilitate interaction between the multimedia component 1308 and the processing component 1302.

[0195] The memory 1304 is configured to store various types of data to support the operation of the device 1300. Examples of such data include instructions for any application programs or methods operated on the device 1300, contact data, phonebook data, messages, pictures, video, etc. The memory 1304 may be implemented

by any type of volatile or non-volatile memory devices, or a combination thereof, such as a Static Random Access Memory (SRAM), an Electrically Erasable Programmable Read-Only Memory (EEPROM), an Erasable Programmable Read-Only Memory (EPROM), a Programmable Read-Only Memory (PROM), a Read-Only Memory (ROM), a magnetic memory, a flash memory, and a magnetic or optical disk.

[0196] The power component 1306 provides power for various components of the device 1300. The power component 1306 may include a power management system, one or more power supplies, and other components associated with generation, management and distribution of power for the device 1300.

[0197] The multimedia component 1308 includes a screen providing an output interface between the device 1300 and a user. In some embodiments, the screen may include a Liquid Crystal Display (LCD) and a Touch Panel (TP). Responsive to that the screen includes the TP, the screen may be implemented as a touch screen to receive an input signal from the user. The TP includes one or more touch sensors to sense touches, swipes and gestures on the TP. The touch sensors may not only sense a boundary of a touch or swipe action but also detect a duration and pressure associated with the touch or swipe action. In some embodiments, the multimedia component 1308 includes a front camera and/or a rear camera. The front camera and/or the rear camera may receive external multimedia data when the device 1300 is in an operation mode, such as a photographing mode or a video mode. Each of the front camera and the rear camera may be a fixed optical lens system or have focusing and optical zooming capabilities.

[0198] The audio component 1310 is configured to output and/or input an audio signal. For example, the audio component 1310 includes a Microphone (MIC), and the MIC is configured to receive an external audio signal when the device 1300 is in the operation mode, such as a call mode, a recording mode and a voice recognition mode. The received audio signal may further be stored in the memory 1304 or sent through the communication component 1316. In some embodiments, the audio component 1310 further includes a speaker configured to output the audio signal.

[0199] The I/O interface 1312 provides an interface between the processing component 1302 and a peripheral interface module, and the peripheral interface module may be a keyboard, a click wheel, a button and the like. The button may include, but not limited to: a home button, a volume button, a starting button and a locking button.

[0200] The sensor component 1314 includes one or more sensors configured to provide status assessment in various aspects for the device 1300. For instance, the sensor component 1314 may detect an on/off status of the device 1300 and relative positioning of components, such as a display and small keyboard of the device 1300, and the sensor component 1314 may further detect a change in a position of the device 1300 or a component of the device 1300, presence or absence of contact between the user and the device 1300, orientation or acceleration/deceleration of the device 1300 and a change in temperature of the device 1300. The sensor component 1314 may include a proximity sensor configured to detect presence of an object nearby without any physical contact. The sensor component 1314 may also include a light sensor, such as a Complementary Metal Oxide Semiconductor (CMOS) or Charge Coupled Device (CCD) image sensor, configured for use in an imaging application. In some embodiments, the sensor component 1314 may also include an acceleration sensor, a gyroscope sensor, a magnetic sensor, a pressure sensor or a temperature sensor.

[0201] The communication component 1316 is configured to facilitate wired or wireless communication between the device 1300 and other equipment. The device 1300 may access a communication-standard-based wireless network, such as a Wireless Fidelity (WiFi) network, a 2nd-Generation (2G) or 3rd-Generation (3G) network or a combination thereof. In an exemplary embodiment, the communication component 1316 receives a broadcast signal or broadcast associated information from an external broadcast management system through a broadcast channel. In an exemplary embodiment, the communication component 1316 further includes a Near Field Communication (NFC) module to facilitate short-range communication. For example, the NFC module may be implemented based on a Radio Frequency Identification (RFID) technology, an Infrared Data Association (IrDA) technology, an Ultra-WideBand (UWB) technology, a Bluetooth (BT) technology and another technology.

[0202] In an exemplary embodiment, the device 1300 may be implemented by one or more Application Specific Integrated Circuits (ASICs), Digital Signal Processors (DSPs), Digital Signal Processing Devices (DSPDs), Programmable Logic Devices (PLDs), Field Programmable Gate Arrays (FPGAs), controllers, micro-controllers, microprocessors or other electronic components, and is configured to execute the abovementioned method.

[0203] In an exemplary embodiment, there is also provided a non-transitory computer-readable storage medium including an instruction, such as the memory 1304 including an instruction, and the instruction may be executed by the processor 1320 of the device 1300 to implement the abovementioned method. For example, the non-transitory computer-readable storage medium may be a ROM, a Random Access Memory (RAM), a Compact Disc Read-Only Memory (CD-ROM), a magnetic tape, a floppy disc, optical data storage equipment and the like.

[0204] The device embodiments substantially correspond to the method embodiments, and thus related parts refer to part of descriptions of the method embodiments. The device embodiments described above are only schematic, units described as separate parts therein may or may not be physically separated, and parts displayed as units may or may not be physical units, and namely may be located in the same place or may also

be distributed to multiple network units. Part or all of the modules therein may be selected according to a practical requirement to achieve the purpose of the solutions of the embodiments. Those of ordinary skill in the art may understand and implement without creative work.

[0205] It is to be noted that relational terms "first", "second" and the like in the present disclosure are adopted only to distinguish one entity or operation from another entity or operation and not always to require or imply existence of any such practical relationship or sequence between the entities or operations. Terms "include" and "have" or any other variation thereof is intended to cover nonexclusive inclusions, so that a process, method, object or device including a series of elements not only includes those elements, but also includes other elements that are not clearly listed, or further includes elements intrinsic to the process, the method, the object or the device. Under the condition of no more limitations, an element defined by statement "including a/an....." does not exclude existence of another element that is the same in a process, method, object or device including the element.

[0206] The method and device provided in the embodiments of the present disclosure are introduced above in detail. The principle and implementation modes of the present disclosure are elaborated in the specification with specific examples. The embodiments are described above only to help the method of the present disclosure and the core concept thereof to be understood. In addition, those of ordinary skill in the art may make variations to the specific implementation modes and the scope of disclosure according to the concept of the present disclosure. To sum up, the contents of the specification should not be understood as limits to the present disclosure.

Claims

1. A method for measurement signal receiving, the method comprising:

   receiving (S101) multi-beam measurement capability information reported by User Equipment, UE, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
   generating (S102) first measurement configuration information for the UE according to the multi-beam measurement capability information, the first measurement configuration information comprising multiple beams configured for the UE by a base station;
   sending (S103) the first measurement configuration information to the UE such that the UE generates first measurement signals according to the multiple beams in the first measurement configuration information; and
   receiving (S104) the first measurement signals reported by the UE;
   the method **characterised in that** generating the first measurement configuration information for the UE according to the multi-beam measurement capability information comprises:

   generating second measurement configuration information for the UE according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the UE by the base station;
   sending the second measurement configuration information to the UE such that the UE generates a second measurement signal according to the single beam in the second measurement configuration information;
   receiving the second measurement signal reported by the UE; and
   responsive to that the received second measurement signal is inconsistent with an estimated second measurement signal, generating the first measurement configuration information for the UE, the first measurement configuration information comprising the multiple beams configured for the UE by the base station.

2. The method of claim 1, wherein the multiple beams comprise a primary beam and at least one secondary beam, the first measurement configuration information further comprises a measurement resource corresponding to the primary beam and measurement resources corresponding to the at least one secondary beam respectively, the measurement resource corresponding to the primary beam being greater than the measurement resource corresponding to each secondary beam, the first measurement signals comprise first measurement signals each of which corresponds to a respective beam, and
   after receiving the first measurement signals reported by the UE, the method further comprises:

   responsive to that it is confirmed according to the first measurement signals each of which corresponds to a respective beam that the UE is at a geometric center of the multiple beams, updating the measurement resource corresponding to each beam to make the measurement resource corresponding to the primary beam equal to the measurement resource corresponding to each secondary beam; and
   receiving the first measurement signals reported by the UE according to the updated measure-

ment resources and corresponding to each beam.

3. The method of claim 2, before updating the measurement resource corresponding to each beam, further comprising:

determining a reference beam according to the first measurement signals each of which corresponds to a respective beam;
responsive to that it is confirmed that a signal of a cell where the UE is located is greater than a first preset threshold value and a signal of a neighboring cell is less than a second preset threshold value, generating third measurement configuration information, the third measurement configuration information comprising the single beam configured for the UE by the base station, the single beam being the reference beam and the first preset threshold value being greater than the second preset threshold value;
sending the third measurement configuration information to the UE such that the UE generates a third measurement signal according to the single beam in the third measurement configuration information; and
receiving the third measurement signal reported by the UE.

4. The method of claim 2, before updating the measurement resource corresponding to each beam, further comprising:

determining the reference beam according to the first measurement signals each of which corresponds to a respective beam;
responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, generating the third measurement configuration information, the third measurement configuration information comprising the single beam configured for the UE by the base station, the single beam being the reference beam and the first preset threshold value being greater than the second preset threshold value;
sending the third measurement configuration information to the UE such that the UE generates the third measurement signal according to the single beam in the third measurement configuration information; and
receiving the third measurement signal reported by the UE.

5. The method of claim 1, wherein the first measurement configuration information further comprises the measurement resource corresponding to each beam, the measurement resource corresponding to each beam being the same, the first measurement signals comprise first measurement signals each of which corresponds to a respective beam, and
after receiving the first measurement signals reported by the UE, the method further comprises:

determining the reference beam according to the first measurement signals each of which corresponds to a respective beam;
responsive to that it is confirmed that a signal of a cell where the UE is located is greater than the first preset threshold value and a signal of a neighboring cell is less than the second preset threshold value, generating the third measurement configuration information, the third measurement configuration information comprising the single beam configured for the UE by the base station, the single beam being the reference beam and the first preset threshold value being greater than the second preset threshold value;
sending the third measurement configuration information to the UE such that the UE generates the third measurement signal according to the single beam in the third measurement configuration information; and
receiving the third measurement signal reported by the UE.

6. The method of claim 1, wherein the first measurement configuration information further comprises the measurement resource corresponding to each beam, the measurement resource corresponding to each beam being the same, the first measurement signals comprise first measurement signals each of which corresponds to a respective beam, and
after receiving the first measurement signals reported by the UE, the method further comprises:

determining the reference beam according to the first measurement signals each of which corresponds to a respective beam;
responsive to that it is confirmed that a signal of a cell where the UE is located is less than the first preset threshold value and a signal of a neighboring cell is greater than the second preset threshold value, generating the third measurement configuration information, the third measurement configuration information comprising the single beam configured for the UE by the base station, the single beam being the reference beam and the first preset threshold value being greater than the second preset threshold value;
sending the third measurement configuration information to the UE such that the UE generates

the third measurement signal according to the single beam in the third measurement configuration information; and
receiving the third measurement signal reported by the UE.

7. The method of claim 1, wherein the multiple beams in the first measurement configuration information comprise neighboring beams, the first measurement configuration information further comprises indication information for simultaneous measurement of the neighboring beams, and the first measurement configuration information is configured for the UE to simultaneously generate the first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information.

