



State Intellectual Property Office

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(Page 1/2)

Application number or patent number: 201710318202.4

Publication number: (Page 1/2)

Case Number: 4W115204

Invention Title: A method and apparatus for wireless communication in a base station and user equipment

Patentee: Aurora Technology Consulting Co., Ltd.

Invalidation petitioner: Zhang Peipei

Decision on Invalidation Request Examination

(No. 561715)

According to Article 46, Paragraph 1 of the Patent Law, the State Intellectual Property Office shall issue a notice to the invalidation applicant regarding the above-mentioned patent right.

The request for invalidation has been reviewed and the decision is as follows:

- ☒ All patent rights are declared invalid.
- ☐ The patent right is partially invalidated.
- ☐ Maintaining the validity of patent rights.

According to Article 46, paragraph 2 of the Patent Law, if you are dissatisfied with this decision, you may file a claim within three months from the date of receipt of this notice.

The case was brought to the Beijing Intellectual Property Court, with the other party participating in the litigation as a third party.

Appendix: 14 pages of the decision text (the text starts from page 2).

Collegial Panel Leader: Gao Xue

Presiding Judge: Wang

Tingling Counselor: Li Lingling

Patent Office Reexamination and Invalidation Review Department

201019

For paper applications, please send your reply to: Reexamination and Invalidation Trial Department, Patent Office, State Intellectual Property Office, No. 6 Tuchen Road, Xitucheng Road, Jijunqiao, Haidian District, Beijing 100088, China

2022.10 For electronic applications, relevant documents shall be submitted in electronic form through the patent business processing system. Unless otherwise specified, documents submitted in other forms such as paper shall be submitted in electronic form.

The document is deemed not submitted.

State Intellectual Property Office

Decision on Invalidation Request (No. 561715)

Case Number	No. 4W115204
Decision Day	May 25, 2023
Name of invention	Method and device for wireless communication in base station and user equipment
International Classification Number	H04W 72/04, H04L 5/00, H04B 7/06
Invalidation applicant	Zhang Peipei
Patentee	Aurora Technology Consulting LLC
Patent Number	201710318202.4
Application date	May 8, 2017
Priority date	
Authorization announcement date	June 30, 2020
Invalidation request date	November 2, 2022
Legal basis	Article 22, Paragraph 3 of the Patent Law
<p>Key points for decision: If there are distinguishing features between the technical solution claimed in the claim and the closest prior art, but the difference</p> <p>The special features belong to the conventional means in the relevant technical field, and those skilled in the art can obviously obtain the</p> <p>If the technical solution claimed in the claim is not obtained, the claim does not have an inventive step.</p>	

1. Cause of Action

The patent number of this patent is 201710318202.4, the application date is May 8, 2017, and the authorization announcement date is June 30, 2020.

The content of the claims of this patent authorization announcement is as follows:

"1. A method in a user equipment for wireless communication, comprising:

- receiving a first wireless signal;

The first wireless signal is sent within a first time unit, the first bit block is used to generate the first wireless signal, and the first

The wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol among the G multi-carrier symbols,

The multi-antenna related reception of the given multi-carrier symbol is related to the time domain resources occupied by the given multi-carrier symbol and the relative position of the first time point in the time domain;

The first time point is a time point within the first time unit; and G is a positive integer.

2. The method according to claim 1, comprising:

- receiving a second wireless signal;

The second wireless signal is sent within the first time unit, and the second wireless signal is used to determine the G multi-carrier symbols occupying

Used time domain resources.

3. The method according to claim 2, wherein the time domain resources occupied by the given multi-carrier symbol are

After the time point, the second wireless signal is used to determine the multi-antenna related reception for the given multi-carrier symbol; or the given

The time domain resources occupied by the multi-carrier symbol are before the first time point, and the multi-antenna related access for the given multi-carrier symbol

The reception is related to the multi-antenna related reception of the second wireless signal.

4. The method according to any one of claims 1 to 3, wherein the multi-antenna related reception refers to the corresponding use

The beamforming vector for reception; or the multi-antenna related reception refers to the corresponding antenna port for transmission.

5. The method according to any one of claims 1 to 3, comprising:

- receiving a first message;

The first information is used to determine the first time point.

