Appeal decision

Appeal No. 2016-10651

France
Appellant ALCATEL-LUCENT LTD.

Tokyo, Japan
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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2015-500790, entitled "Multiple input multiple output (MIMO) communication" (International publication on September 26, 2013, WO2013-139439, Domestic publication on June 11, 2015, National Publication of International Patent Application No. 2015-516725) has resulted in the following appeal decision.

Conclusion

The demand for trial of the case was groundless.

Reason

1 History of the procedures and the Invention

This application was originally filed on March 7, 2013 at the European Patent Office as an International Patent Application claiming priority under the Paris Convention, a notice of reasons for refusal was issued on October 28, 2015, a written amendment was submitted on February 3, 2016, an examiner's decision of refusal was issued on March 14, 2016, and an appeal against the examiner's decision of refusal was made on July 14, 2016.

The invention relating to Claim 1 (hereinafter referred to as "the Invention") is recognized as follows, as described in Claim 1 of the scope of claims of the patent

application amended by the amendment dated on February 3, 2016.
"A method of controlling uplink multiple input multiple output transmission between user equipment and a base station of a wireless communication network, said method comprising the steps of:

identifying whether insufficient capacity exists on a primary uplink stream to carry all of pending uplink data packets within a transmission interval; and

if insufficient capacity exists, preventing establishment of a secondary uplink stream when it is determined that pending uplink data packets which would not be carried by said primary uplink stream would under-utilize the capacity provided by said secondary uplink stream within the transmission interval."

2 Priority claim

(1) This application (herein after referred to as "International patent application") was originally filed on March 7, 2013 at the European Patent Office (the receiving Office) as an International Patent Application. Priority claim under the Paris Convention was filed for the International patent application on the basis of EP Patent Application (No: EP 12360019.9) filed on March 19, 2012.

(2) Regarding an international patent application based on the Patent Cooperation Treaty, the provisions of Article 43 of the Patent Act is not applied to the procedures of priority claim, under the provisions of Article 184-3(2) of the Patent Act, but the Patent Cooperation Treaty and the regulations under the Patent Cooperation Treaty are applied. In Rule 17.1 of the Patent Cooperation Treaty (at the filing date of the internal application, March 7, 2013), the following are specified on the priority document.

"17.1 Obligation to Submit Copy of Earlier National or International Application

(a) Where the priority of an earlier national or international application is claimed under Rule 8, a copy of that earlier application, certified by the authority with which it was filed (“the priority document”), shall, unless that priority document has already been filed with the receiving Office together with the international application in which the priority claim is made, and subject to paragraphs (b) and (b-bis), be submitted by the applicant to the International Bureau or to the receiving Office not later than 16 months after the priority date, provided that any copy of the said earlier application which is received by the International Bureau after the expiration of that

time limit shall be considered to have been received by that Bureau on the last day of that time limit if it reaches it before the date of international publication of the international application.
(b) Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request shall be made not later than 16 months after the priority date and may be subjected by the receiving Office to the payment of a fee.
(b-bis) Where the priority document is, in accordance with the Administrative Instructions, made available to the International Bureau from a digital library prior to the date of international publication of the international application, the applicant may, instead of submitting the priority document, request the International Bureau, prior to the date of international publication, to obtain the priority document from such digital library.
(c) If the requirements of none of the three preceding paragraphs are complied with, any designated Office may, subject to paragraph (d), disregard the priority claim, provided that no designated Office shall disregard the priority claim before giving the applicant an opportunity to furnish the priority document within a time limit which shall be reasonable under the circumstances.
(d) No designated Office shall disregard the priority claim under paragraph (c) if the earlier application referred to in paragraph (a) was filed with it in its capacity as national Office or if the priority document is, in accordance with the Administrative Instructions, available to it from a digital library."