8. A method for measurement signal reporting, the method comprising:

reporting (S601) multi-beam measurement capability information of User Equipment, UE, to a base station, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
receiving (S602) first measurement configuration information sent by the base station according to the multi-beam measurement capability information, the first measurement configuration information comprising multiple beams configured for the UE by the base station;
generating (S603) first measurement signals according to the multiple beams in the first measurement configuration information; and
reporting (S604) the first measurement signals to the base station;
the method **characterised in that** receiving the first measurement configuration information sent by the base station according to the multi-beam measurement capability information comprises:

receiving second measurement configuration information sent by the base station according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the UE by the base station;
generating a second measurement signal according to the single beam in the second measurement configuration information;
reporting the second measurement signal to the base station; and
receiving the first measurement configuration information sent by the base station according to the second measurement signal.

9. The method of claim 8, further comprising:

receiving third measurement configuration information sent by the base station, the third measurement configuration information comprising the single beam configured for the UE by the base station;
generating a third measurement signal according to the single beam in the third measurement configuration information; and
reporting the third measurement signal to the base station.

10. The method of claim 8, wherein the multiple beams in the first measurement configuration information comprise neighboring beams, the first measurement configuration information further comprises indication information for simultaneous measurement of the neighboring beams, and generating the first measurement signals according to the multiple beams in the first measurement configuration information comprises:
simultaneously generating first measurement signals, each of which corresponds to a respective beam, according to the neighboring beams and the indication information.

11. A device for measurement signal receiving, comprising:

a first receiving module, configured to receive multi-beam measurement capability information reported by present User Equipment, UE, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
a generation module, configured to generate first measurement configuration information for the present UE according to the multi-beam measurement capability information received by the first receiving module, the first measurement configuration information comprising multiple beams configured for the present UE by a present base station;
a first sending module, configured to send the first measurement configuration information generated by the generation module to the present UE such that the present UE generates first measurement signals according to the multiple beams in the first measurement configuration information; and
a second receiving module, configured to receive the first measurement signals reported by the present UE and generated according to the first measurement configuration information

sent by the first sending module;
the device **characterised in that** the generation module comprises:

a first generation submodule, configured to generate second measurement configuration information for the present UE according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the present UE by the present base station;
a sending submodule, configured to send the second measurement configuration information generated by the first generation submodule to the present UE such that the UE generates a second measurement signal according to the single beam in the second measurement configuration information;
a receiving submodule, configured to receive the second measurement signal reported by the present UE and generated according to the second measurement configuration information sent by the sending submodule; and
a second generation submodule, configured to, responsive to that the second measurement signal received by the receiving submodule is inconsistent with an estimated second measurement signal, generate the first measurement configuration information for the present UE, the first measurement configuration information comprising the multiple beams configured for the present UE by the present base station.

12. A device for measurement signal reporting, comprising:

a first reporting module, configured to report multi-beam measurement capability information of present User Equipment, UE, to a base station, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
a first receiving module, configured to receive first measurement configuration information sent by the base station according to the multi-beam measurement capability information reported by the first reporting module, the first measurement configuration information comprising multiple beams configured for the present UE by the present base station;
a first generation module, configured to generate first measurement signals according to the multiple beams in the first measurement configuration information received by the first receiving module; and
a second reporting module, configured to report the first measurement signals generated by the first generation module to the base station;
the device **characterised in that** the first receiving module comprises:

a first receiving submodule, configured to receive second measurement configuration information sent by the base station according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the present UE by the present base station;
a generation submodule, configured to generate a second measurement signal according to the single beam in the second measurement configuration information received by the first receiving submodule;
a reporting submodule, configured to report the second measurement signal generated by the generation submodule to the base station; and
a second receiving submodule, configured to receive the first measurement configuration information, which is sent by the base station according to the second measurement signal reported by the reporting submodule.

13. A computer-readable storage medium having stored thereon a computer program that, when being executed by a processor, implements the operations of:

receiving (S101) multi-beam measurement capability information reported by User Equipment, UE, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
generating (S102) first measurement configuration information for the UE according to the multi-beam measurement capability information, the first measurement configuration information comprising multiple beams configured for the UE by a base station;
sending (S103) the first measurement configuration information to the UE such that the UE generates first measurement signals according to the multiple beams in the first measurement configuration information; and
receiving (S104) the first measurement signals reported by the UE;
characterised in that generating the first measurement configuration information for the UE according to the multi-beam measurement capa-

bility information comprises:

generating second measurement configuration information for the UE according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the UE by the base station;
sending the second measurement configuration information to the UE such that the UE generates a second measurement signal according to the single beam in the second measurement configuration information;
receiving the second measurement signal reported by the UE; and
responsive to that the received second measurement signal is inconsistent with an estimated second measurement signal, generating the first measurement configuration information for the UE, the first measurement configuration information comprising the multiple beams configured for the UE by the base station.

14. A computer-readable storage medium having stored thereon a computer program that, when being executed by a processor, implements the operations of:

reporting (S601) multi-beam measurement capability information of User Equipment, UE, to a base station, the multi-beam measurement capability information being configured to indicate that the UE has capability of performing measurement based on multiple beams;
receiving (S602) first measurement configuration information sent by the base station according to the multi-beam measurement capability information, the first measurement configuration information comprising multiple beams configured for the UE by the base station;
generating (S603) first measurement signals according to the multiple beams in the first measurement configuration information; and
reporting (S604) the first measurement signals to the base station;
characterised in that receiving the first measurement configuration information sent by the base station according to the multi-beam measurement capability information comprises:

receiving second measurement configuration information sent by the base station according to the multi-beam measurement capability information, the second measurement configuration information comprising a single beam configured for the UE by the base station;
generating a second measurement signal according to the single beam in the second measurement configuration information;
reporting the second measurement signal to the base station; and
receiving the first measurement configuration information sent by the base station according to the second measurement signal.

Patentansprüche

1. Messsignalempfangsverfahren, wobei das Verfahren umfasst:

Empfangen (S101) von Informationen zur Mehrfachstrahlmessfähigkeit, die von einem Benutzergerät, UE, gemeldet werden, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;
Erzeugen (S102) von ersten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden;
Senden (S103) der ersten Messkonfigurationsinformationen an das UE, sodass das UE erste Messsignale gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen erzeugt; und
Empfangen (S104) der ersten Messsignale, die von dem UE gemeldet werden;
wobei das Verfahren **dadurch gekennzeichnet ist, dass** das Erzeugen der ersten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit umfasst:

Erzeugen von zweiten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit, wobei die zweiten Messkonfigurationsinformationen einen einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird;
Senden der zweiten Messkonfigurationsinformationen an das UE, sodass das UE ein zweites Messsignal gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen erzeugt;
Empfangen des zweiten Messsignals, das von der UE gemeldet wird; und
als Reaktion darauf, dass das empfangene zweite Messsignal mit einem geschätzten

zweiten Messsignal inkonsistent ist, Erzeugen der ersten Messkonfigurationsinformationen für das UE, wobei die ersten Messkonfigurationsinformationen die mehreren Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden.

2. Verfahren nach Anspruch 1, wobei die mehreren Strahlen einen primären Strahl und mindestens einen sekundären Strahl umfassen, die ersten Messkonfigurationsinformationen weiter jeweils eine Messressource, die dem primären Strahl entspricht, und Messressourcen, die dem mindestens einen sekundären Strahl entsprechen, umfassen, wobei die Messressource, die dem primären Strahl entspricht, größer ist als die Messressource, die jedem sekundären Strahl entspricht, wobei die ersten Messsignale erste Messsignale umfassen, von denen jedes einem jeweiligen Strahl entspricht, und
nach Empfangen der ersten Messsignale, die von dem UE gemeldet werden, das Verfahren weiter umfasst:

als Reaktion darauf, dass gemäß den ersten Messsignalen, von den jedes einem jeweiligen Strahl entspricht, bestätigt wird, dass das UE an einem geometrischen Mittelpunkt der mehreren Strahlen ist, Aktualisieren der Messressource, die jedem Strahl entspricht, dahin, dass die Messressource, die dem primären Strahl entspricht, gleich der Messressource, die jedem sekundären Strahl entspricht, gemacht wird; und
Empfangen der ersten Messsignale, die von dem UE gemäß den aktualisierten Messressourcen und entsprechend jedem Strahl gemeldet werden.

3. Verfahren nach Anspruch 2, weiter umfassend vor Aktualisieren der Messressource, die jedem Strahl entspricht:

Bestimmen eines Referenzstrahls gemäß den ersten Messsignalen, von denen jedes einem jeweiligen Strahl entspricht;
als Reaktion darauf, dass bestätigt wird, dass ein Signal einer Zelle, in der sich das UE befindet, größer ist als ein erster voreingestellter Schwellenwert und ein Signal einer benachbarten Zelle geringer ist als ein zweiter voreingestellter Schwellenwert, Erzeugen von dritten Messkonfigurationsinformationen, wobei die dritte Messkonfigurationsinformationen den einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird, wobei der einzelne Strahl der Referenzstrahl ist und der erste voreingestellte Schwellenwert größer ist als der zweite voreingestellte Schwellenwert;
Senden der dritten Messkonfigurationsinformationen an das UE, sodass das UE ein drittes Messsignal gemäß dem einzelnen Strahl in den dritten Messkonfigurationsinformationen erzeugt; und
Empfangen des dritten Messsignals, das von dem UE gemeldet wird.

4. Verfahren nach Anspruch 2, weiter umfassend vor Aktualisieren der Messressource, die jedem Strahl entspricht:

Bestimmen des Referenzstrahls gemäß den ersten Messsignalen, von denen jedes einem jeweiligen Strahl entspricht;
als Reaktion darauf, dass bestätigt wird, dass ein Signal einer Zelle, in der sich das UE befindet, geringer ist als der erste voreingestellte Schwellenwert und ein Signal einer benachbarten Zelle größer ist als der zweite voreingestellte Wert, Erzeugen der dritten Messkonfigurationsinformationen, wobei die dritten Messkonfigurationsinformationen den einzelnen Strahl, der von der Basisstation für das UE konfiguriert wird, umfassen, wobei der einzelne Strahl der Referenzstrahl ist und der erste voreingestellte Schwellenwert größer ist als der zweite voreingestellte Schwellenwert;
Senden der dritten Messkonfigurationsinformationen an das UE, sodass das UE das dritte Messsignal gemäß dem einzelnen Strahl in den dritten Messkonfigurationsinformationen erzeugt; und
Empfangen des dritten Messsignals, das von dem UE gemeldet wird.

5. Verfahren nach Anspruch 1, wobei die ersten Messkonfigurationsinformationen weiter die Messressource, die jedem Strahl entspricht, umfassen, wobei die Messressource, die jedem Strahl entspricht, die gleiche ist, die ersten Messsignale erste Messsignale umfassen, von denen jedes einem jeweiligen Strahl entspricht, und
nach Empfangen der ersten Messsignale, die von dem UE gemeldet werden, das Verfahren weiter umfasst:

Bestimmen des Referenzstrahls gemäß den ersten Messsignalen, von denen jedes einem jeweiligen Strahl entspricht;
als Reaktion darauf, dass bestätigt wird, dass ein Signal einer Zelle, in der sich das UE befindet, größer ist als der erste voreingestellte Schwellenwert und ein Signal einer benachbarten Zelle geringer ist als der zweite voreingestellte Wert, Erzeugen der dritten Messkonfigurationsinformationen, wobei die dritten Messkonfigurationsinformationen den einzelnen Strahl, der von der Basisstation für das UE kon-

figuriert wird, umfassen, wobei der einzelne Strahl der Referenzstrahl ist und der erste voreingestellte Schwellenwert größer ist als der zweite voreingestellte Schwellenwert;

Senden der dritten Messkonfigurationsinformationen an das UE, sodass das UE das dritte Messsignal gemäß dem einzelnen Strahl in den dritten Messkonfigurationsinformationen erzeugt; und

Empfangen des dritten Messsignals, das von dem UE gemeldet wird.