6. The method according to claim 4, comprising:

- receiving a first message;

The first information is used to determine the first time point.

7. The method according to any one of claims 1 to 3, comprising:

- Sending a second message;

The second information is used to determine the first time point.

8. The method according to claim 4, comprising:

- Sending a second message;

The second information is used to determine the first time point.

9. The method according to claim 5, comprising:

- Sending a second message;

The second information is used to determine the first time point.

10. The method according to claim 6, comprising:

- Sending a second message;

The second information is used to determine the first time point.

11. The method according to any one of claims 1 to 3, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

12. The method according to claim 4, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

13. The method according to claim 5, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

14. The method according to claim 6, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

15. The method according to claim 7, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

16. The method according to claim 8, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

17. The method according to claim 9, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

18. The method according to claim 10, comprising:

- receiving third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

19. A method in a base station device for wireless communication, comprising:

-sending a first wireless signal;

The first wireless signal is sent within a first time unit, the first bit block is used to generate the first wireless signal, and the first

The wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol among the G multi-carrier symbols,

The multi-antenna related reception of the given multi-carrier symbol is related to the time domain resources occupied by the given multi-carrier symbol and the relative position of the first time point in the time domain;

The first time point is a time point within the first time unit; and G is a positive integer.

20. The method according to claim 19, comprising:

- sending a second wireless signal;

The second wireless signal is sent within the first time unit, and the second wireless signal is used to determine the G multi-carrier symbols occupying

Used time domain resources.

21. The method according to claim 20, wherein the time domain resources occupied by the given multi-carrier symbol are in the first

After the time point, the second wireless signal is used to determine the multi-antenna related reception for the given multi-carrier symbol; or

The time domain resources occupied by the given multi-carrier symbol are before the first time point, and the multi-antenna correlation for the given multi-carrier symbol

The receiving is related to the multi-antenna related reception of the second wireless signal.

22. The method according to any one of claims 19 to 21, wherein the multi-antenna related reception refers to the corresponding

The beamforming vector used for reception; or the multi-antenna related reception refers to the corresponding antenna port used for transmission.

23. The method according to any one of claims 19 to 21, comprising:

- Sending the first message;

The first information is used to determine the first time point.

24. The method according to claim 22, comprising:

- Sending the first message;

The first information is used to determine the first time point.

25. The method according to any one of claims 19 to 21, comprising:

- receiving second information;

The second information is used to determine the first time point.

26. The method according to claim 22, comprising:

- receiving second information;

The second information is used to determine the first time point.

27. The method according to claim 23, comprising:

- receiving second information;

The second information is used to determine the first time point.

28. The method according to claim 24, comprising:

- receiving second information;

The second information is used to determine the first time point.

29. The method according to any one of claims 19 to 21, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

30. The method according to claim 22, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

31. The method according to claim 23, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

32. The method according to claim 24, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

33. The method according to claim 25, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

34. The method according to claim 26, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

35. The method according to claim 27, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

36. The method according to claim 28, comprising:

- Send third party information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

37. A user equipment for wireless communication, comprising:

- a first transceiver, receiving a first wireless signal;

The first wireless signal is sent within a first time unit, the first bit block is used to generate the first wireless signal, and the first

The wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol among the G multi-carrier symbols,

The multi-antenna related reception of the given multi-carrier symbol is related to the time domain resources occupied by the given multi-carrier symbol and the relative position of the first time point in the time domain;

The first time point is a time point within the first time unit; and G is a positive integer.

38. The user equipment according to claim 37, wherein the first transceiver receives a second wireless signal; the second wireless signal

The signal is sent within the first time unit, and the second wireless signal is used to determine the time domain resources occupied by the G multi-carrier symbols.

39. The user equipment according to claim 38, wherein the time domain resources occupied by the given multi-carrier symbol are in the

After the first time point, the second wireless signal is used to determine the multi-antenna related reception for the given multi-carrier symbol; or

The time domain resources occupied by the given multi-carrier symbol are before the first time point, and the multi-antenna phase for the given multi-carrier symbol

The related reception is related to the multi-antenna related reception of the second wireless signal.

40. The user equipment according to any one of claims 37 to 39, wherein the multi-antenna related reception is

The corresponding beamforming vector for reception; or the multi-antenna related reception refers to the corresponding antenna port for transmission.