(3) We will examine whether or not the procedures of the application satisfy Rule 17.1.
A Regarding Rule 17.1(a)

The "NOTIFICATION CONCERNING SUBMISSION, OBTENTION, OR TRANSMITTAL OF PRIORITY DOCUMENT" (PCT/IB/304 (July 2012)) sent from WIPO International Bureau on May 2, 2014 to the applicant and a copy of which has been sent to the Japan Patent Office, the designated office, describes, regarding the priority claim that the Priority date is "19 March 2012 (19.03.2012)", that the Date of receipt of priority document is "23 April 2014 (23.04.2012)*" (Note the asterisk). It is recognized that the document was received by WIPO International Bureau later than 16 months after the priority date, the due date, which is stipulated in

Rule 17.1 (a) based on the Patent Cooperation Treaty.

The date of receipt (April 23, 2014) is not before the international publication date (September 26, 2013) of the International patent application. Thus, the procedures of the application do not fall under the proviso of Rule 17.1(a).

Therefore, the application does not comply with Rule 17.1(a).

B Regarding Rule 17.1(b) and (b-bis)

In reference to the document through the PATENT SCOPE in the webpage of WIPO on the claims of Rules 17.1(b) and (b-bis), neither the upper nor the lower box is checked in the column "Furnishing the priority document(s)" of the application document "REQUEST" (PCT/R0/101 (second sheet) (16 September 2012)), and no access code is described. The fact that the claim of Rule 17.1(b) or (b-bis) was made not later than 16 months after the priority date cannot be recognized.

Regarding the asterisk ("*") attached to the date of receipt of priority document, the above notification (PCT/IB/304 (July 2012)) describes as follows.

"An asterisk "*" next to a date of receipt denotes priority documents submitted or transmitted to or obtained by the International Bureau but not in compliance with Rule 17.1(a), (b) or (b-bis)(the priority document was received after the time limit prescribed in Rule 17.1(a); the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b) or the request to the International Bureau to obtain the priority document was made after the applicable time limit under Rule 17.1(b-bis)). Even though the priority document was not furnished in compliance with Rule 17.1(a), (b) or (b-bis), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under circumstances."

In light of the above, it is obvious that WIPO International Bureau considers that the application does not comply with the requirement of Rules 17.1(a), (b) and (b-bis).

Therefore, the application does not comply with the requirements of Rules

17.1(b) and (b-bis).

C Regarding Rule 17.1(c)

As examined in A and B, the application does not comply with Rule 17.1(a), (b), and (b-bis), and falls under one of the conditions of disregarding the priority claim stipulated in the first sentence of Rule 17.1(c), " If the requirements of none of the three preceding paragraphs are complied with,"

Regarding the proviso of Rule 17.1(c), Article 38-14 of the Regulations under the Patent Act complies with the proviso of Rule 17.1(c), for the procedures of the priority claim on the international patent application. Paragraph (1) stipulates that a person filing an international patent application claiming a priority may submit a priority document stipulated in Rule 17.1(a) to the Commissioner of the Japan Patent Office, not later than 2 months after the date of expiration of domestic document submission time period. Even when no priority document is submitted internationally, an opportunity to submit a priority document to the Japan Patent Office is given. Paragraph (2) stipulates that "the priority document stipulated in the previous paragraph must be submitted in form No. 36."

However, submission of a priority document in form No. 36 to the Japan Patent Office not later than 2 months (by November 19, 2014) after the date of expiration of domestic document submission time period (30 months after the priority date in this case, September 19, 2014), on the basis of the provisions of the regulations, has not been recognized.

Therefore, the application does not comply with the case where no designated Office shall disregard the priority claim, stipulated in the proviso of Rule 17.1(c).

The first paragraph of Rule 17.1(c) stipulates that a priority claim can be disregarded on the condition that none of Rules 17.1(a), (b), and (b-bis) is met and that Rule 17.1(d) is complied with. Whether the priority claim can be disregarded finally by the prescriptions of Rule 17.1(c) is judged after examining Rule 17.1(d) in the following D.