6. Verfahren nach Anspruch 1, wobei die ersten Messkonfigurationsinformationen weiter die Messressource, die jedem Strahl entspricht, umfassen, wobei die Messressource, die jedem Strahl entspricht, die gleiche ist, die ersten Messsignale erste Messsignale umfassen, von denen jedes einem jeweiligen Strahl entspricht, und

nach Empfangen der ersten Messsignale, die von dem UE gemeldet werden, das Verfahren weiter umfasst:

Bestimmen des Referenzstrahls gemäß den ersten Messsignalen, von denen jedes einem jeweiligen Strahl entspricht;

als Reaktion darauf, dass bestätigt wird, dass ein Signal einer Zelle, in der sich das UE befindet, geringer ist als der erste voreingestellte Schwellenwert und ein Signal einer benachbarten Zelle größer ist als der zweite voreingestellte Schwellenwert, Erzeugen der dritten Messkonfigurationsinformationen, wobei die dritten Messkonfigurationsinformationen den einzelnen Strahl, der von der Basisstation für das UE konfiguriert wird, umfassen, wobei der einzelne Strahl der Referenzstrahl ist und der erste voreingestellte Schwellenwert größer ist als der zweite voreingestellte Schwellenwert;

Senden der dritten Messkonfigurationsinformationen an das UE, sodass das UE das dritte Messsignal gemäß dem einzelnen Strahl in den dritten Messkonfigurationsinformationen erzeugt; und

Empfangen des dritten Messsignals, das von dem UE gemeldet wird.

7. Verfahren nach Anspruch 1, wobei die mehreren Strahlen in den ersten Messkonfigurationsinformationen benachbarte Strahlen umfassen, die ersten Messkonfigurationsinformationen weiter Angabeinformationen zur gleichzeitigen Messung der benachbarten Strahlen umfassen, und die ersten Messkonfigurationsinformationen für das UE konfiguriert werden, um die ersten Messsignale, von denen jedes einem jeweiligen Strahl entsprechen, gemäß den benachbarten Strahlen und den Angabeinformationen gleichzeitig zu erzeugen.

8. Verfahren zum Melden von Messsignalen, wobei das Verfahren umfasst:

Melden (S601) von Informationen zur Mehrfachstrahlmessfähigkeit eines Benutzergeräts, UE, an eine Basisstation, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;

Empfangen (S602) von ersten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden;

Erzeugen (S603) von ersten Messsignalen gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen; und

Melden (S604) der ersten Messsignale an die Basisstation;

wobei das Verfahren **dadurch gekennzeichnet ist, dass** das Empfangen der ersten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, umfasst:

Empfangen von zweiten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, wobei die zweiten Messkonfigurationsinformationen einen einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird;

Erzeugen eines zweiten Messsignals gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen;

Melden des zweiten Messsignals an die Basisstation; und

Empfangen der ersten Messkonfigurationsinformationen, die von der Basisstation gemäß dem zweiten Messsignal gesendet werden.

9. Verfahren nach Anspruch 8, weiter umfassend:

Empfangen von dritten Messkonfigurationsinformationen, die von der Basisstation gesendet werden, wobei die dritten Messkonfigurationsinformationen den einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird;

Erzeugen eines dritten Messsignals gemäß dem einzelnen Strahl in den dritten Messkonfigurationsinformationen; und

Melden des dritten Messsignals an die Basis-

station.

10. Verfahren nach Anspruch 8, wobei die mehreren Strahlen in den ersten Messkonfigurationsinformationen benachbarte Strahlen umfassen, die ersten Messkonfigurationsinformationen weiter Angabeinformationen zur gleichzeitigen Messung der benachbarten Strahlen umfassen, und das Erzeugen der ersten Messsignale gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen umfasst:
gleichzeitiges Erzeugen von ersten Messsignalen, von denen jedes einem jeweiligen Strahl entspricht, gemäß den benachbarten Strahlen und den Angabeinformationen.

11. Messsignalempfangsvorrichtung, umfassend:

ein erstes Empfangsmodul, das konfiguriert ist, um Informationen zur Mehrfachstrahlmessfähigkeit, die von einem aktuellen Benutzergerät, UE, gemeldet werden, zu empfangen, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;
ein Erzeugungsmodul, das konfiguriert ist, um erste Messkonfigurationsinformationen für das aktuelle UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit, die von dem ersten Empfangsmodul empfangen werden, zu erzeugen, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von einer aktuellen Basisstation für das aktuelle UE konfiguriert werden;
ein erstes Sendemodul, das konfiguriert ist, um die ersten Messkonfigurationsinformationen, die von dem Erzeugungsmodul erzeugt werden, an das aktuelle UE zu senden, sodass das aktuelle UE erste Messsignale gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen erzeugt; und
ein zweites Empfangsmodul, das konfiguriert ist, um die ersten Messsignale, die von dem aktuellen UE gemeldet werden und gemäß den von dem ersten Sendemodul gesendeten ersten Messkonfigurationsinformationen erzeugt werden, zu empfangen;
wobei die Vorrichtung **dadurch gekennzeichnet ist, dass** das Erzeugungsmodul umfasst:

ein erstes Erzeugungsteilmodul, das konfiguriert ist, um zweite Messkonfigurationsinformationen für das aktuelle UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit zu erzeugen, wobei die zweiten Messkonfigurationsinformationen einen einzelnen Strahl umfassen, der von der aktuellen Basisstation für das aktuelle UE konfiguriert wird;
ein Sendeteilmodul, das konfiguriert ist, um die zweiten Messkonfigurationsinformationen, die von dem ersten Erzeugungsteilmodul erzeugt werden, an das aktuelle UE zu senden, sodass das UE ein zweites Messsignal gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen erzeugt;
ein Empfangsteilmodul, das konfiguriert ist, um das zweite Messsignal, das von dem aktuellen UE gemeldet wird und gemäß den von dem Sendeteilmodul gesendeten zweiten Messkonfigurationsinformationen erzeugt wird, zu empfangen; und
ein zweites Erzeugungsteilmodul, das konfiguriert ist, um als Reaktion darauf, dass das zweite Messsignal, das von dem Empfangsteilmodul empfangen wird, mit einem geschätzten zweiten Messsignal inkonsistent ist, die ersten Messkonfigurationsinformationen für das aktuelle UE zu erzeugen, wobei die ersten Messkonfigurationsinformationen die mehreren Strahlen umfasst, die von der aktuellen Basisstation für das aktuelle UE konfiguriert werden.

12. Messsignalmeldevorrichtung, umfassend:

ein erstes Meldemodul, das konfiguriert ist, um Informationen zur Mehrfachstrahlmessfähigkeit, eines aktuellen Benutzergeräts, UE, an eine Basisstation zu melden, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;
ein erstes Empfangsmodul, das konfiguriert ist, um erste Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, die von dem ersten Meldemodul gemeldet werden, zu empfangen, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von der aktuellen Basisstation für das aktuelle UE konfiguriert werden;
ein erstes Erzeugungsmodul, das konfiguriert ist, um erste Messsignale gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen, die von dem ersten Empfangsmodul empfangen werden, zu erzeugen; und
ein zweites Meldemodul, das konfiguriert ist, um die ersten Messsignale, die von dem ersten Erzeugungsmodul erzeugt werden, an die Basisstation zu melden;
wobei die Vorrichtung **dadurch gekennzeichnet ist, dass** das erste Empfangsmodul um-

fasst:

ein erstes Empfangsteilmodul, das konfiguriert ist, um zweite Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, zu empfangen, wobei die zweiten Messkonfigurationsinformationen einen einzelnen Strahl umfassen, der von der aktuellen Basisstation für das aktuelle UE konfiguriert wird;
ein Erzeugungsteilmodul, das konfiguriert ist, um ein zweites Messsignal gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen, die von dem ersten Empfangsteilmodul empfangen werden, zu erzeugen;
ein Meldeteilmodul, das konfiguriert ist, um das zweite Messsignal, das von dem Erzeugungsteilmodul erzeugt wird, an die Basisstation zu melden; und
ein zweites Empfangsteilmodul, das konfiguriert ist, um die ersten Messkonfigurationsinformationen, die von der Basisstation gemäß dem von dem Meldeteilmodul gemeldeten zweiten Messsignal gesendet werden, zu empfangen.

13. Computerlesbares Speichermedium, das ein Computerprogramm darauf gespeichert aufweist, das, wenn es von einem Prozessor ausgeführt wird, die folgenden Operationen implementiert:

Empfangen (S101) von Informationen zur Mehrfachstrahlmessfähigkeit, die von einem Benutzergerät, UE, gemeldet werden, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;
Erzeugen (S102) von ersten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden;
Senden (S103) der ersten Messkonfigurationsinformationen an das UE, sodass das UE erste Messsignale gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen erzeugt; und
Empfangen (S104) der ersten Messsignale, die von dem UE gemeldet werden;
dadurch gekennzeichnet, dass Erzeugen der ersten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit umfasst:

Erzeugen von zweiten Messkonfigurationsinformationen für das UE gemäß den Informationen zur Mehrfachstrahlmessfähigkeit, wobei die zweiten Messkonfigurationsinformationen einen einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird;
Senden der zweiten Messkonfigurationsinformationen an das UE, sodass das UE ein zweites Messsignal gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen erzeugt;
Empfangen des zweiten Messsignals, das von der UE gemeldet wird; und
als Reaktion darauf, dass das empfangene zweite Messsignal mit einem geschätzten zweiten Messsignal inkonsistent ist, Erzeugen der ersten Messkonfigurationsinformationen für das UE, wobei die ersten Messkonfigurationsinformationen die mehreren Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden.

14. Computerlesbares Speichermedium, das ein Computerprogramm darauf gespeichert aufweist, das, wenn es von einem Prozessor ausgeführt wird, die folgenden Operationen implementiert:

Melden (S601) von Informationen zur Mehrfachstrahlmessfähigkeit eines Benutzergeräts, UE, an eine Basisstation, wobei die Informationen zur Mehrfachstrahlmessfähigkeit konfiguriert sind, um anzugeben, dass das UE die Fähigkeit aufweist, Messung basierend auf mehreren Strahlen durchzuführen;
Empfangen (S602) von ersten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, wobei die ersten Messkonfigurationsinformationen mehrere Strahlen umfassen, die von der Basisstation für das UE konfiguriert werden;
Erzeugen (S603) von ersten Messsignalen gemäß den mehreren Strahlen in den ersten Messkonfigurationsinformationen; und
Melden (S604) der ersten Messsignale an die Basisstation;
dadurch gekennzeichnet, dass das Empfangen der ersten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, umfasst:

Empfangen von zweiten Messkonfigurationsinformationen, die von der Basisstation gemäß den Informationen zur Mehrfachstrahlmessfähigkeit gesendet werden, wobei die zweiten Messkonfigurationsinforma-

tionen einen einzelnen Strahl umfassen, der von der Basisstation für das UE konfiguriert wird;
Erzeugen eines zweiten Messsignals gemäß dem einzelnen Strahl in den zweiten Messkonfigurationsinformationen;
Melden des zweiten Messsignals an die Basisstation; und
Empfangen der ersten Messkonfigurationsinformationen, die von der Basisstation gemäß dem zweiten Messsignal gesendet werden.