41. The user equipment according to any one of claims 37 to 39, wherein the first transceiver receives a first signal.

information; the first information is used to determine the first time point.

42. The user equipment according to claim 40, wherein the first transceiver receives first information; the first information is used

To determine the first time point.

43. The user equipment according to any one of claims 37 to 39, wherein the first transceiver sends the second signal

information; the second information is used to determine the first time point.

44. The user equipment according to claim 40, wherein the first transceiver sends second information; the second information is used

To determine the first time point.

45. The user equipment according to claim 41, wherein the first transceiver sends second information; the second information is used

To determine the first time point.

46. The user equipment according to claim 42, wherein the first transceiver sends second information; the second information is used

To determine the first time point.

47. The user equipment according to any one of claims 37 to 39, wherein the first transceiver receives a third signal.

The third information is used to determine a candidate scheme for multi-antenna related reception corresponding to the G multi-carrier symbols.

48. The user equipment according to claim 40, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

49. The user equipment according to claim 41, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

50. The user equipment according to claim 42, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

51. The user equipment according to claim 43, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

52. The user equipment according to claim 44, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

53. The user equipment according to claim 45, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

54. The user equipment according to claim 46, wherein the first transceiver receives third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

55. A base station device for wireless communication, comprising:

- a second transceiver, transmitting a first wireless signal;

The first wireless signal is sent within a first time unit, the first bit block is used to generate the first wireless signal, and the first

The wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol among the G multi-carrier symbols,

The multi-antenna related reception of the given multi-carrier symbol is related to the time domain resources occupied by the given multi-carrier symbol and the relative position of the first time point in the time domain;

The first time point is a time point within the first time unit; and G is a positive integer.

56. The base station device according to claim 55, wherein the second transceiver sends a second wireless signal:

The signal is sent within the first time unit, and the second wireless signal is used to determine the time domain resources occupied by the G multi-carrier symbols.

57. The base station device according to claim 56, wherein the time domain resources occupied by the given multi-carrier symbol are in the

After the first time point, the second wireless signal is used to determine the multi-antenna related reception for the given multi-carrier symbol; or

The time domain resources occupied by the given multi-carrier symbol are before the first time point, and the multi-antenna phase for the given multi-carrier symbol

The related reception is related to the multi-antenna related reception of the second wireless signal.

58. The base station device according to any one of claims 55 to 57, wherein the multi-antenna related reception is

The corresponding beamforming vector for reception; or the multi-antenna related reception refers to the corresponding antenna port for transmission.

59. The base station device according to any one of claims 55 to 57, wherein the second transceiver sends the first signal

information; the first information is used to determine the first time point.

60. The base station device according to claim 58, wherein the second transceiver sends first information; the first information is used

To determine the first time point.

61. The base station device according to any one of claims 55 to 57, wherein the second transceiver receives the second signal

information; the second information is used to determine the first time point.

62. The base station device according to claim 58, wherein the second transceiver receives second information; the second information is used

To determine the first time point.

63. The base station device according to claim 59, wherein the second transceiver receives second information; the second information is used

To determine the first time point.

64. The base station device according to claim 60, wherein the second transceiver receives second information; the second information is used

To determine the first time point.

65. The base station device according to any one of claims 55 to 57, wherein the second transceiver transmits third information;

The third information is used to determine candidate schemes for multi-antenna-related reception corresponding to the G multi-carrier symbols.

66. The base station device according to claim 58, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

67. The base station device according to claim 59, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

68. The base station device according to claim 60, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

69. The base station device according to claim 61, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

70. The base station device according to claim 62, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

71. The base station device according to claim 63, wherein the second transceiver sends third information; the third information is used

A candidate scheme for determining multi-antenna-related reception corresponding to the G multi-carrier symbols.

72. The base station device according to claim 64, wherein the second transceiver sends third information; the third information is used

for determining a candidate scheme for multi-antenna-related reception corresponding to the G multi-carrier symbols."

On November 2, 2022, the applicant filed a request for invalidation with the State Intellectual Property Office, arguing that claims 1-72 were unclear.

It does not comply with the provisions of Article 26, Paragraph 4 of the Patent Law; Claims 1-72 are not supported by the description and do not comply with the provisions of Article 26, Paragraph 4 of the Patent Law.

