Machine Translated by Google

State Intellectual Property Office

100020

Room 2606, Quintiles International Building, No. 12 Chaowai Street, Chaoyang District, Beijing

Ding Chen and Gong Quanzhou of Beijing Zhengjian Yongshen Law Firm (13671060479)

Date of publication:

Application number or patent number: 202010373731.6

Publication number:

Case Number: 4W115205

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. 562020)

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: The main text of the decision is 13 pages (the main text starts from page 2).

Collegial Panel Leader: Gao Xue

Presiding Judge: Wang

Tingting Counselor: Li Lingling

Patent Office Reexamination and Invalidation Review Department

APPLE 1154
Apple v. Apex Beam
IPR2025-00894

Machine Translated by Google

State Intellectual Property Office

Decision on Invalidation Request (No. 562020)

Case Number	No. 4W115205
Decision Day	May 30, 2023
Name of invention	Method and device for wireless communication in base station and user equipment
International Classification Number	H04L 5/00,H04B 7/06,H04L 27/26,H04W 24/02,H04W 72/04
Invalidation applicant	Zhang Peipei
Patentee	Aurora Technology Consulting LLC
Patent Number	202010373731.6
Application date	May 8, 2017
Priority date	
Authorization announcement date	April 19, 2022
Invalidation request date	November 2, 2022
Legal basis	Article 22, Paragraph 3 of the Patent Law
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 The special features belong to the conventional means in the relevant technical field, and those skilled in the art can obviously obtain the If the technical solution claimed in the claim is not obtained, the claim does not have an inventive step.	

Machine Translated by Google

1. Cause of Action

The patent number of this patent is 202010373731.6, the application date is May 8, 2017, and the authorization announcement date is April 19, 2022.

This patent is a divisional application of the Chinese patent application number 201710318202.4. The claims of this patent at the time of the authorization announcement are as follows:

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

- receiving a first wireless signal;

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

The first wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol in the G multi-carrier symbols

symbol, the multi-antenna related reception of the given multi-carrier symbol and the time domain resources occupied by the given multi-carrier symbol and the first time point

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 a PDCCH; the second wireless signal is sent within the first time unit, and the second wireless signal is used

Determine time domain resources occupied by the G multi-carrier symbols.

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

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

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

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

4. The method according to any one of claims 1 to 3, wherein the first time point is the time at which the G multi-carrier symbols are located.

At a time point in the time domain, a first receiving beam is used to receive multi-carrier symbols in the first wireless signal before the first time point,

The second receiving beam is used to receive multi-carrier symbols in the first wireless signal after the first time point.

5. The method according to any one of claims 2 to 3, wherein the first receiving beam is used to receive the second wireless signal.

and the multi-carrier symbol in the first wireless signal before the first time point, the second receiving beam is used to receive the multi-carrier symbol in the first wireless signal

A multi-carrier symbol after the first time point.

6. The method according to any one of claims 1 to 3, wherein if the first time point is between the G multi-carrier symbols

After that, the first receiving beam is used to receive the G multi-carrier symbols; if the first time point is before the G multi-carrier symbols, the second receiving beam is used to receive the G multi-carrier symbols;

The reception beam is used to receive the G multi-carrier symbols.

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

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

8. 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, and the first information is RRC signaling.

Machine Translated by Google

9. 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.

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

- receiving third information;

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

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

-sending a first wireless signal;

The first wireless signal is a PDSCH; the first wireless signal is sent in a first time unit, and the first bit block is used to generate The first wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol in the G multi-carrier symbols symbol, the multi-antenna related reception of the given multi-carrier symbol and the time domain resources occupied by the given multi-carrier symbol and the first time point The first time point is a time point within the first time unit; and G is a positive integer.

12. The method according to claim 11, comprising:

- sending a second wireless signal;

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

13. The method according to claim 12, wherein the time domain resource occupied by the given multi-carrier symbol is at the first time point Thereafter, the second wireless signal is used to determine the multi-antenna related reception for the given multi-carrier symbol; or the given multi-carrier symbol The time domain resources occupied by the multi-carrier symbol are before the first time point, and the multi-antenna related reception and The multi-antenna related reception of the second wireless signal is related.

14. The method according to any one of claims 11 to 13, wherein the first time point is the time at which the G multi-carrier symbols are located. At a time point in the time domain of signal, and the second receiving beam is used to receive multi-carrier symbols in the first wireless signal after the first time point.