Revendications

1. Procédé de réception de signaux de mesure, le procédé comprenant :

recevoir (S101) des informations de capacité de mesure multifaisceau rapportées par un équipement utilisateur, UE, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;
générer (S102) des premières informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE par une station de base ;
envoyer (S103) les premières informations de configuration de mesure à l'UE de telle sorte que l'UE génère des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure ; et
recevoir (S104) les premiers signaux de mesure rapportés par l'UE ;
le procédé étant **caractérisé en ce qu'**une génération des premières informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau comprend :

générer des deuxièmes informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE par la station de base ;
envoyer les deuxièmes informations de configuration de mesure à l'UE de telle sorte que l'UE génère un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure ;
recevoir le deuxième signal de mesure rapporté par l'UE ; et
en réponse au deuxième signal de mesure reçu qui est incohérent par rapport à un deuxième signal de mesure estimé, générer les premières informations de configuration de mesure pour l'UE, les premières informations de configuration de mesure comprenant les multiples faisceaux configurés pour l'UE par la station de base.

2. Procédé selon la revendication 1, dans lequel les multiples faisceaux comprennent un faisceau primaire et au moins un faisceau secondaire, les premières informations de configuration de mesure comprennent en outre une ressource de mesure correspondant au faisceau primaire et des ressources de mesure correspondant respectivement au au moins un faisceau secondaire, la ressource de mesure correspondant au faisceau primaire étant supérieure à la ressource de mesure correspondant à chaque faisceau secondaire, les premiers signaux de mesure comprennent des premiers signaux de mesure dont chacun correspond à un faisceau respectif, et
après réception des premiers signaux de mesure rapportés par l'UE, le procédé comprend en outre :

en réponse à la confirmation selon les premiers signaux de mesure, dont chacun correspond à un faisceau respectif, que l'UE est au niveau d'un centre géométrique des multiples faisceaux, mettre à jour la ressource de mesure correspondant à chaque faisceau pour rendre la ressource de mesure correspondant au faisceau primaire égale à la ressource de mesure correspondant à chaque faisceau secondaire ; et
recevoir les premiers signaux de mesure rapportés par l'UE selon les ressources de mesure mises à jour et correspondant à chaque faisceau.

3. Procédé selon la revendication 2, avant une mise à jour de la ressource de mesure correspondant à chaque faisceau, comprenant en outre :

déterminer un faisceau de référence selon les premiers signaux de mesure dont chacun correspond à un faisceau respectif;
en réponse à la confirmation qu'un signal d'une cellule où se trouve l'UE est supérieur à une première valeur de seuil prédéfinie et qu'un signal d'une cellule voisine est inférieur à une seconde valeur de seuil prédéfinie, générer des troisièmes informations de configuration de mesure, les troisième informations de configuration

de mesure comprenant le faisceau unique configuré pour l'UE par la station de base, le faisceau unique étant le faisceau de référence et la première valeur de seuil prédéfinie étant supérieure à la seconde valeur de seuil prédéfinie ;
envoyer les troisièmes informations de configuration de mesure à l'UE de sorte que l'UE génère un troisième signal de mesure selon le faisceau unique dans les troisièmes informations de configuration de mesure ; et
recevoir le troisième signal de mesure rapporté par l'UE.

4. Procédé selon la revendication 2, avant une mise à jour de la ressource de mesure correspondant à chaque faisceau, comprenant en outre :

déterminer le faisceau de référence selon les premiers signaux de mesure dont chacun correspond à un faisceau respectif;
en réponse à la confirmation qu'un signal d'une cellule où se trouve l'UE est inférieur à la première valeur de seuil prédéfinie et qu'un signal d'une cellule voisine est supérieur à une seconde valeur de seuil prédéfinie, générer les troisièmes informations de configuration de mesure, les troisième informations de configuration de mesure comprenant le faisceau unique configuré pour l'UE par la station de base, le faisceau unique étant le faisceau de référence et la première valeur de seuil prédéfinie étant supérieure à la seconde valeur de seuil prédéfinie ;
envoyer les troisièmes informations de configuration de mesure à l'UE de sorte que l'UE génère le troisième signal de mesure selon le faisceau unique dans les troisièmes informations de configuration de mesure ; et
recevoir le troisième signal de mesure rapporté par l'UE.

5. Procédé selon la revendication 1, dans lequel les premières informations de configuration de mesure comprennent en outre la ressource de mesure correspondant à chaque faisceau, la ressource de mesure correspondant à chaque faisceau étant la même, les premiers signaux de mesure comprennent des premiers signaux de mesure dont chacun correspond à un faisceau respectif, et
après réception des premiers signaux de mesure rapportés par l'UE, le procédé comprend en outre :

déterminer le faisceau de référence selon les premiers signaux de mesure dont chacun correspond à un faisceau respectif;
en réponse à la confirmation qu'un signal d'une cellule où se trouve l'UE est supérieur à la première valeur de seuil prédéfinie et qu'un signal d'une cellule voisine est inférieur à la seconde valeur de seuil prédéfinie, générer les troisièmes informations de configuration de mesure, les troisième informations de configuration de mesure comprenant le faisceau unique configuré pour l'UE par la station de base, le faisceau unique étant le faisceau de référence et la première valeur de seuil prédéfinie étant supérieure à la seconde valeur de seuil prédéfinie ;
envoyer les troisièmes informations de configuration de mesure à l'UE de sorte que l'UE génère le troisième signal de mesure selon le faisceau unique dans les troisièmes informations de configuration de mesure ; et
recevoir le troisième signal de mesure rapporté par l'UE.

6. Procédé selon la revendication 1, dans lequel les premières informations de configuration de mesure comprennent en outre la ressource de mesure correspondant à chaque faisceau, la ressource de mesure correspondant à chaque faisceau étant la même, les premiers signaux de mesure comprennent des premiers signaux de mesure dont chacun correspond à un faisceau respectif, et
après réception des premiers signaux de mesure rapportés par l'UE, le procédé comprend en outre :

déterminer le faisceau de référence selon les premiers signaux de mesure dont chacun correspond à un faisceau respectif;
en réponse à la confirmation qu'un signal d'une cellule où se trouve l'UE est inférieur à la première valeur de seuil prédéfinie et qu'un signal d'une cellule voisine est supérieur à une seconde valeur de seuil prédéfinie, générer les troisièmes informations de configuration de mesure, les troisième informations de configuration de mesure comprenant le faisceau unique configuré pour l'UE par la station de base, le faisceau unique étant le faisceau de référence et la première valeur de seuil prédéfinie étant supérieure à la seconde valeur de seuil prédéfinie ;
envoyer les troisièmes informations de configuration de mesure à l'UE de sorte que l'UE génère le troisième signal de mesure selon le faisceau unique dans les troisièmes informations de configuration de mesure ; et
recevoir le troisième signal de mesure rapporté par l'UE.

7. Procédé selon la revendication 1, dans lequel les multiples faisceaux dans les premières informations de configuration de mesure comprennent des faisceaux voisins, les premières informations de configuration de mesure comprennent en outre des informations d'indication pour une mesure simultanée des faisceaux voisins, et les premières informations de configuration de mesure sont configurées pour

que l'UE puisse simultanément générer les premiers signaux de mesure, dont chacun correspond à un faisceau respectif, selon les faisceaux voisins et les informations d'indication.

8. Procédé de rapport de signaux de mesure, le procédé comprenant :

rapporter (S601) des informations de capacité de mesure multifaisceau d'une équipement utilisateur, UE, à une station de base, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;
recevoir (S602) des premières informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE par la station de base ;
générer (S603) des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure ; et
rapporter (S604) les premiers signaux de mesure à la station de base ;
le procédé étant **caractérisé en ce que** la réception des premières informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau comprend :

recevoir des deuxièmes informations de configuration de mesure envoyées par la station de base selon informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE par la station de base ;
générer un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure ;
rapporter le deuxième signal de mesure à la station de base ; et
recevoir les premières informations de configuration de mesure envoyées par la station de base selon le deuxième signal de mesure.

9. Procédé selon la revendication 8, comprenant en outre :

recevoir des troisièmes informations de configuration de mesure envoyées par la station de base, les troisièmes informations de configuration de mesure comprenant le faisceau unique configuré pour l'UE par la station de base ;
générer un troisième signal de mesure selon le faisceau unique dans les troisièmes informations de configuration de mesure ; et
rapporter le troisième signal de mesure à la station de base.

10. Procédé selon la revendication 8, dans lequel les multiples faisceaux dans les premières informations de configuration de mesure comprennent des faisceaux voisins, les premières informations de configuration de mesure comprennent en outre des informations d'indication pour une mesure simultanée des faisceaux voisins, et la génération des premiers signaux de mesure selon les multiples faisceaux dans le les premières informations de configuration de mesure comprennent :
générer simultanément des premiers signaux de mesure, dont chacun correspond à un faisceau respectif, selon les faisceaux voisins et les informations d'indication.

11. Dispositif de réception de signal de mesure, comprenant :

un premier module de réception, configuré pour recevoir des informations de capacité de mesure multifaisceau rapportées par un équipement utilisateur, UE, actuel, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;
un module de génération, configuré pour générer des premières informations de configuration de mesure pour l'UE actuel selon les informations de capacité de mesure multifaisceau reçues par le premier module de réception, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE actuel par une station de base actuelle ;
un premier module d'envoi, configuré pour envoyer les premières informations de configuration de mesure générées par le module de génération à l'UE actuel de sorte que l'UE actuel génère des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure ; et
un second module de réception, configuré pour recevoir les premiers signaux de mesure rapportés par l'UE actuel et générés selon les premières informations de configuration de mesure envoyées par le premier module d'envoi ;
le dispositif étant **caractérisé en ce que** le module de génération comprend :

un premier sous-module de génération, configuré pour générer des deuxièmes in-

formations de configuration de mesure pour l'UE actuel selon les informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE actuel par la station de base actuelle ;

un sous-module d'envoi, configuré pour envoyer les deuxièmes informations de configuration de mesure générées par le premier sous-module de génération à l'UE actuel de sorte que l'UE génère un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure ;

un sous-module de réception, configuré pour recevoir le deuxième signal de mesure rapporté par l'UE actuel et généré selon les deuxièmes informations de configuration de mesure envoyées par le sous-module d'envoi ; et

un second sous-module de génération, configuré pour, en réponse au deuxième signal de mesure reçu par le sous-module de réception qui est incompatible avec un deuxième signal de mesure estimé, générer les premières informations de configuration de mesure pour l'UE actuel, les premières informations de configuration de mesure comprenant les multiples faisceaux configurés pour l'UE actuel par la station de base actuelle.