D Regarding Rule 17.1(d)

The earlier application serving as a basis for the priority claim is a patent application to the EPO, and the patent application at the Japan Patent Office is not an

original application. The application does not fall under the description in Rule 17.1(d), "if the earlier application referred to in paragraph (a) was filed with it in its capacity as national Office "

Examining whether the application falls under the description in Rule 17.1(d), "if the priority document is, in accordance with the Administrative Instructions, available to it from a digital library," the availability of the priority document from a digital library in Rule 17.1(d) is stipulated in Administrative Instructions Section 715 (available from <URL http://www.wipo.int/pct/en/texts/ai/s715.html>), as follows.

"Section 715

Availability of Priority Documents from Digital Libraries

(a) For the purposes of Rules 17.1(b-bis), 17.1(d) (where appropriate, as applicable by virtue of Rules 17.1(c) and 82ter.1(b)), 66.7(a) (where appropriate, as applicable by virtue of Rule 43bis.1(b)) and 91.1(e), a priority document shall be considered to be available from a digital library to the International Bureau, a designated Office, the International Searching Authority, or the International Preliminary Examining Authority, as the case may be:

(i) if the Office or Authority concerned has notified the International Bureau, or the International Bureau has declared, as the case may be, that it is prepared to obtain priority documents from that digital library; and

(ii) the priority document concerned is held in that digital library and the applicant has, to the extent required by the procedures for accessing the relevant digital library, authorized the Office or Authority concerned or the International Bureau, as the case may be, to access that priority document."

In the period not later than two months (by November 19, 2014) after the date of expiration of domestic document submission time period (30 months after the priority date in this case, September 19, 2014), stipulated in Article 38-14 of the Regulations under the Patent Act, there is no evidence that the Japan Patent Office has given notification prescribed in the section 715(a)(i) to the International Bureau, as a designated office, and There is no evidence that the International Bureau has declared such a fact. There is also no evidence that the priority document of the application is held in the digital library and the applicant has authorized the access described in section 715(a)(ii).

Thus, in light of the administrative instructions, there is no evidence that the

Japan Patent Office could obtain the priority document of the application from the digital library. The provisions of Rule 17.1(d) are not applied to the application.

(4) Appellant's allegation

The appellant's allegation in the demand for the trial cannot be accepted, as follows.

As "(3-1-1)," the appellant alleges that the requirement for the priority document in Japan is met since the priority document was transferred from IB to JPO on November 26, 2014 at the latest. However, there is no evidence of submission of a priority certificate in form No. 36 to the commissioner of the Japan Patent Office not later than 2 months (by November 19, 2014) after the date of expiration of domestic document submission time period, as described above. Thus, the allegation cannot be accepted.

As "(3-1-2)," the appellant alleges that the spirit of the law of Rule 17.1(d) based on PCT is that a designated office cannot disregard a priority claim when a priority document can be easily obtained, that JPO cannot disregard the priority claim on the basis of Rule 17.1(d) based on PCT since the priority document was transferred to JPO and is available from the digital library of JPO, and that the priority claim is valid. However, in light of the administrative instructions, the provisions of Rule 17.1(d) are not applied. Thus, the allegation cannot be accepted.

As "(3-1-3)," the appellant alleges that, as concretely presented in Article 48(2)(a) of the PCT, the principle of the international (PCT) system is that an applicant may not be subjected to a greater disadvantage than the case of a priority claim application under the Paris Convention, regardless of periods, and that Article 48(2)(a) of the PCT is violated if a PCT applicant loses the benefit for the reason that the requirements for the procedures, which may not have been required for an applicant of a priority claim under the Paris Convention, are not met, and

as "(3-1-4)," the appellant alleges that the Patent Act was revised to be set on April 1, 2016 and the Japan Patent Office should inform an applicant in the event of omission of priority documents on a priority under the Paris Convention, and that application to PCT application is appropriate in view of Article 48(2)(a) of the PCT and the priority claims is valid. However, as described in Article 48(2)(a) of the PCT, "Any Contracting State shall, as far as that State is concerned, excuse, for reasons admitted under its national law, any delay in meeting any time limit," only exceptional or limited delays are accepted. As for an international patent application based on the

Patent Cooperation Treaty, the provisions of Article 43 of the Patent Act are not applied to the procedures of priority claim, under the provisions of Article 184-3(2) of the Patent Act, and the Patent Cooperation Treaty and the Regulations under the Patent Cooperation Treaty are applied. Thus, the allegation cannot be accepted.