15. The method according to any one of claims 12-13, wherein a first receiving beam is used to receive the second wireless signal and a multi-carrier symbol in the first wireless signal before the first time point, the second receiving beam is used to receive the first wireless signal The multi-carrier symbols after the first time point in the.

16. The method according to any one of claims 11 to 13, wherein if the first time point is within the G multi-carrier symbols Afterwards, the first receiving beam is used to receive the G multi-carrier symbols; if the first time point is before the G multi-carrier symbols, the second The receive beam is used to receive the G multi-carrier symbols.

17. The method according to any one of claims 11 to 13, wherein the multi-antenna related reception refers to the corresponding

Machine Translated by Google

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

18. The method according to any one of claims 11 to 13, comprising:

- Sending the first message;

The first information is used to determine the first time point, and the first information is RRC signaling.

19. The method according to any one of claims 11 to 13, comprising:

- receiving second information;

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

20. The method according to any one of claims 11 to 13, comprising:

- Send third party information;

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

21. A user equipment for wireless communication, comprising:

-a first module, receiving a first wireless signal;

The first wireless signal is a PDSCH; the first wireless signal is sent in a first time unit, and the first bit block is used to generate The first wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol in the G multi-carrier symbols symbol, the multi-antenna related reception of the given multi-carrier symbol and the time domain resources occupied by the given multi-carrier symbol and the first time point The first time point is a time point within the first time unit; and G is a positive integer.

22. The user equipment according to claim 21, wherein the first module receives a second wireless signal; the second wireless signal is a PDCCH; The second wireless signal is sent within the first time unit, and the second wireless signal is used to determine the time occupied by the G multi-carrier symbols. Time domain resources.

23. The user equipment according to claim 22, 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.

24. The user equipment according to any one of claims 21 to 23, wherein the first time point is the G multi-carrier symbols At a time point in the time domain, the first receiving beam is used to receive multiple carriers in the first wireless signal before the first time point. The second receiving beam is used to receive multi-carrier symbols in the first wireless signal after the first time point.

25. The user equipment according to any one of claims 22-23, wherein the first receiving beam is used to receive the second wireless signal and the multi-carrier symbol before the first time point in the first wireless signal, the second receiving beam is used to receive the first wireless signal The multi-carrier symbols in the signal after the first time point.

26. The user equipment according to any one of claims 21 to 23, wherein if the first time point is within the G multi-carrier

Machine Translated by Google

symbol, the first receiving beam is used to receive the G multi-carrier symbols; if the first time point is before the G multi-carrier symbols,

The second receive beam is used to receive the G multi-carrier symbols.

27. The user equipment according to any one of claims 21 to 23, wherein the multi-antenna related reception refers to the corresponding

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

28. The user equipment according to any one of claims 21 to 23, wherein the first module receives first information;

Information is used to determine the first time point, and the first information is RRC signaling.

29. The user equipment according to any one of claims 21 to 23, wherein the first module sends second information;

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

30. The user equipment according to any one of claims 21 to 23, wherein the first module receives third information;

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

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

- A second module, sending a first wireless signal;

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

The first wireless signal includes G multi-carrier symbols; for any given multi-carrier symbol in the G multi-carrier symbols

symbol, the multi-antenna related reception of the given multi-carrier symbol and the time domain resources occupied by the given multi-carrier symbol and the first time point

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

32. The base station device according to claim 31, wherein the second module sends a second wireless signal; the second wireless signal is a PDCCH;

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

Time domain resources.

33. The base station device according to claim 32, 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.

34. The base station device according to any one of claims 31 to 33, wherein the first time point is the G multi-carrier symbols

At a time point in the time domain, the first receiving beam is used to receive multiple carriers in the first wireless signal before the first time point.

The second receiving beam is used to receive multi-carrier symbols in the first wireless signal after the first time point.

35. The base station device according to any one of claims 32 to 33, wherein the first receiving beam is used to receive the second wireless

signal and the multi-carrier symbol before the first time point in the first wireless signal, the second receiving beam is used to receive the first wireless signal

The multi-carrier symbols in the signal after the first time point.

36. The base station device according to any one of claims 31 to 33, wherein if the first time point is within the G multi-carrier

symbol, the first receiving beam is used to receive the G multi-carrier symbols; if the first time point is before the G multi-carrier symbols,

Machine Translated by Google

The second receive beam is used to receive the G multi-carrier symbols.