12. Dispositif de rapport de signaux de mesure, comprenant :

un premier module de rapport, configuré pour rapporter des informations de capacité de mesure multifaisceau d'un équipement utilisateur, UE, actuel à une station de base, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;

un premier module de réception, configuré pour recevoir des premières informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau rapportées par le premier module de rapport, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE actuel par la station de base actuelle ;

un premier module de génération, configuré pour générer des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure reçues par le premier module de réception ; et

un second module de rapport, configuré pour rapporter les premiers signaux de mesure générés par le premier module de génération à la station de base ;

le dispositif étant **caractérisé en ce que** le premier module de réception comprend :

un premier sous-module de réception, configuré pour recevoir des deuxièmes informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE actuel par la station de base actuelle ;

un sous-module de génération, configuré pour générer un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure reçues par le premier sous-module de réception ;

un sous-module de rapport, configuré pour rapporter le deuxième signal de mesure généré par le sous-module de génération à la station de base ; et

un deuxième sous-module de réception, configuré pour recevoir les premières informations de configuration de mesure, qui sont envoyées par la station de base selon le deuxième signal de mesure rapporté par le sous-module de rapport.

13. Support de stockage lisible par ordinateur sur lequel est stocké un programme informatique qui, lorsqu'il est exécuté par un processeur, met en œuvre les opérations de :

recevoir (S101) des informations de capacité de mesure multifaisceau rapportées par un équipement utilisateur, UE, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;

générer (S102) des premières informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE par une station de base ;

envoyer (S103) les premières informations de configuration de mesure à l'UE de telle sorte que l'UE génère des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure ; et

recevoir (S104) les premiers signaux de mesure

rapportés par l'UE ;
caractérisé en ce que la génération des premières informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau comprend :

générer des deuxièmes informations de configuration de mesure pour l'UE selon les informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE par la station de base ;
envoyer les deuxièmes informations de configuration de mesure à l'UE de telle sorte que l'UE génère un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure ;
recevoir le deuxième signal de mesure rapporté par l'UE ; et
en réponse au deuxième signal de mesure reçu qui est incohérent par rapport à un deuxième signal de mesure estimé, générer les premières informations de configuration de mesure pour l'UE, les premières informations de configuration de mesure comprenant les multiples faisceaux configurés pour l'UE par la station de base.

14. Support de stockage lisible par ordinateur sur lequel est stocké un programme informatique qui, lorsqu'il est exécuté par un processeur, met en œuvre les opérations de :

rapporter (S601) des informations de capacité de mesure multifaisceau d'un équipement utilisateur, UE, à une station de base, les informations de capacité de mesure multifaisceau étant configurées pour indiquer que l'UE a la capacité d'effectuer une mesure basée sur de multiples faisceaux ;
recevoir (S602) des premières informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau, les premières informations de configuration de mesure comprenant de multiples faisceaux configurés pour l'UE par la station de base ;
générer (S603) des premiers signaux de mesure selon les multiples faisceaux dans les premières informations de configuration de mesure ; et
rapporter (S604) les premiers signaux de mesure à la station de base ;
caractérisé en ce que la réception des premières informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau comprend :

recevoir des deuxièmes informations de configuration de mesure envoyées par la station de base selon les informations de capacité de mesure multifaisceau, les deuxièmes informations de configuration de mesure comprenant un faisceau unique configuré pour l'UE par la station de base ;
générer un deuxième signal de mesure selon le faisceau unique dans les deuxièmes informations de configuration de mesure ;
rapporter le deuxième signal de mesure à la station de base ; et
recevoir les premières informations de configuration de mesure envoyées par la station de base selon le deuxième signal de mesure.