(5) Summary

As described above, as for the application, none of the requirements of Rule 17.1(a), (b), and (b-bis) based on the Regulations under the Patent Cooperation Treaty is met, no priority document is submitted in the submission opportunity given by the proviso of Rule 17.1(c), and the provisions of Rule 17.1(c) are not applied. Thus, the effects of the priority claim cannot be recognized under the provisions of Rule 17.1(c).

The application is an application filed on March 7, 2013 as an International Patent Application, and the effects of the priority claim under the Paris Convention are found to be invalid. Judgment on the requirements for inventive step is made on the basis of the above international application date, as follows.

3 Cited invention

In International Publication No. WO2012/094241 (hereinafter referred to as "Cited document") cited for the reasons for refusal of the examiner's decision, the following matters are described with drawings.

(1) "[0024] Currently, only DL MIMO is specified in 3GPP standard and implemented WCDMA HSPA system. With the evolution of HSPA, more and more applications require better uplink performance such as higher throughput and extended coverage.
[0025] In accordance with embodiments of the present disclosure, systems and methods are provided for controlling WRTU transmission parameters, for calculating a set of supported E-TFCs, for determining transmission rank, for determining enhanced transport format combination (E-TFC) selections, and for selecting transport format. The system and method embodiments disclosed herein may be used individually or in any suitable combination.
[0026] By way of background, HSUPA was originally designed for single stream operations. In conventional HSUPA, the wireless receive/transmit unit (WRTU)

determines the transport block size (TBS) to use for transmission based on a number of parameters. Some of these parameters may be dynamically signaled by the network, others are semi-static or static and other parameters are dynamic and only known to the WRTU. A set of procedures in the 3GPP specifications describe the exact WRTU behavior and TBS selection rules for the enhanced dedicated channel (E-DCH). The E-TFC restriction and the transport format selection collectively describe the overall WRTU behavior for selecting the format and the information to transmit.
[0027] These rules have been designed for single stream operations, where at any TTI the WRTU only transmits data stream from its antenna(s). It is desirable to change the existing rules in order to support multi-stream operations in E-DCH (also referred here as to dual-stream or UL MIMO). At a high level, the problem to resolve consists of designing rules and procedures for the WRTU to determine the amount of data, the power and transport format/code rate for each streams in dual-stream transmissions.
[0028] Many varieties of dual-streams operations can be devised, for example any combination of the following options may be considered, including, but not limited to, 1 or 2 codewords transmitted simultaneously, 1 or 2 inner loop power control (ILPC), single or dual grants, etc." (Page 4)

(2) "[0040] When a WRTU is configured in MIMO mode for uplink transmission, to minimize the WRTU transmit power and also the interference experienced at Node B, it is beneficial to give the WRTU the flexibility to decide for the next TTI whether single stream or dual stream transmission is appropriate. In one approach to support this feature, the E-DCH transmission in the next TTI may run the E-TFC restriction procedure twice, one by assuming single stream transmission, the other by assuming dual stream transmission. It is noted that since additional physical channels may be required to support MIMO operation, the conventional E-TFC restriction procedures needs to be modified; this is addressed herein below. In short, one example E-TFC restriction procedure for uplink MIMO operation may be as follows. Execute the E-TFC restriction procedure described below with reference to E-TFC Restriction Procedure for Rank-One Transmission with the assumption that the next transmission is rank-one or single-stream transmission. Execute the E-TFC restriction procedure defined below with reference to treating both streams simultaneously (e.g., for dependent stream) or the procedure defined below with reference to calculating the set of supported E-TFC 's independently for each with the assumption that the next transmission is rank-two or dual-stream transmission.