37. The base station device according to any one of claims 31 to 33, wherein the multi-antenna related reception refers to the corresponding

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

38. The base station device according to any one of claims 31 to 33, wherein the second module sends first information;

Information is used to determine the first time point, and the first information is RRC signaling.

39. The base station device according to any one of claims 31 to 33, wherein the second module receives second information;

The information is used to determine the first time point.

40. The base station device according to any one of claims 31 to 33, wherein the second module sends third information;

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

On November 2, 2022, the applicant filed a request for invalidation with the State Intellectual Property Office, arguing that claims 1-40 were unclear.

It does not comply with the provisions of Article 26, Paragraph 4 of the Patent Law; Claims 1-3, 7-10, 11-13, 17-20, 21-23, 27-30, 31-33, 37-40 are

The invention is not supported by the specification and does not comply with the provisions of Article 26, Paragraph 4 of the Patent Law; the technical solutions of claims 7-10, 17-20, 27-30, and 37-40 are not in the

The disclosure in the specification is insufficient and does not comply with the provisions of Article 26, Paragraph 3 of the Patent Law. We request that all claims 1-40 of this patent be declared invalid.

The following attachments were submitted:

Appendix 1: Text of the authorization announcement of this patent.

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 forwarded to the patent owner, and a 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;

Machine Translated by Google

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 Jiuhui 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 1-40 are unclear and do not comply with Article 26, paragraph 4 of the Patent Law; claims 1-40 are not explained.

The technical solutions of claims 1-40 are not sufficiently disclosed in the specification and do not meet the requirements of Article 26, Paragraph 4 of the Patent Law.

Article 26, paragraph 3 of the Patent Law; Claims 1-3, 9, 11-13, 19, 21-23, 29, 31-33, and 39 are not novel and do not meet the requirements of

The provisions of Article 22, Paragraph 2 of the Patent Law, concerning evidence 1-4; claims 1-40 are not inventive and do not meet the requirements of Article 22, Paragraph 3 of the Patent Law.

The provisions involve evidence 1-12, of which evidence 1, 2, 3, 4, and 5 are the closest prior art, and evidence 10-12 is used as common knowledge.

Identification evidence.

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 December 7, 2022, forwarding the above-mentioned supplementary documents submitted by the applicant on December 2, 2022.

The opinions and evidence were transferred to the patentee; a document transfer notice was issued on December 12, 2022, which

The above-mentioned statement of opinion and its attachments submitted shall be forwarded to the applicant.

On January 18, 2023, the patentee submitted a statement of opinion regarding the above-mentioned forwarded documents, arguing that claims 1-40 comply with the relevant provisions of the Patent Law.

The relevant provisions; objection was raised to the disclosure time of evidence 3, 5, and 6, arguing that there was no evidence to prove that the disclosure time of evidence 3, 5, and 6 was in the application of this patent.

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

The collegial panel of this case sent oral hearing notices to both parties on March 23, 2023, and the oral hearing is scheduled to be held on April 24, 2023.

The first hearing was held; and a notice of transfer of documents was issued on March 28, 2023, transferring the opinion statement submitted by the patent owner on January 18, 2023 to

To the requester.

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.

Machine Translated by Google

2. The applicant presents the original of evidence 12 in court. and the patentee verifies it in court. The patentee verifies the authenticity and disclosure time of evidence 1. 2. and 12.

No objection; objection to the disclosure time of evidence 3-9, believing that the disclosure date of evidence 3-9 should be the last day of the meeting; objection to evidence 10 and evidence

The authenticity of Evidence 11 is not recognized, and it is believed that Evidence 10 and Evidence 11 are inconsistent with the content recorded on the copyright page of the attachment attached to the document reproduction certificate provided by the applicant.

The content is inconsistent, and the stamp date of the document copy certificate corresponding to Evidence 10 and Evidence 11 is February 10, 2022, while the retrieval time is 2023.

On February 9, 2009, the two were obviously contradictory; it was believed that evidence 11 and evidence 12 were not textbooks and could not be used as common knowledge evidence;

I have objections to the accuracy of some of the Chinese translations in items 2 and 5, but have no objections to the rest of the Chinese translations.

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 3-9 is the same as that of No. 4929

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

3. The applicant's main combination method for evaluating 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.

Machine Translated by Google

[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.

Machine Translated by Google

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

a first wireless signal, the first wireless signal comprising 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 time domain resources occupied by the given multi-carrier symbol at the first time point.