DRAWINGS FOR SPECIFICATION

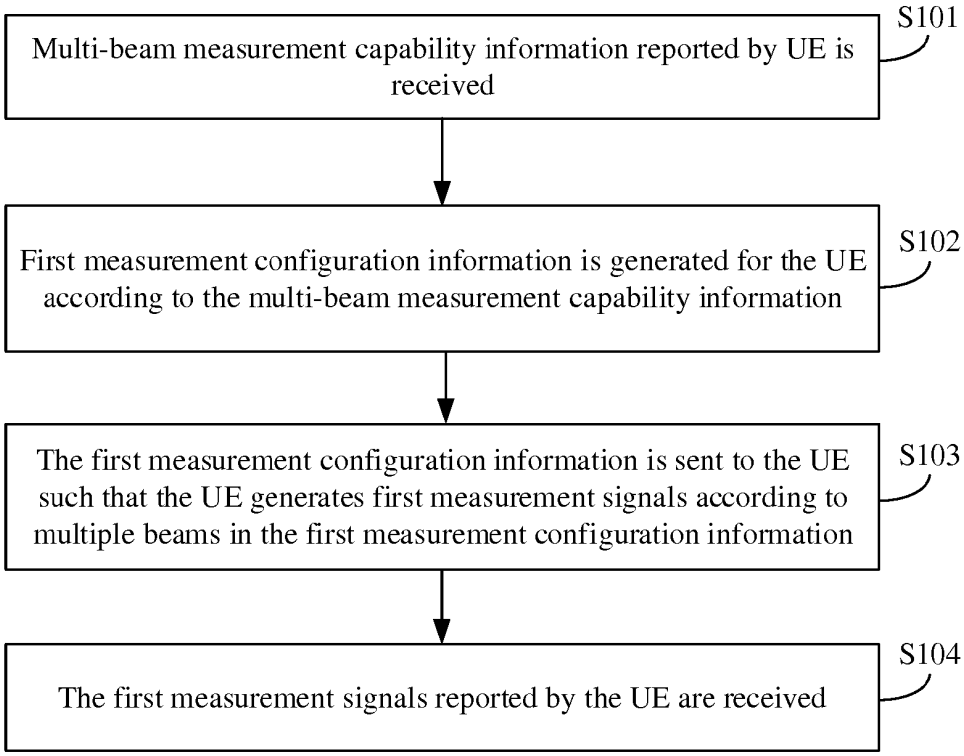

FIG. 1

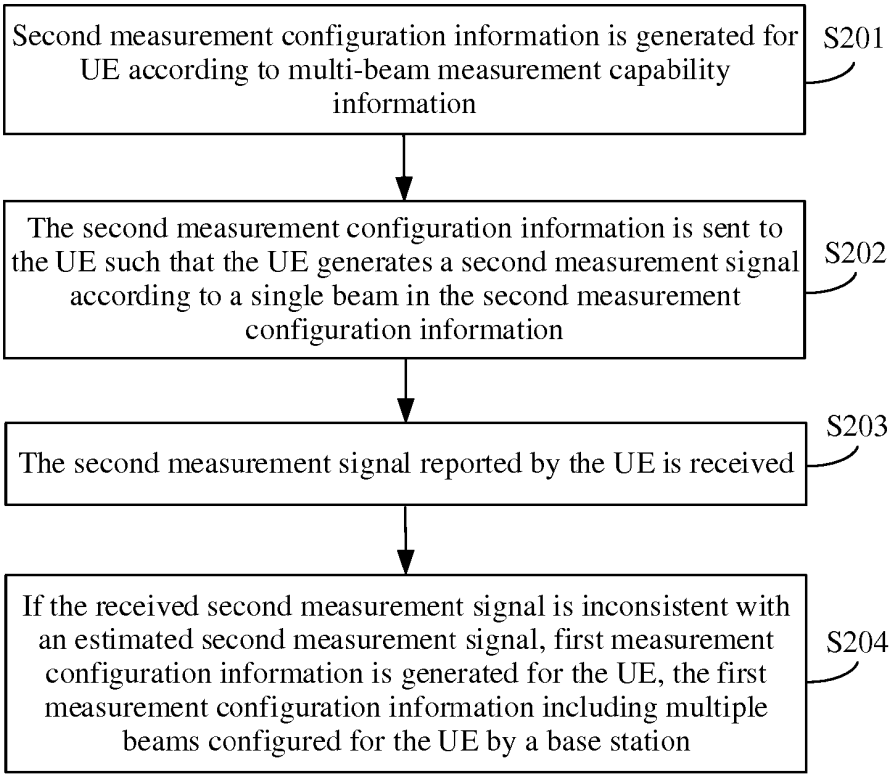

FIG. 2

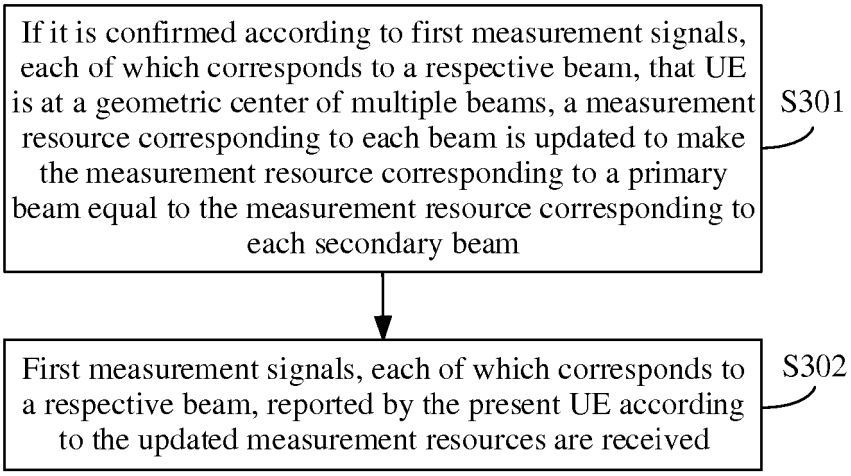

FIG. 3

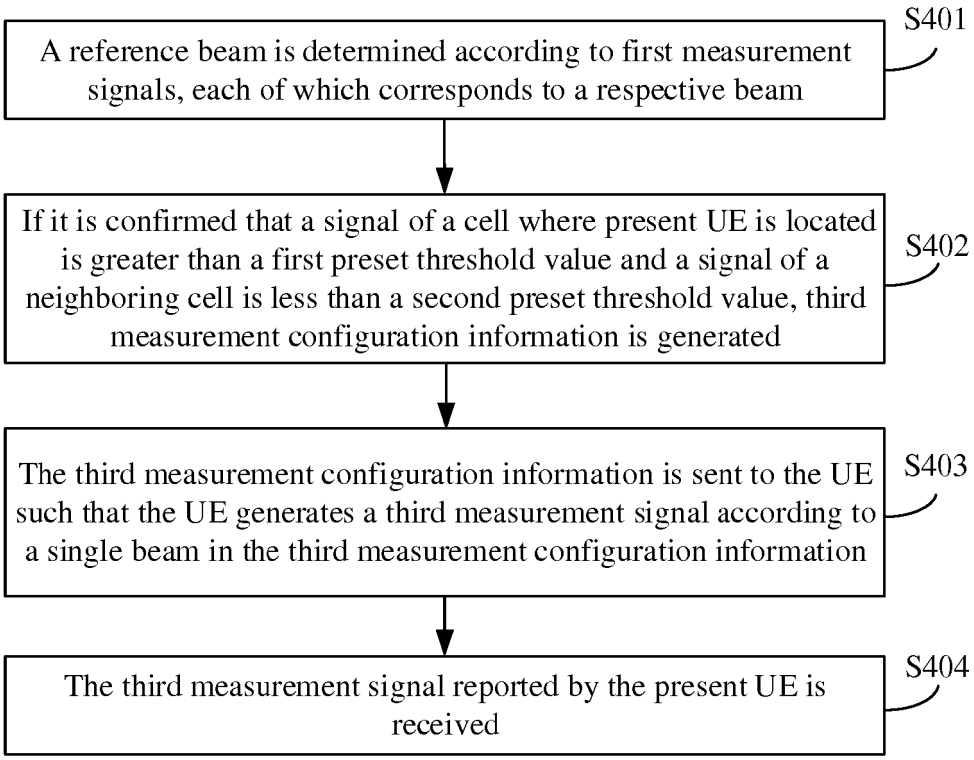

FIG. 4A

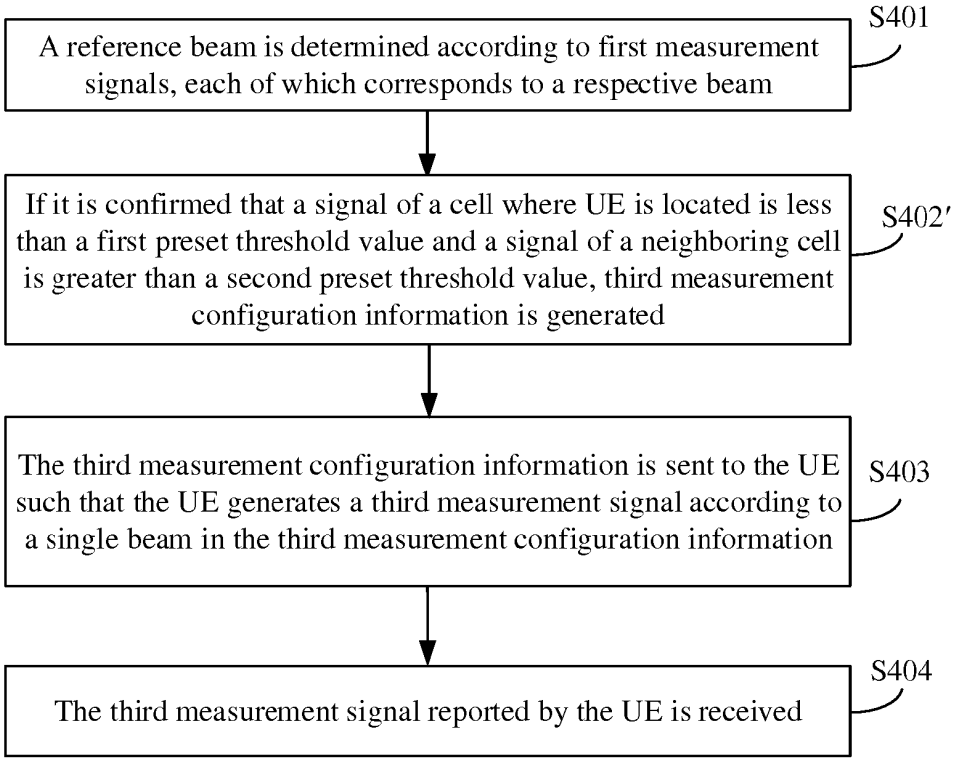
S401
A reference beam is determined according to first measurement signals, each of which corresponds to a respective beam
If it is confirmed that a signal of a cell where UE is located is less than a first preset threshold value and a signal of a neighboring cell is greater than a second preset threshold value, third measurement configuration information is generated
S402′
The third measurement configuration information is sent to the UE such that the UE generates a third measurement signal according to a single beam in the third measurement configuration information
S403
The third measurement signal reported by the UE is received
S404

FIG. 4B

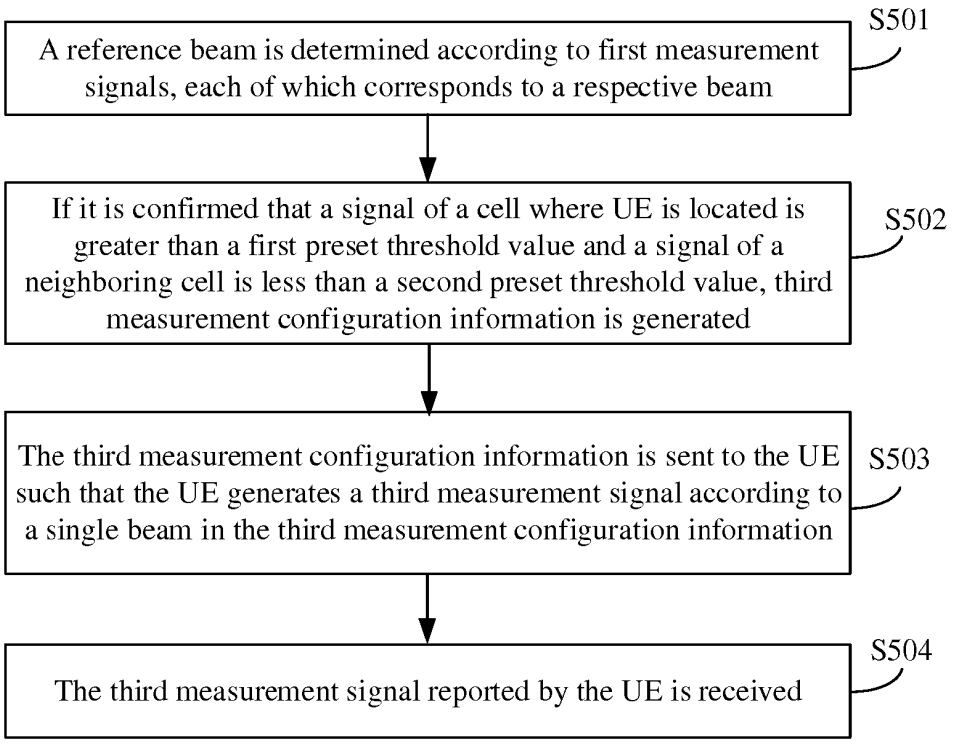
S501
A reference beam is determined according to first measurement signals, each of which corresponds to a respective beam
If it is confirmed that a signal of a cell where UE is located is greater than a first preset threshold value and a signal of a neighboring cell is less than a second preset threshold value, third measurement configuration information is generated
S502
The third measurement configuration information is sent to the UE such that the UE generates a third measurement signal according to a single beam in the third measurement configuration information
S503
The third measurement signal reported by the UE is received
S504

FIG. 5A

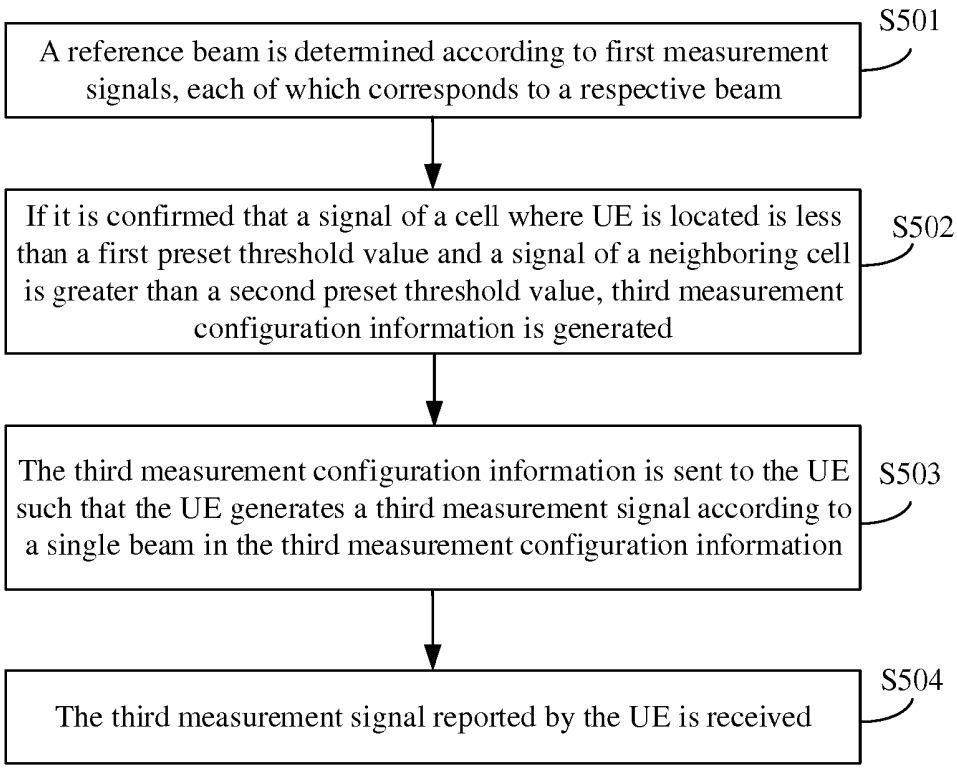
A reference beam is determined according to first measurement signals, each of which corresponds to a respective beam
S501
If it is confirmed that a signal of a cell where UE is located is less than a first preset threshold value and a signal of a neighboring cell is greater than a second preset threshold value, third measurement configuration information is generated
S502'
The third measurement configuration information is sent to the UE such that the UE generates a third measurement signal according to a single beam in the third measurement configuration information
S503
The third measurement signal reported by the UE is received
S504

FIG. 5B

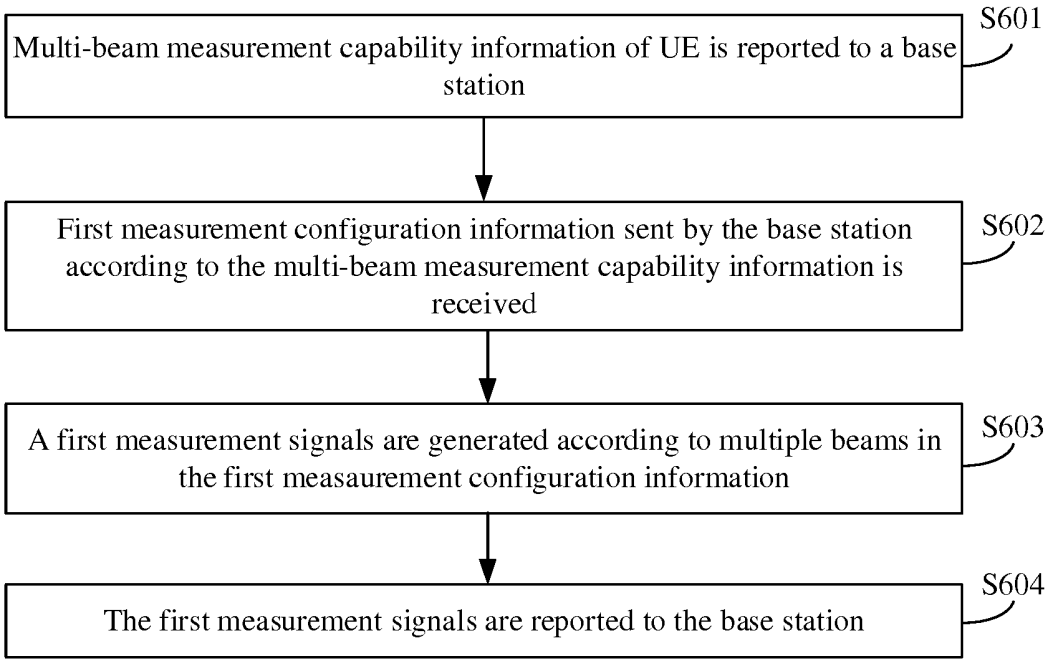
Multi-beam measurement capability information of UE is reported to a base station
S601
First measurement configuration information sent by the base station according to the multi-beam measurement capability information is received
S602
A first measurement signals are generated according to multiple beams in the first measaurement configuration information
S603
The first measurement signals are reported to the base station
S604