[0041] In an another method when the WTRU is configured in MIMO mode for uplink transmission, the WTRU is configured with a primary stream E-TFCI rank-l/rank-2 threshold value (E-TFCIthresl-2), or a set of primary stream E-TFCI rank-l/rank-2 threshold values (one for each HARQ offset 1: E-TFCIthreshl-2,1). The WTRU then calculates the set of supported E-TFCIs for rank-1 transmission only for the E-TFCI that are below the threshold for the primary stream and the set of supported E-TFCIs for rank-2 transmission only for the E-TFCIs that are above (or equal to) the threshold. This approach may allow reducing the computations for the E-TFC restriction procedure as the set of candidate E-TFCIs under consideration is reduced. The threshold values may be configured via RRC signaling or alternatively may be fixed in the specifications.
[0042] In one example, the WTRU determines the threshold based on a minimum transport block size for the secondary stream. For example the threshold may be determined by the WTRU as the minimum E-TFCI combination supporting dual stream transmission; that is the minimum E-TFCI combination for a specific secondary stream power offset for which the supported TB on the secondary stream is larger than or equal to the minimum allowed TB on the secondary stream. Optionally, the WTRU may carry out this calculation based on the HARQ offset associated to the highest priority non-empty logical channel. In the following, the methods for calculating the set of supported and blocked E-TFCs are disclosed for rank one and rank-two transmission, respectively. These methods (or part of these methods) may be used individually or in any suitable combination." (Pages 7 to 8)

(3) "4. Example Methods for WRTU to Determine the Transmission Rank

[00133] In an embodiment, a NodeB may signal two grants, one for each stream to the WRTU explicitly. The grant associated to the secondary stream may control the rank. A 0 grant may indicate a rank-1 transmission. Non-zero grants may indicate rank-2 transmission.

[00134] If the Node B signals two grants on two different downlink physical channels, the WRTU may determine the transmission rank based on blind detection of the presence of both physical channels carrying grants. For example, if both physical channels carrying grants are detected by the WRTU, then WRTU determines it is rank 2 transmission. If only one such physical channel is detected, the WRTU determines it is rank 1 transmission.

[00135] Alternatively, the WRTU may be configured semi-statically with a given

transmission rank. For example this could be done via HS-SCCH order or E-AGCH signaling (or similar channel). The WRTU may keep its rank configuration until a new signal is received.

[00136] The WRTU may be configured to use the rank indication (1 or 2) as a maximum rank indication; that is when the WRTU is configured with rank-2 it may also use rank-1 transmission (e.g. if it has small amount of data in its buffer). Alternatively, the WRTU may be configured to use the rank indication (1 or 2) as an absolute rank indication, that is when the WRTU is configured with rank-2, it may only use rank-2 transmission (and likewise for rank-1 transmission).

[00137] It is noted that the absolute rank control may not be appropriate in all cases, as the WRTU may possess instantaneous information that the NodeB does not, for instance the WRTU has accurate knowledge of its available resources such as power and buffer status. Thus, it can be that the WRTU decides on how many streams (rank) to transmit. For example, when allowed to transmit with rank-2 (maximum rank control).

[00138] When configured for a maximum rank-2 transmission, the WRTU may determine the actual transmission rank (or the number of stream to transmit) using one or more of the following inputs, individually or in any combinations: maximum support payload obtained after running E-TFC restriction assuming rank-1 transmission; maximum support payload obtained after running E-TFC restriction assuming rank-2 transmission (aggregated across both streams); serving grant for the primary stream transmission; serving grant for the secondary stream transmission; UPH; downlink measurements; and /or buffer information. The following describes criteria by which the WTRU may determine its rank for transmission. These criteria may be used in any order or combination." (Pages 32 and 33)

(4) "[00142] In another example, the WRTU determines if single-stream transmission is sufficient to empty its buffer (according to the WTRU power headroom and serving grant), for example in a configured amount of time. In one particular example, this amount of time corresponds to a single TTI. If the WRTU estimates that it can empty its buffer using single-stream transmission with the current headroom and serving grant during that configured amount of time, the WRTU execute E-TFC selection assuming single-stream transmission. Otherwise, the WRTU execute E-TFC selection assuming dual stream transmission.