The relative position on the antenna is related to the antenna, and G is a positive integer. That is, claim 1 defines the type, generation, composition and multi-antenna phase of the first wireless signal.

The reception of the relevant data is for a given multi-carrier symbol, while Evidence 1 does not clearly disclose the type, generation and composition of the data signal in the data area.

The relevant reception is for data signals. Based on the above distinguishing features, the technical problem actually solved by claim 1 is how to form a first wireless signal.

Number.

For those skilled in the art, firstly, generating wireless signals from bit blocks is a common practice in the art; 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

The physical channel proposed in the ICCC 802.11a Evolution system is a physical channel that is followed by the PDSCI I (Physical Downlink Shared Channel) to transmit data.

The control information of the channel is used to schedule the data information of the PDSCH channel, which is a common method in this field. That is, the first wireless signal is PDSCH.

Conventional means; Third, multi-carrier modulation is a key technology in systems after LTE, such as OFDM (Orthogonal Frequency Division Multiplexing) used in LTE systems

It is a type of multi-carrier modulation that has good resistance to multipath fading and can support multi-user access.

The modulation mode of the signal is open, but the wireless signal transmitted in the PDSCH channel includes multiple multi-carrier symbols, which is a common method in this field.

Accordingly, it is also a common practice in the art that multi-antenna correlation reception at the receiving end is targeted at given 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.

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 practice in the art to schedule the time domain resources of the PDSCH channel data that follows. Therefore, the claims cited therein do not have the ability to invent

On the basis of the patentability, the claim does not possess the inventiveness stipulated in Article 22, Paragraph 3 of the Patent Law.

3. Claim 3 refers to claim 2, and evidence 1 discloses (see above): Referring to ΓIG0 , a subframe can start with a PDCCI I 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.

Machine Translated by Google

4. Claim 4 refers to any one of claims 1-3. and evidence 1 discloses (see above): the MS can use the same area as that used for the PDCCH

The same Rx beam of 810 (equivalent to the first receive beam) receives data during the time interval TL815 starting from the end of the PDCCH region 810.

According to the signal (equivalent to the first receiving beam being used to receive the multi-carrier symbols in the first wireless signal before the first time point),

After the time interval TL815, the MS can use the Rx beam (equivalent to the second receiving beam) obtained by decoding the PDCCH area 810 to receive data.

According to the signal (equivalent to the second receiving beam being used to receive the multi-carrier symbols in the first wireless signal after the first time point).

It can be seen that Evidence 1 discloses the additional technical features of Claim 4. On the basis that the claim cited by it does not have an inventive step, this claim also

It does not possess the creativity stipulated in Article 22, Paragraph 3 of the Patent Law.

5. Claim 5 refers to any one of claims 2-3, and evidence 1 discloses (see above): the MS can use the same area as that used for the PDCCH

The same Rx beam of 810 (equivalent to the first receive beam) receives data during the time interval TL815 starting from the end of the PDCCH region 810.

signal (equivalent to the first receiving beam being used to receive the second wireless signal and the first wireless signal before the first time point)

After the time interval TL815 , the MS can use the Rx beam obtained by decoding the PDCCH area 810 (equivalent to the second

receiving beam) to receive data signals (equivalent to the second receiving beam being used to receive the first wireless signal after the first time point)

Multi-carrier symbols). It can be seen that Evidence 1 discloses the additional technical features of Claim 5. and the claims cited in it do not have a creative basis.

In fact, this claim does not possess the inventiveness required by Article 22, Paragraph 3 of the Patent Law.

6. Claim 6 refers to any one of claims 1-3. Evidence 1 also discloses (see paragraphs 0064-0067 of the specification, Figure 6):

6 shows an example subframe structure in which a periodic signal is inserted between a control channel and data according to the present disclosure. Referring to FIG. 6 , in subframe 600,

The PDCCH region 610 can include multiple PDCCH elements, and the data region 620 can include multiple data bursts. Each PDCCH element 605 can

Includes scheduling information related to a specific data burst 625 of the data region 620; a preset periodic signal 630 can follow the PDCCH region 610

Shortly before the data region 620, a periodic signal 630 may be transmitted during a period of time at least longer than the PDCCH decoding delay 615 of the MS.

The PDCCH decoding delay 615 can be predicted by the BS based on the MS's capabilities, or can be set according to the system standard.