FIG. 6

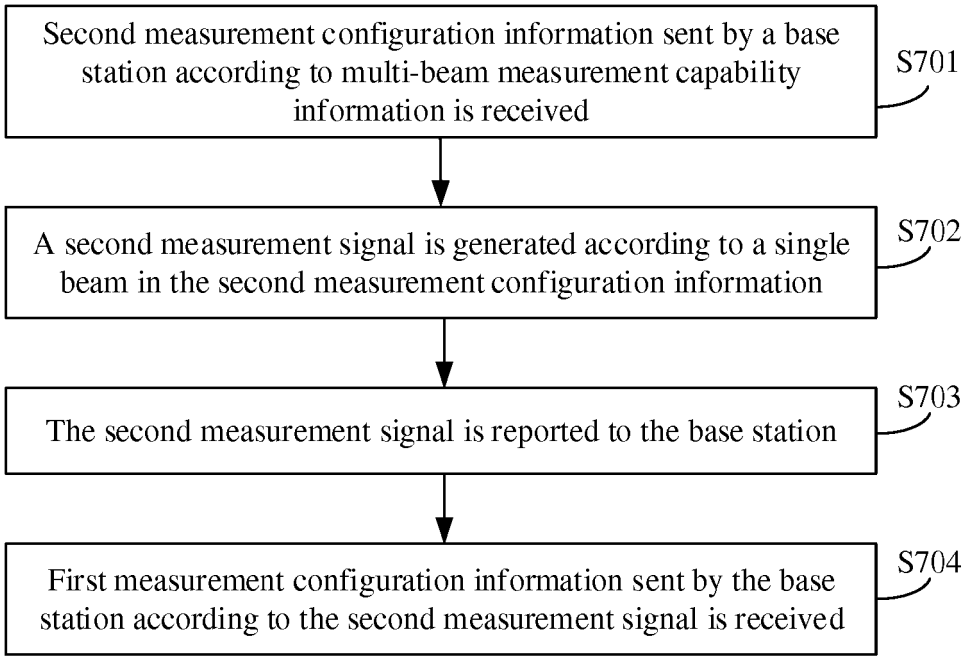
Second measurement configuration information sent by a base station according to multi-beam measurement capability information is received
S701
A second measurement signal is generated according to a single beam in the second measurement configuration information
S702
The second measurement signal is reported to the base station
S703
First measurement configuration information sent by the base station according to the second measurement signal is received
S704

FIG. 7A

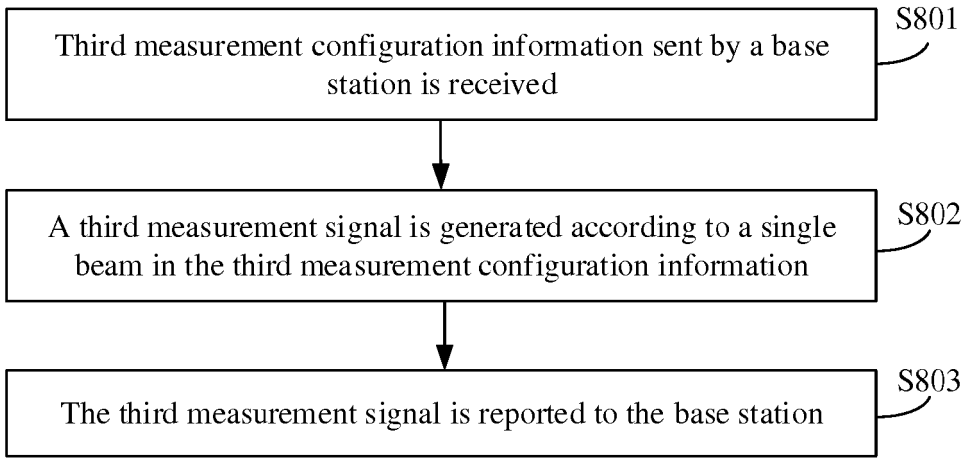
Third measurement configuration information sent by a base station is received
S801
A third measurement signal is generated according to a single beam in the third measurement configuration information
S802
The third measurement signal is reported to the base station
S803

FIG. 7B

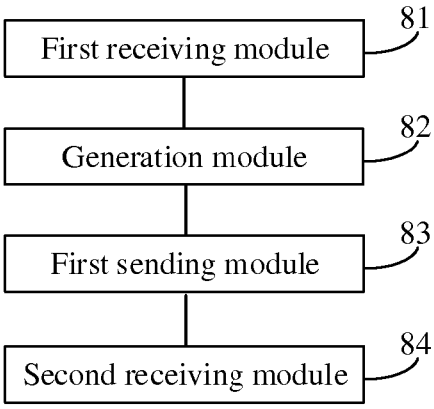
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84

FIG. 8

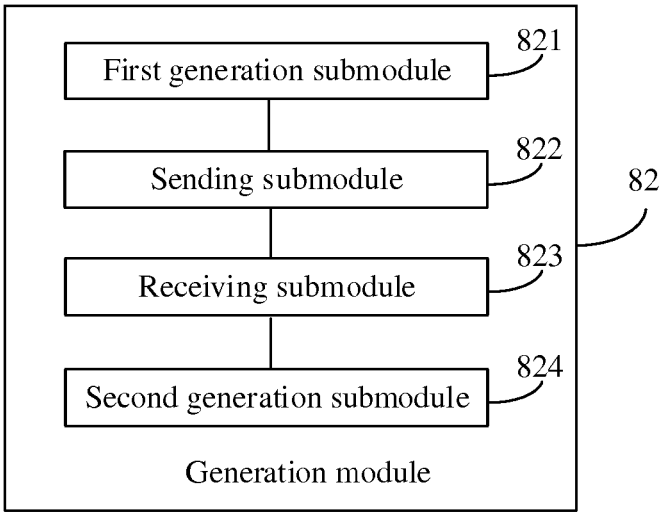
First generation submodule
821
Sending submodule
822
Receiving submodule
823
Second generation submodule
824
Generation module
82

FIG. 9A

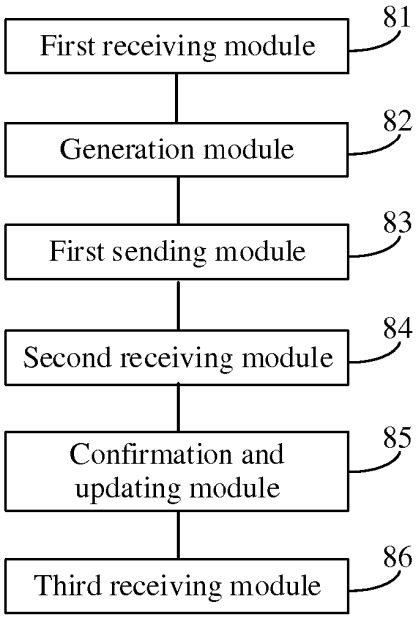
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84
Confirmation and updating module
85
Third receiving module
86

FIG. 9B

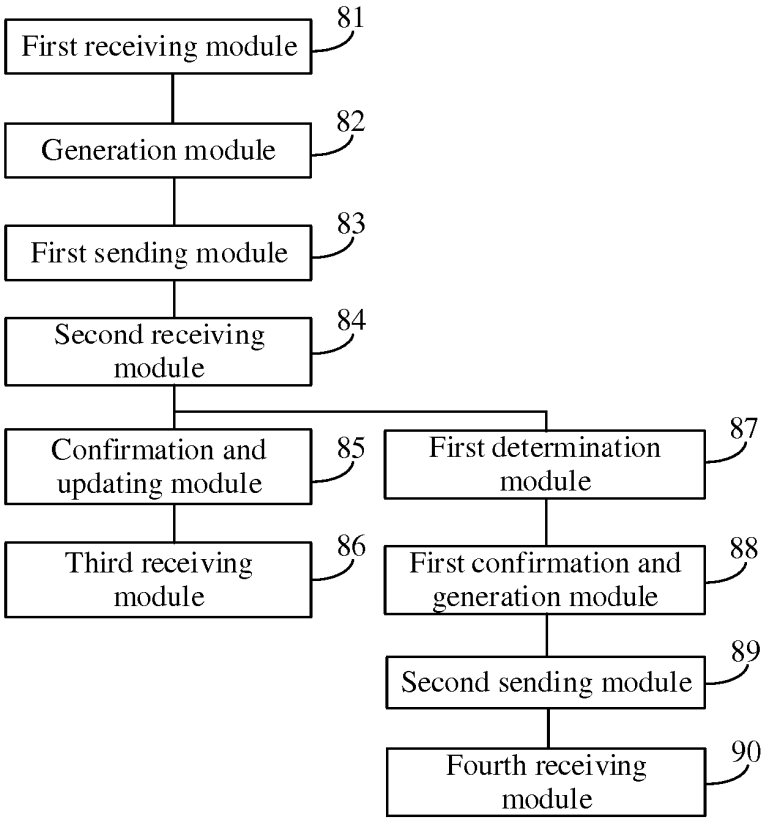
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84
Confirmation and updating module
85
Third receiving module
86
First determination module
87
First confirmation and generation module
88
Second sending module
89
Fourth receiving module
90

FIG. 9C

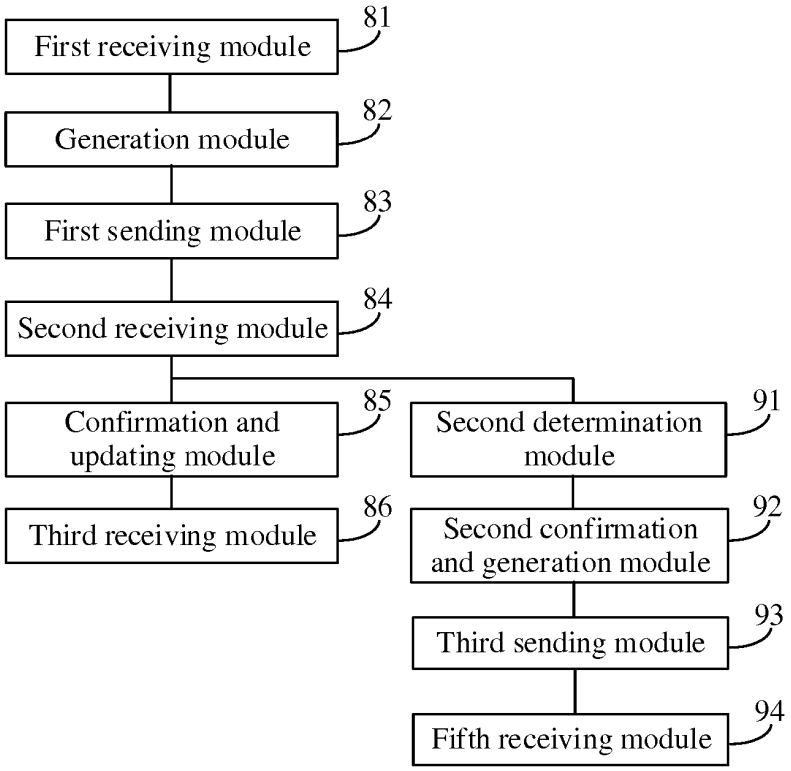
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84
Confirmation and updating module
85
Third receiving module
86
Second determination module
91
Second confirmation and generation module
92
Third sending module
93
Fifth receiving module
94