(Omitted)

[00147] In another example, the WTRU is configured to use rank-2 transmission based on the data in its buffer. The amount of data available may be determined by the WTRU for instance based on the total data in the buffer, or based on the total data that can be multiplexed with the highest-priority non-empty logical channel (or MAC-d flow) in that HARQ process. The WTRU then compares the amount of data available for the next transmission to a threshold and determines whether to use rank-1 or rank-2 transmission based on the result of that comparison. The threshold may be an absolute threshold value, for example signaled by the network. This threshold value may also depend on the HARQ profile; for example the WTRU may be configured with one threshold value for each HARQ profile configured. Alternatively, the WTRU may determine the threshold value for each HARQ profile configured based on the known HARQ offset and a pre-defined threshold reference point (e.g. number of bits and HARQ offset pair). In another example, the threshold may be calculated for each HARQ profile as the sum of the bits across both streams for the smallest supported E-TFC combination or dual- stream operations. In one option the WTRU calculates the aggregated number of bits for the smallest supported E-TFC combination taking into account the current MIMO offset (i.e. the quality of the secondary stream as signaled by the NodeB). In another example, the WTRU calculates the threshold as being twice the number of bits on the primary stream for the minimum E-TFC combination supporting dual-stream transmission.

(Omitted)

[00152] In another example, the WTRU may be configured to use rank-2 transmission based on the number of bits that can be transmitted on the secondary stream according to the serving grant, and optionally a secondary power offset. The WTRU may calculate the number of bits that can be transmitted on the secondary stream for example using the HARQ offset associated to the highest priority non-empty logical channel. The WTRU may be configured to compare the number of bits that can be transmitted on the secondary stream according to the serving grant and secondary power offset to a threshold; if calculated number of bits is above the threshold then the WTRU uses rank-2 transmission otherwise the WTRU uses rank-1 transmission. In one example, the WTRU is configured with a fixed threshold for example via RRC signaling. In another example, the WTRU may be configured to use rank-2 transmission if the number of bits that can be transmitted on the secondary stream according to the serving grant and

secondary power offset is above the minimum configured transport block size for the secondary stream; otherwise the WTRU uses rank-1 transmission.

(Omitted)

[00154] In one practical example, the WTRU is configured to use rank-2 transmission when the WTRU determines that it has sufficient power for rank-2 transmission (e.g. according to one of the above embodiment), and that it has a sufficiently large serving grant for rank-2 transmission (e.g. according to one of the above embodiment), and that it has sufficient data for rank-2 transmission (e.g. according to one of the above embodiment). If one or more of these criteria is not met the WTRU may be configured to use rank-1 transmission. If the WTRU according to this criteria, determines to use rank-2 transmission, it may perform E-TFC selection and E-TFC reselection according to the dual stream (rank-2) transmission formulas.

(Omitted)

[00158] In another example, the WTRU may be configured to transmit a request to the network for single-stream operations. This request may be carried for example on new field of the MAC header, or on the SI (e.g. L2 message); alternatively this request may also be carried on a physical channel. The WTRU may be configured to transmit requests to operate in single-stream or rank-1 when it is already configured to operate with up to rank-2 transmissions and it determines that it should be operating in single-stream mode (e.g. using one of the above conditions). The WTRU may also be configured to transmit request to operate in dual-stream or rank-2 operations when it is configured for rank-1 operations and determines (e.g. using one of the above condition) that it should operate in dual-stream mode.

(Omitted)

[00164] To minimize the WRTU transmission power and UL interference, whenever the WRTU's actual payload determined by buffer occupancy is less than the minimum of the Max Supported Payload and Total Granted Payload which both are evaluated based on an assumption of rank-2 transmission, the WRTU may first verify if its actual payload can be transmitted with rank-1 transmission by comparing it with the minimum of the Max supported Payload and Total granted Payload which both are evaluated based on an assumption of rank-1 transmission. If it cannot, rank-2 transmission is used.