The technical solutions of claims 4-18, 22-36, 40-54, and 58-72 are not sufficiently disclosed in the specification and do not comply with Article 26, Paragraph 3 of the Patent Law.

, we request that all claims 1-72 of this patent be declared invalid, and submit the following attachments:

Appendix 1: Text of this patent authorization announcement.

After passing the formal review, the National Intellectual Property Administration accepted the above invalidation request on November 8, 2022 and sent the invalidation request and

The attachments were transferred to the patent owner, and a collegial panel was formed to review the case.

The petitioner filed additional comments on December 2, 2022, and submitted the following evidence:

Evidence 1: CN105379140A, published on March 2, 2016;

Evidence 2: US20160323028A1 and its Chinese translation, published on November 3, 2016;

Evidence 3: 3GPP technical document R1-1707475 and its Chinese translation, which the petitioner claims was published on May 6, 2017;

Evidence 4: 3GPP technical document R1-1704618 and its Chinese translation, which the petitioner claims was published on March 25, 2017;

Evidence 5: 3GPP technical document R1-1708334 and its Chinese translation, which the petitioner claims was published on May 6, 2017;

Evidence 6: 3GPP technical document R1-1707830 and its Chinese translation, which the petitioner claimed was published on May 7, 2017;

Evidence 7: 3GPP technical document R1-1700539 and its Chinese translation, which the petitioner claimed was published on January 10, 2017;

Evidence 8: 3GPP technical document R1-1609080 and its Chinese translation, which the petitioner claimed was published on September 30, 2016;

Evidence 9: 3GPP technical document R1-1610239 and its Chinese translation, which the petitioner claimed was published on September 30, 2016;

Evidence 10: Scanned copies of some pages from the publication "LTE in UMTS: Evolution to LTE-Advanced" (2nd edition), Harri Holma

Compiled by Lang Weimin et al., translated by Lang Weimin et al., Machinery Industry Press, ISBN 978-7-111-39440-2, 1st edition, 1st printing, October 2012;

Evidence 11: Scanned copies of some pages from the publication "3GPP Long Term Evolution (LTE) Technical Principles and System Design", edited by Shen Jia et al., People's Post and Telecommunications

Publishing House, ISBN 978-7-115-18572-3, 1st edition, 1st printing, Beijing, November 2008;

Evidence 12: Scanned copies of some pages from the publication "4G Mobile Communication Technology: The Authoritative Guide to LTE and LTE-Advanced," by Erik Dahlman et al.

Written by Du Jihui et al., translated by Posts and Telecommunications Press, ISBN 978-7-115-27854-8, first edition in May 2012, sixth edition in Beijing in January 2014

printing.

The applicant believes that claims 1-72 of this patent are unclear and not supported by the specification, and do not comply with the provisions of Article 26, Paragraph 4 of the Patent Law.

The technical solutions of claims 1-72 are not fully disclosed in the specification and do not comply with the provisions of Article 26, paragraph 3 of the Patent Law; claims 1-3,

5, 7, 9, 19-21, 23, 25, 27, 37-39, 41, 43, 45, 55-57, 59, 61, 63 are not novel and do not comply with Article 22 of the Patent Law.

The provisions of Article 22, paragraph 2, involve evidence 1, 2, 3, and 4; claims 1-72 are not creative and do not comply with the provisions of Article 22, paragraph 3 of the Patent Law.

Involving evidence 1-12, among which evidence 1, 2, 3, 4, and 5 are respectively regarded as the closest prior art, and evidence 10-12 is used as common knowledge evidence.

according to.

The patentee submitted a statement of opinion on December 7, 2022 regarding the above invalidation request, arguing that the invalidation reasons raised by the applicant are all invalid.

Not true.

The collegial panel of this case issued a notice of forwarding documents on January 5, 2023, forwarding the above-mentioned supplementary documents submitted by the applicant on December 2, 2022.

The opinions and evidence shall be forwarded to the patentee, and the above-mentioned statement of opinions and its attachments filed by the patentee on December 07, 2022 shall be forwarded to the petitioner.

In response to the above-mentioned forwarded documents, the patentee submitted a statement of opinion on February 3, 2023, arguing that claims 1-72 comply with the provisions of the Patent Law.