6 discloses inserting a periodic signal between the PDCCH region and the data region, wherein the periodic signal duration is at least longer than the decoding delay of the PDCCH, wherein the PDCCH

The decoding delay is essentially the same as the time interval TL815 in Figure 8 of Evidence 1 , which is to ensure that the control information of the PDCCH channel can be transmitted in the same time interval as the time interval TL815 in Figure 8 of Evidence 1.

The decoding is completed within this time period, so the embodiment of Evidence 1 FIG6 actually discloses the situation at the first time point before the first wireless signal.

Evidence 1 The embodiment of FIG8 has disclosed that the second receiving beam is used to receive the multi-carrier signal after the first time point in the first wireless signal.

Based on the wave symbol (see the comments on claims 3, 4, and 5), those skilled in the art can easily think that when the first wireless signal is all in the first

After a time point, the second receiving beam is used to receive all multi-carrier symbols of the first wireless signal.

For the case where the first time point is after the G multi-carrier symbols, Evidence 1 has been disclosed (see paragraph 0075 of the specification):

The length of the interval TL815 can be agreed upon between the BS and the MS, and is indicated by the BS through broadcast from among multiple values preset between the BS and the MS.

Or the BS notifies with a signal. That is, evidence 1 discloses that the location at the first time point can be determined by negotiation between the base station and the user equipment, that is, it can also be determined based on

Flexible settings are required. There may also be cases where the data signal is completely within the time interval TL815, completely outside the time interval, or within the time interval.

In the embodiment of FIG8 of Evidence 1, it has been disclosed that the first receiving beam is used to receive the first receiving beam before the first time point.

Machine Translated by Google

Based on the multi-carrier symbols in the first wireless signal (see comments on claims 3. 4. and 5). those skilled in the art can easily imagine that when

When the first wireless signal is all before the first time point, the first receiving beam is used to receive all multi-carrier symbols of the first wireless signal.

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.

The patentee believes that the first time point in this patent is flexible and is a time point where various situations may occur, while Evidence 1 is a fixed plan.

In this regard, the panel believes that evidence 1 has disclosed that the length of the time interval TL815 (equivalent to the position of the first time point) can be determined by the basic

The data signal is determined by negotiation between the station and the user equipment, which can be flexibly set according to needs.

There are multiple situations in which the TL815 is within the time interval, completely outside the time interval, or both within and outside the time interval. In addition, Evidence 1 has disclosed the situation in which the PDCCH area

The data signal in the time interval TL815 after that is received by the user equipment using the same receiving beam as the PDCCH area.

After the interval TL815, the user equipment receives the data signal using the receive beam obtained by decoding the PDCCH area (see the previous comments).

This is essentially the same as the technical solution of this patent that uses different receiving beams for data signals before and after the first time point.

The collegial panel did not support the patent owner's opinion.

7. Claim 7 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.

8. Claims 8 and 9 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.

RRC signaling as the first information is a common method in this field; the user equipment sends the second information to the base station for negotiating and determining the first time point

It is also a common practice for those skilled in the art. Therefore, on the basis that the claims cited by it do not have an inventive step, claims 8 and 9 are also not inventive.

Possess the creativity required by Article 22, Paragraph 3 of the Patent Law.

9. Claim 10 refers to any one of claims 1-3, and the base station sends third information, such as RRC signaling, to enable the user equipment to

The candidate scheme for determining the multi-antenna related reception corresponding to the data signal is adopted by those skilled in the art so that the user equipment can receive the data signal.

Therefore, on the basis that the claim cited by it does not have an inventive step, the claim does not have the inventive step required by Article 22, Paragraph 3 of the Patent Law.

Creativity of regulations.

10. The method in a base station device for wireless communication claimed in claims 11-20 is the same as the method claimed in claims 1-10.

For the method in the base station device corresponding to the method in the user device, based on the same reasons as claims 1-10, claims 11-20 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.

11. Claims 21-30 claim protection of user equipment for wireless communication, and the user equipment claimed in claims 1-10

The method corresponds to the method in one-to-one correspondence. Claims 31-40 claim to protect the base station device used for wireless communication, which is different from the base station device claimed in claims 11-20.

The method in the device corresponds to each other. It is a common practice in the art to have the first and second modules perform signal transmission and reception respectively.

Machine Translated by Google

For the same reasons as claims 1-20. claims 21-40 do not meet the requirements of Article 22 of the Patent Law for the combination of evidence 1 and the customary means in the field.

3. The inventive step required by Article 3.

In summary, the grounds for invalidation of claims 1-40 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. 202010373731.6 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