(Omitted)

[00166] In another example, the actually payload determined as described above is

compare against a threshold (e.g. minimum payload for considering a rank 2 transmission). If the payload is below this threshold then the UE proceeds to perform E-TFC selection and restriction assuming a single rank transmission. Otherwise, the UE may consider a rank 2 transmission. The rank 2 transmission may be further dependent on the grant and power." (Pages 33 to 38)

(5) "[00240] As shown in FIG. 11A, the communications system 100 may include wireless transmit/receive units (WTRUs) 102a, 102b, 102c, 102d, a radio access network (RAN) 104, a core network 106, a public switched telephone network (PSTN) 108, the Internet 110, and other networks 112, though it will be appreciated that the disclosed embodiments contemplate any number of WTRUs, base stations, networks, and/or network elements. Each of the WTRUs 102a, 102b, 102c, 102d may be any type of device configured to operate and/or communicate in a wireless environment. By way of example, the WTRUs 102a, 102b, 102c, 102d may be configured to transmit and/or receive wireless signals and may include user equipment (WRTU), a mobile station, a fixed or mobile subscriber unit, a pager, a cellular telephone, a personal digital assistant (PDA), a smartphone, a laptop, a netbook, a personal computer, a wireless sensor, consumer electronics, and the like." (Page 60)

In light of the descriptions in (1) to (5), drawings, and technical common sense of a person skilled in the art,

a according to the descriptions in (1), [0040] of (2), and (5), it is recognized that the Cited document describes "a method of controlling UL-MIMO between user equipment and a base station in a wireless communication network."

b According to the descriptions in [0040] of (2), (3) and [00158] of (4), when a WRTU (user equipment)is configured in MIMO mode for uplink transmission, to minimize the interference experienced at NodeB, even when configured for a maximum rank-2 transmission, it can be said that the WRTU is given the flexibility to decide for the next TTI whether single stream or dual stream transmission is appropriate.

In (2) and (4), various types of threshold processing for determining a transmission rank are shown as examples. According to [00138] of (3), the transmission rank can be determined by an arbitrary combination of the various types

of threshold processing.

Thus, it can be recognized that the Cited document describes that "when it is configured for a maximum rank-2 transmission, rank-1 transmission (single-stream transmission) or rank-2 transmission (dual-stream transmission) is determined on the basis of a combination of various types of threshold processing."

c According to [0040] of (2), according to the above judgment, the effects of minimizing WRTU (user equipment) transmission power and UL interference in NodeB (base station) can be recognized.

In light of the above, it can be recognized that the Cited document describes the following invention (hereinafter referred to as "Cited invention").
"A method of controlling UL-MIMO between user equipment and a base station in a wireless communication network,
the method determining rank-1 transmission (single-stream transmission) or rank-2 transmission (dual-stream transmission) on the basis of a combination of various types of threshold processing when it is configured for a maximum rank-2 transmission."

4 Comparison/judgment

Comparing the Invention with the Cited invention,

a there is no difference between the "uplink multiple input multiple output transmission" in the Invention and the "UL-MIMO" in the Cited invention, which are different only in representation.

According to [0041], [0042], and [00138] (See 3(2), (3)) of the Cited document, in the "rank-1 transmission (single-stream transmission)" of the Cited invention, an uplink primary stream obviously exists, and it is optional to refer to the primary stream as "primary uplink-stream." In the "rank-2 transmission (dual-stream transmission)" of the Cited invention, a secondary stream obviously exists in addition to the primary stream, and it is optional to refer to the secondary stream as "secondary uplink-stream."

b In light of [0053] to [0056] of the specification of the application and FIG. 1, in the Invention, the steps of "identifying whether insufficient capacity exists on a primary

uplink stream to carry all of pending uplink data packets within a transmission interval; and if insufficient capacity exists, preventing establishment of a secondary uplink stream when it is determined that pending uplink data packets which would not be carried by said primary uplink stream would under-utilize the capacity provided by said secondary uplink stream within the transmission interval" indicates (or includes) that they are executed when it is configured for a maximum rank-2 transmission, obviously.

c According to [0053] to [0056] of the specification of the application, in the Invention, the processes of "identifying whether insufficient capacity exists on a primary uplink stream to carry all of pending uplink data packets within a transmission time" and "determining that pending uplink data packets which would not be carried by said primary uplink stream would under-utilize the capacity provided by said secondary uplink stream within the transmission interval" are considered as threshold processing. Thus, the Invention is considered as "preventing establishment of a secondary uplink stream on the basis of a combination of threshold processing."