Relevant regulations; objection was raised to the publication time of evidence 3, 5, and 6, arguing that there was no evidence to prove that the publication time of evidence 3, 5, and 6 was in the application of this patent.

Before the date of application; and raised objections to part of the translation of evidence 2 and evidence 5.

The panel of judges in this case issued a notice of forwarding documents on February 14, 2023, forwarding the above-mentioned opinion statement of the patentee to the applicant, and

An oral hearing notice was issued to both parties on March 23, 2023, and the oral hearing is scheduled to be held on April 23, 2023.

The applicant shall submit the following original evidence before the oral hearing:

Original Document 1: Notarial Certificate No. 4929 (2023) Jing Chang'an Neijing Zhengzi, the applicant claims that the content of this notarial certificate is the download of Exhibits 3-9

process;

Original Document 2: Document Copy Certificate issued by Shanghai Library, certificate number GCZM-20230210-1681-0002, which the applicant claims as evidence

10 proof of collection;

Original Document 3: Document Copy Certificate issued by Shanghai Library, certificate number GCZM-20230210-1681-0003, which the applicant claims as evidence

11 proof of collection.

The oral hearing was held as scheduled, and both parties attended the oral hearing.

There is no objection to the identity and qualifications of the members, no request for recusal of the members of the collegial panel, and the following matters are clarified:

1. The petitioner clarifies that it abandons its opinion in the petition filed on November 2, 2022, and reiterates its opinion in the supplementary opinion filed on December 2, 2022.

shall prevail.

2. The applicant shall present the original of evidence 12 in court, and the patentee shall verify the authenticity of evidence 1, 2, 4, 7-9, and 12.

There is no objection to the disclosure time; there is an objection to the disclosure time of evidence 3, 5, and 6. It is believed that the disclosure date of evidence 3, 5, and 6 should be the last day of the meeting.

It cannot be used as prior art after the filing date of this application; the authenticity of evidence 10 and evidence 11 is not recognized, and it is believed that evidence 10 and evidence

11 is inconsistent with the content of the copyright page of the appendix attached to the document reproduction certificate provided by the applicant, and the corresponding documents of evidence 10 and evidence 11 are ...

The stamp date of the copy certificate is February 10, 2022, while the search date is February 9, 2023, which is obviously inconsistent.

Evidence 11 and Evidence 12 are not textbooks and cannot be used as common knowledge evidence; I have objections to the accuracy of some Chinese translations of Evidence 2 and 5.

There is no objection to the rest of the Chinese translation.

The collegial panel informed both parties in court that since the document copies of evidence 10 and evidence 11 submitted by the applicant had the same stamp and date as the original

The search time is obviously inconsistent, and the document version attached to the document copy certificate of evidence 10 and evidence 11 is inconsistent with the evidence submitted by the applicant.

The versions are inconsistent. In this case, the panel does not recognize the authenticity of evidence 10 and evidence 11.

The applicant acknowledges the objection raised by the patentee to the Chinese translation of evidence 2 and 5. The applicant believes that the publication date of evidence 3, 5, and 6 is the same as that of the 4929th

The relevant evidence in the notarized document attachment corresponds to the file upload time of that line, which is a common practice of 3GPP.

3. The main combination method used by the applicant to comment on the creativity is Evidence 1 combined with common knowledge, or Evidence 1 combined with Evidence 7 and common knowledge.

Both parties fully expressed their opinions based on written submissions.

At this point, the collegial panel believes that the facts of the case are clear and a review decision can be made.

II. Reasons for the Decision

(1) Examination Basis

This invalidation request examination decision is based on the text of this patent authorization announcement.

(2) Evidence identification

Evidence 1 is a Chinese patent document. The patentee has no objection to the authenticity and publication time of Evidence 1, and the panel recognizes this.

1 was disclosed earlier than the application date of this patent and can be used as prior art to evaluate the inventiveness of this patent.

(3) Creativity

Article 22, paragraph 3 of the Patent Law provides that creativity means that the invention has outstanding substantive features and significant progress compared with the prior art.

This utility model has substantial features and progress.