FIG. 9D

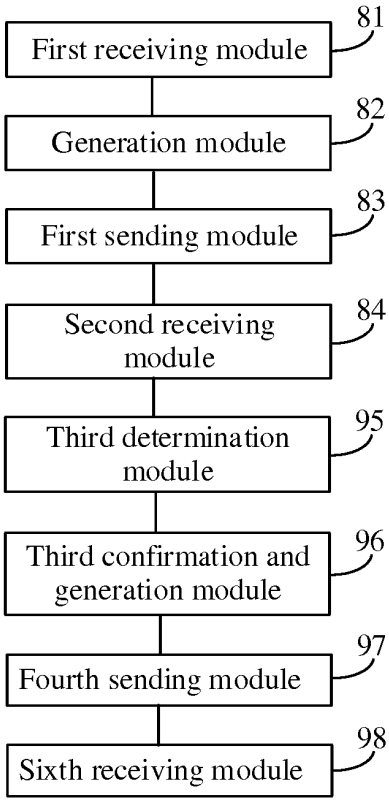
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84
Third determination module
95
Third confirmation and generation module
96
Fourth sending module
97
Sixth receiving module
98

FIG. 9E

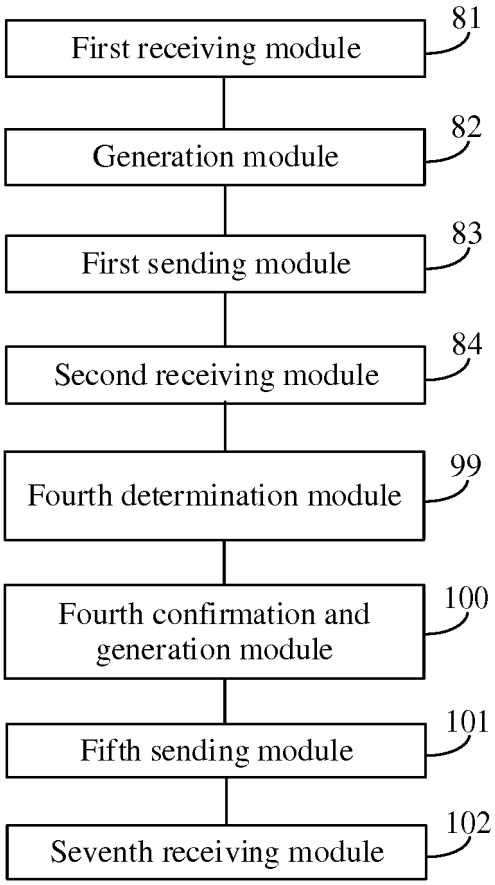
First receiving module
81
Generation module
82
First sending module
83
Second receiving module
84
Fourth determination module
99
Fourth confirmation and generation module
100
Fifth sending module
101
Seventh receiving module
102

FIG. 9F

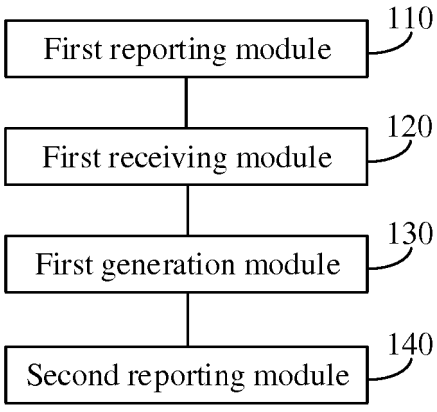
First reporting module
110
First receiving module
120
First generation module
130
Second reporting module
140

FIG. 10

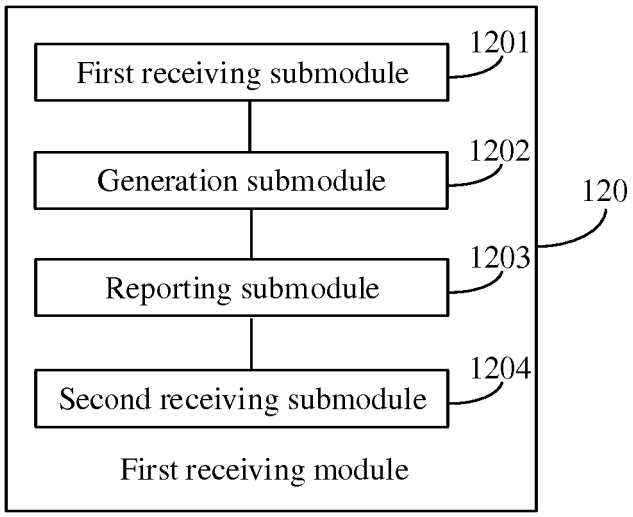

FIG. 11A

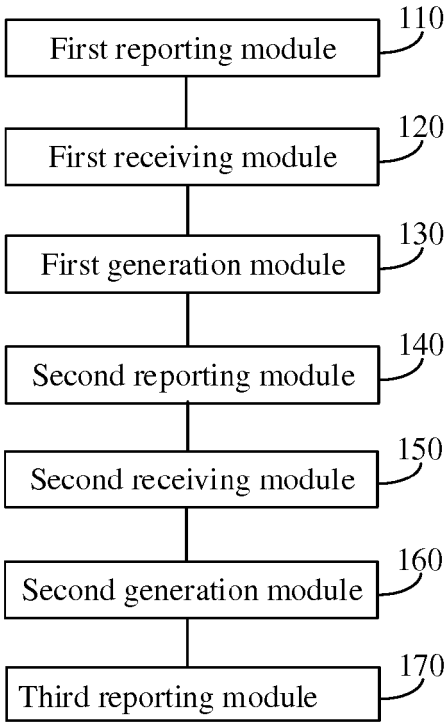

FIG. 11B

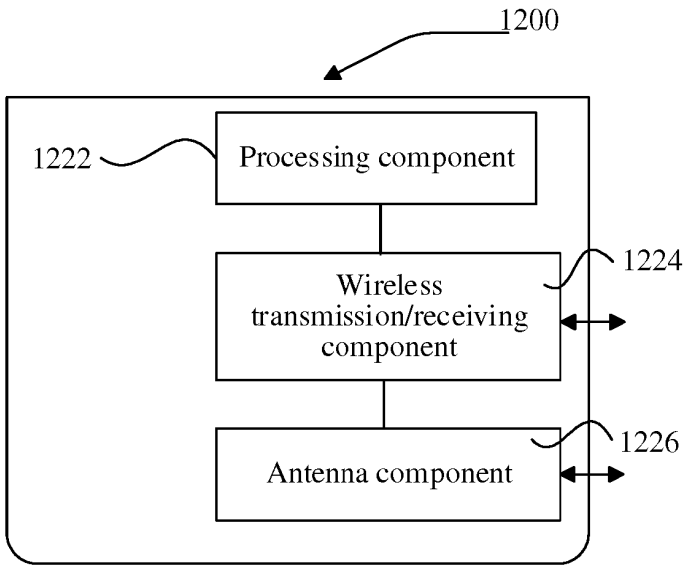
1200
1222
Processing component
1224
Wireless transmission/receiving component
1226
Antenna component

FIG. 12

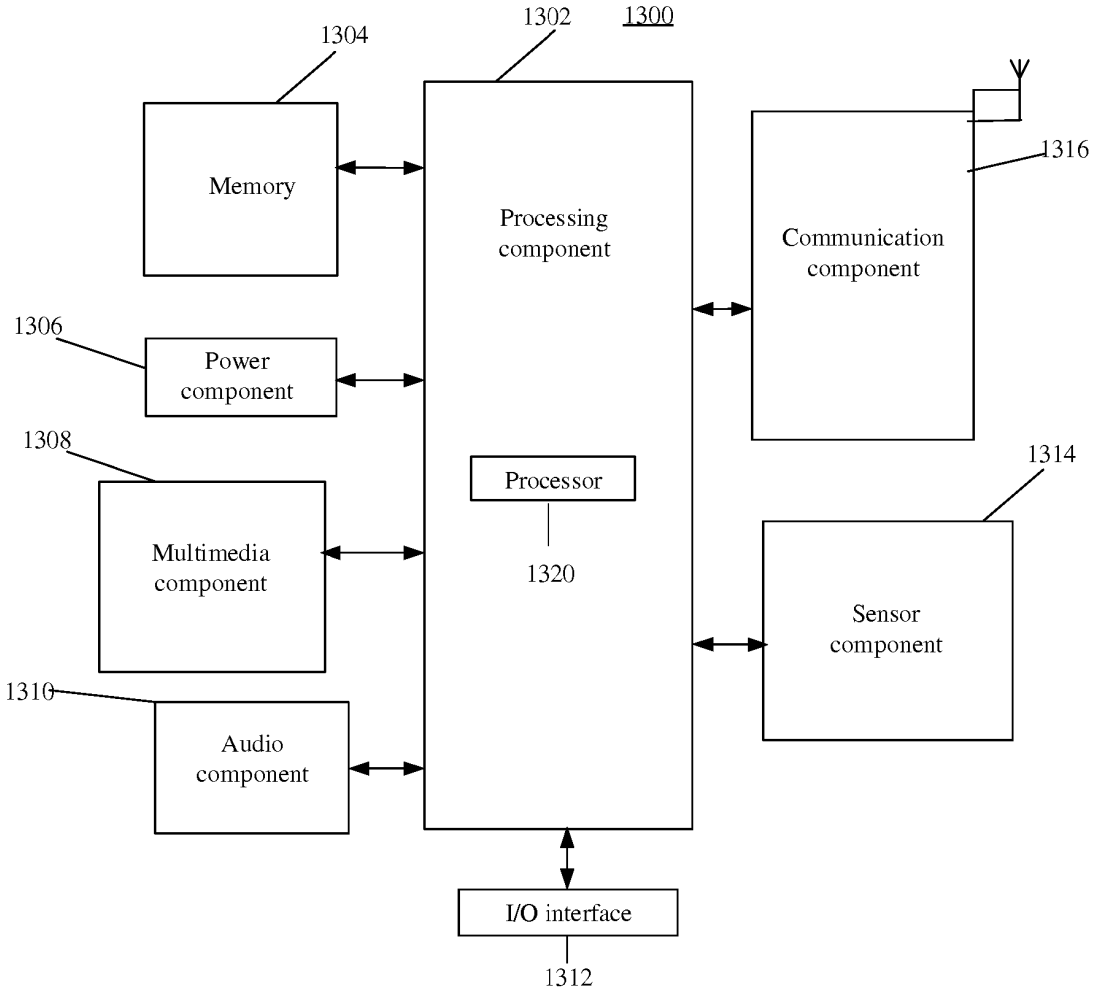
1302
1300
1304
Memory
Processing component
Communication component
1316
1306
Power component
1308
Processor
1320
1314
Multimedia component
Sensor component
1310
Audio component
I/O interface
1312

FIG. 13

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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