In the Cited invention, "determining rank-1 transmission (single-stream transmission) or rank-2 transmission (dual-stream transmission) on the basis of a threshold," the rank-1 transmission is executed without executing the rank-2 transmission when the rank-1 transmission (single-stream transmission) is determined. Thus, this case can be considered as "preventing establishment of a secondary uplink stream."

The Invention and the Cited invention correspond in the point of "preventing establishment of a secondary uplink stream, on the basis of a combination of threshold processing, when it is configured for a maximum rank-2 transmission."

The Invention and the Cited invention correspond to or differ from each other in the following points.

(Corresponding features)

"A method of controlling uplink multiple input multiple output transmission between user equipment and a base station of a wireless communication network,

the method preventing establishment of a secondary uplink stream, on the basis of a combination of threshold processing, when it is configured for a maximum rank-2 transmission."

(Different feature)

Regarding the corresponding feature, "preventing establishment of a secondary uplink stream, on the basis of a combination of threshold processing, when it is configured for a maximum rank-2 transmission," the combination of threshold processing is "the step of identifying whether insufficient capacity exists on a primary uplink stream to carry all of pending uplink data packets within a transmission interval, and the step of, if insufficient capacity exists, preventing establishment of a secondary uplink stream when it is determined that pending uplink data packets which would not be carried by said primary uplink stream would under-utilize the capacity provided by said secondary uplink stream within the transmission interval" in the Invention, while the Cited invention does not clearly indicate a specific combination.

We will examine the above different feature.

As an example of the processing to determine a transmission rank, paragraph [00142] (See 3 (4)) of the Cited document indicates that the single-stream transmission is sufficient to empty its buffer in a single TTI and that the WTRU assumes the single-stream transmission, and otherwise assumes the dual-stream transmission. Therefore, as one combination of threshold processing, "the step of identifying whether insufficient capacity exists on a primary uplink stream to carry all of pending uplink data packets within a transmission interval" can be included as necessary.

Paragraph [0042] (See 3(2)) of the Cited document indicates that the WTRU determines the threshold based on a minimum transport block size for the secondary stream, paragraph [00147] (See 3 (4)) indicates that the WTRU compares the amount of data available for the next transmission to a threshold, paragraph [00152] (See 3 (4)) indicates that the WTRU executes threshold processing based on the number of bits that can be transmitted on the secondary stream, and paragraph [00164] (See 3 (4)) indicates that if the actual payload is less than the minimum of the Max Supported Payload and Total Granted Payload (i.e. a smaller one of Max Supported Payload and Total Granted Payload), both of which are evaluated based on an assumption of rank-2 transmission, a determination is made based on an assumption of rank-1 transmission. Therefore, it is not particularly difficult to employ the point as to "whether to utilize the capacity provided by the secondary uplink stream

sufficiently," as another combination of threshold processing.

The point of "if insufficient capacity exists, that pending uplink data packets which would not be carried by said primary uplink stream..." is derived as a result of employing the above two combinations of threshold processing.

Thus, in the Cited invention, a person skilled in the art can easily employ, as a combination of threshold processing, "the step of identifying whether insufficient capacity exists on a primary uplink stream to carry all of pending uplink data packets within a transmission interval, and the step of, if insufficient capacity exists, preventing establishment of a secondary uplink stream when it is determined that pending uplink data packets which would not be carried by said primary uplink stream would under-utilize the capacity provided by said secondary uplink stream within the transmission interval."

5 Closing

As described above, the Invention could have been easily invented by a person skilled in the art on the basis of the Cited invention, and the appellant should not be granted a patent for the invention under the provisions of Article 29(2) of the Patent Act.

Therefore, the appeal decision shall be made as described in the conclusion.

May 24, 2017

Chief administrative judge: OTSUKA, Ryohei
Administrative judge: SUGAHARA, Michiharu
Administrative judge: YAMANAKA, Minoru