1. Claim 1 claims a method in a user equipment for wireless communication, and Exhibit 1 discloses a method for

Method and apparatus for sending and receiving data in a communication system with a certain shape, and specifically discloses the following contents (see the full text of Exhibit 1, especially the specification No. 0001,

0006. 0035-0109. Figure 3-11b):

In a first example, a method for allocating a channel in consideration of a mobile station decoding scheduling in a communication system using beamforming is provided.

Method and apparatus for transmitting and receiving data with minimal delay;

[0041] In order to achieve a wide bandwidth, the introduction of an extremely high frequency system, that is, a millimeter wave (MMW) system, can be expected, and beamforming can be

Considered for use in the MMW system to overcome propagation path loss;

[0048] FIG. 2 illustrates an example beamforming-based communication between a BS and an MS according to the present disclosure.

[0052] In the case of multiple accesses to BS 200 by MSs 210, 220, and 230, BS 200 can send multiple accesses to MSs 210, 220, and 230 on a specific control channel.

Each of 220, and 230 indicates resource allocation for data transmission. In an embodiment, each of MS 210, 220, and 230 indicates resource allocation for data transmission.

The control channel that indicates the allocated resources may be called a scheduling assignment channel or a physical downlink control channel (PDCCH).

Data may be multiplexed in a time division multiplexing (TDM) manner in a subframe as a transmission time unit. In an embodiment, a subframe and a scheduling period may be of the same duration.

Same transmission unit;

[0055] Referring to FIG3, in one time unit, data 320 can be sent shortly after the control channel PDCCH 310, and the MS can

The BS obtains scheduling information by receiving and decoding the signal on the PDCCH 310, such as the scheduling information about the BS that has selected the data 320 for transmission.

Tx beam and MIMO transmission mode information;

[0057] A specific decoding delay - interval-L315 - can be adopted so that the MS decodes PDCCH 310 ... during interval-L315

The MS may face signal loss issues;

[0072] FIG8 shows a method in which the same Rx beam is applied to a control channel and a data region following the control channel according to the present disclosure.

An example subframe structure of

[0073] Referring to FIG. 8, a subframe can start with a PDCCH region 810, and the BS can use the same beam as that used for the PDCCH region 810.

or similar beams transmit data signals in a data region 820 that spans a time interval TL815 starting from the end of the PDCCH region 810;

[0074] The MS can use the same Rx beam as that used for the PDCCH region 810 in the time interval starting from the end of the PDCCH region 810.

The data signal is received during the time interval TL815. After the time interval TL815, the MS can use the Rx beam obtained by decoding the PDCCH area 810 to receive the data signal.

Receive data signal;

[0075] The length of the time interval TL815 can be agreed upon between the BS and the MS, and the BS broadcasts the time interval from the preset time interval between the BS and the MS.

Indicated among multiple values or signaled by the BS;

[0077] For information transmission after time interval TL815, the BS can use the Tx beam and/or MIMO transmission determined by scheduling.

mode, regardless of the Tx beam used in the PDCCH region 810 .

From the above contents disclosed in Evidence 1, it can be seen that Evidence 1 can be applied to extremely high frequency communication systems using beamforming and MIMO.

The technical problem is how to avoid the signal loss problem faced during the specific decoding delay of the user equipment. The technical solution adopted is:

The first subframe of the PDCCH area, for the data signal in the time interval TL815 after the PDCCH area, the user equipment adopts the same method as the one receiving the PDCCH.

For data signals after time interval TL815, the user equipment uses the data obtained by decoding the PDCCH area.

The data area signal following the PDCCH area is equivalent to the first wireless signal of this patent, which is received by the PDCCH area.

The data is sent in a subframe at the beginning of the zone, and a subframe is equivalent to the first time unit of this patent; the user equipment sends the data in the time interval TL815.

The data after the time interval TL815 uses a different receiving beam, and the end point of the time interval TL815 is equivalent to the first time in this patent.

point, which is a time point within the first time unit; the receiving beam of the wireless signal after the PDCCH area of the user equipment and the time interval TL815

Related, equivalent to the multi-antenna related reception of the first wireless signal and the time domain resources occupied by the first wireless signal and the first time point at time

The relative position on the domain.

Therefore, the distinguishing feature of claim 1 compared with evidence 1 is that the first bit block is used to generate the first wireless signal, the first

The wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol among the G multi-carrier symbols,

The multi-antenna related reception of the given multi-carrier symbol is related to the time domain resources occupied by the given multi-carrier symbol and the relative position of the first time point in the time domain.

G is a positive integer. That is, claim 1 defines the generation, composition, and multi-antenna related reception of the first wireless signal as being for a given multi-carrier

Wave symbols, while Evidence 1 does not clearly disclose the generation and composition of the data signal in the data area, and its multi-antenna related reception is aimed at the data signal.

In view of the above distinguishing features, the technical problem actually solved by claim 1 is how to form the first wireless signal.

For those skilled in the art, firstly, generating wireless signals from bit blocks is a common practice in this field; secondly, Evidence 1 has been made public.

The subframe starts with the PDCCH area 810. Those skilled in the art know that the PDCCH channel (physical downlink control channel) is LTE (3GPP long-term

Multi-carrier modulation is a key technology in the system after LTE, such as OFDM (or OFDM) used in LTE system.

Frequency division multiplexing (FDM) is a type of multi-carrier modulation that has good resistance to multipath fading and can support multi-user access.

1 The modulation method of the signal is not clearly disclosed, but the subframe starts with the PDCCH area, which is the subframe in the system after LTE.

It is a common practice in the art to transmit wireless signals including multiple multi-carrier symbols. Accordingly, the multi-antenna related reception at the receiving end is aimed at

It is also common practice in the art to assign multi-carrier symbols.

In summary, it is obvious that a person skilled in the art can obtain the technical solution of claim 1 based on evidence 1 and the conventional means in this field.

Therefore, claim 1 does not possess the inventiveness required by Article 22, paragraph 3 of the Patent Law relative to the combination of evidence 1 and customary means.

The patentee believes that the first time point of Evidence 1 is between the data and other data and is related to different types of data, while the G multiple

The nature of the carrier symbols is identical; the relationship between the first time point and the multi-antenna related reception of the multi-carrier symbol is flexible, and the multi-carrier symbol has

It may be completely before, after, or in between the first point in time.

In this regard, the panel believes that: Evidence 1 has been disclosed (see above): the length of the time interval TL815 can be reached between the BS and the MS.

The consistency is indicated by the BS through broadcast from multiple values preset between the BS and the MS, or notified by the BS using a signal.

The length of the time interval TL815 can also be flexibly set according to needs. There are also data signals that are completely within the time interval TL815 and completely

Outside the time interval, or both inside and outside the time interval. As for the "data" and "other data" shown in Figure 8 of Evidence 1, they are only

In order to distinguish whether the received beam is the same beam as the received control channel signal or the beam obtained after decoding the control channel signal, it is not emphasized that the different

Therefore, the collegial panel does not support the patentee's opinion.

2. Claim 2 refers to Claim 1, and the contents disclosed in Evidence 1 are as described above. In Evidence 1, the signal in the PDCCH area is equivalent to the

The second wireless signal of the patent is sent in a subframe starting with the PDCCH area, which is equivalent to being sent in the first time unit.

It is a common method in the art to schedule the time domain resources of the subsequent data signal, for example, PDCCH channel data is used to determine the PDSCH channel (physical

Therefore, on the basis that the claim cited by it does not have an inventive step, the claim

It also does not possess the creativity required by Article 22, Paragraph 3 of the Patent Law.

3. Claim 3 refers to claim 2, and evidence 1 discloses (see above): Referring to FIG8, a subframe can start with a PDCCH region 810,

And the BS can transmit a data signal in the data region 820 using a beam that is the same as or similar to the beam used for the PDCCH region 810.

Region 820 spans the time interval TL815 starting from the end of the PDCCH region 810; the MS can use the same Rx beam as that used for the PDCCH region 810,

The data signal is received during the time interval TL815 starting from the end of the PDCCH region 810 (equivalent to the time interval occupied by the given multi-carrier symbol).

The time domain resource is before the first time point, the multi-antenna related reception for the given multi-carrier symbol and the multi-antenna related reception for the second wireless

After the time interval TL815, the MS can use the data acquired by decoding the PDCCH region 810.

Rx beam to receive data signals (equivalent to the time domain resources occupied by the given multi-carrier symbol after the first time point, the first

The two wireless signals are used to determine the multi-antenna related reception for the given multi-carrier symbol). It can be seen that Evidence 1 discloses the claim

3, the additional technical features of which do not have an inventive step, and therefore the claim does not have the inventive step required by Article 22, Paragraph 3 of the Patent Law.

Creativity of regulations.

4. Claim 4 refers to any one of claims 1-3, and those skilled in the art know that beamforming is based on beamforming vector

It can be calculated and realized through the antenna port, and the receiving beam has a corresponding relationship with the transmitting beam. Therefore, the receiving beam related to the multi-antenna

It is common knowledge in the art that the beamforming vector used for receiving or the corresponding antenna port used for transmitting is referred to as the beamforming vector used for receiving or the corresponding antenna port used for transmitting.

On the basis that the patent claim does not have an inventive step, the claim also does not have an inventive step as stipulated in Article 22, Paragraph 3 of the Patent Law.

5. Claims 5 and 7 refer to any one of claims 1-3 respectively. Evidence 1 discloses (see above): the length of the time interval TL815

The speed can be agreed upon between the BS and the MS, indicated by the BS through broadcast from a number of values preset between the BS and the MS, or indicated by the BS through signaling.

The signal used by the BS to notify the length of the time interval TL815 is equivalent to the first information, which is used to determine the first time point.

The user equipment sends the second information to the base station for negotiation and determination of the first time point, which is also a common method used by those skilled in the art.

The additional technical features of claim 7 are disclosed by evidence 1, and the additional technical features of claim 7 are common practices in the art.

On the basis that claims 5 and 7 do not have the inventiveness stipulated in Article 22, paragraph 3 of the Patent Law, they also do not have the inventiveness stipulated in Article 22, paragraph 3 of the Patent Law.

6. Claim 11 refers to any one of claims 1-3, and the base station sends the third information to enable the user equipment to determine that the data signal corresponds to

The candidate scheme of multi-antenna related reception is a common means used by those skilled in the art to enable user equipment to receive data signals.

On the basis that the claim it cites does not have the inventiveness, this claim also does not have the inventiveness stipulated in Article 22, Paragraph 3 of the Patent Law.

7. The additional technical features of claim 6 are the same as those of claim 5, and the additional technical features of claims 8-10 are the same as those of claim 7.

The additional technical features of claims 12-18 are the same as those of claim 11. Based on the same reasons as claims 5, 7, and 11, claims 6,

8-10 and 12-18 also do not possess the inventiveness stipulated in Article 22, Paragraph 3 of the Patent Law.

8. Claims 19-36 claim a method for a base station device used for wireless communication, which is the same as the method for wireless communication claimed in claims 1-18.

For the method in the base station device corresponding to the method in the user device, based on the same reasons as claims 1-18, claims 19-36 are not relevant to the evidence.

The combination of 1 and conventional means in the field does not have the creativity stipulated in Article 22, paragraph 3 of the Patent Law.

9. Claims 37-54 claim protection of user equipment used for wireless communication, and the user equipment claimed in claims 1-18

The method corresponds to the method in one-to-one correspondence. Claims 55-72 claim to protect the base station device used for wireless communication, which is different from the base station device claimed in claims 19-36.

The method in the preparation corresponds to each other. The sending and receiving of signals by a transceiver is a common method in this field. Therefore, based on the above-mentioned claims 1-36

For the same reason, claims 37-72 do not possess the invention as defined in Article 22, Paragraph 3 of the Patent Law in relation to the combination of evidence 1 and conventional means in the art.

sex.

In summary, the grounds for invalidation of claims 1-72 as they do not comply with Article 22, Paragraph 3 of the Patent Law are established.

This decision will not further comment on the reasons and evidence for invalidation.

III. Decision

The invention patent No. 201710318202.4 is declared invalid in its entirety.

If the parties are dissatisfied with this decision, they may file a claim with the Beijing Intellectual Property Office within three months from the date of receipt of this decision in accordance with Article 46, Paragraph 2 of the Patent Law.

According to the provisions of this paragraph, after one party files a lawsuit, the other party may join the lawsuit as a third party.

Collegial Panel Leader: Gao Xue

Presiding Judge: Wang Tingting

Counselor: Li Lingling

Patent Office Reexamination and Invalidation Review Department