Appeal decision

Appeal No. 2017-2758

Appellant Acer Incorporated

Patent Attorney ITO, Tadashige

Patent Attorney ITO, Tadahiko

Patent Attorney ONUKI, Shinsuke

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2015-55175, entitled "METHOD OF HANDLING DEVICE-TO-DEVICE OPERATION" (the application published on October 22, 2015, Japanese Unexamined Patent Application Publication No. 2015-186261) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

This application was filed on March 18, 2015 (Priority Claim under Paris Convention: March 19, 2014, US and March 12, 2015, US), a notice of reasons for refusal was issued on March 24, 2016, a written opinion and a written amendment were submitted on June 2, 2016, and an examiner's decision of refusal was issued on November 25, 2016. Against this, an appeal against the examiner's decision of refusal was made on February 27, 2017, and a written amendment was submitted at the same time.

No. 2 Decision to dismiss amendment on the written amendment made on February 27, 2017

[Conclusion of Decision to Dismiss Amendment]

The amendment dated February 27, 2017 (hereinafter referred to as "the

Amendment") shall be dismissed.

[Reason]

1 Outline of the Amendment

The Amendment is to delete the following description, which is one of alternatives described in Claim 1 of the scope of claims amended by the written amendment submitted on June 2, 2016: "a step of stopping the D2D operation in a second subframe, when the D2C operation collides with the D2D operation in the first subframe and the second subframe is a retransmission subframe corresponding to the first subframe according to the D2D operation".

2 Propriety of the Amendment

(1) Presence/absence of new matter, presence/absence of shift amendment, and purpose requirements of amendment

The Amendment, which is to limit the scope of claims by deleting one of matters specifying the invention; i.e., alternatives, was made within the scope of the matters described in the specification, scope of claims, or drawings originally attached to the application, and is intended for the matters stipulated in Article 17-2(5)(ii) of the Patent Act. The Amendment does not violate the provisions of Article 17-2(4) of the Patent Act.

(2) Independent requirements for patentability

The Amendment is intended for restriction of the scope of claims. Then we will examine below whether the invention according to Claims 1 after the Amendment was independently patentable at the time of filing of the application.

A Invention after the Amendment

The invention according to Claim 1 after the Amendment (hereinafter referred to as "the Invention after the Amendment") is acknowledged as follows as described in Claim 1 of the scope of claims amended by the written amendment submitted on February 27, 2017.

"A method of handling a device-to-device (D2D) operation for a communication device, the method comprising:

a step (302) of determining a first subframe for performing a device-to-cellular (D2C) operation to a network;

a step (304) of performing the D2C operation in the first subframe, when the

D2C operation does not collide with a D2D operation in the first subframe; and

a step (306) of performing the D2C operation in the first subframe and stopping the D2D operation in the first subframe, when the D2C operation collides with the D2D operation in the first subframe,

the method further comprising:

a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe; or

a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe, the D2C operation collides with the D2D operation in a fourth subframe, and the third subframe is scheduled by scheduling assignments for the D2D operation in the first subframe and the fourth subframe".

B Cited Invention

U.S. Patent Application Publication No. 2014/0004867 (published on January 2, 2014, hereinafter referred to as "Cited Document") cited in the reasons for refusal stated in the examiner's decision includes the following descriptions with drawings.

(A) "3) Third Example Embodiment

[0178] Next, the third example embodiment of the data transmission / reception method in accordance with the present invention will be described.

[0179] FIG. 8 is a subframe timing diagram illustrating the third example embodiment of the data transmission / reception method of the D2D communication in accordance with the present invention.

[0180] In the third example embodiment, there are two types of transmission assignment information 831 that is transmitted by a first base station 810 to a first device 811. One type is activation transmission assignment information indicating a scheduling start, and the other type is release transmission assignment information indicating a scheduling end.

[0181] When the first device 811 receives the transmission assignment information (activation or release), the first device transmits UL reception success or failure information 832 to the first base station after a1 subframes. Here, a value of a1 may be preset to a specific value, and the first base station may notify the first device of the specific value through higher-order layer signaling. The first base station demodulates the UL reception success or failure informational subframes after the transmission of the

transmission assignment information.

[0182] When the first device receives the activation transmission assignment information, the first device generates data 833 according to the activation transmission assignment information and transmits the data 833 to a second device 821. If the first device receives new activation transmission assignment information, the first device may be configured to ignore previously received activation transmission assignment information, generate data according to the new activation transmission assignment information, and transmit the generated data to the second device.

[0183] The activation transmission assignment information may include a combination of resource assignment information, modulation and coding information, transmission precoding matrix information, cyclic shift information, power control information, HARQ process number information, carrier indicator information, frequency hopping indicator information, UL index information, DL assignment index information, channel state request information, resource assignment form information, SRS request information, precoding matrix decision information, DL power offset information, precoding information, scrambling information, number-of-layers information, antenna port information, and the like. As mentioned in relation to the transmission assignment information of the first example embodiment, the activation transmission assignment information may be configured to selectively include the remaining information excluding core information such as the resource assignment information and the modulation and coding information according to a system configuration and a transmission format." (page 12, left column)

(B) "5) Fifth Example Embodiment

[0226] Next, the fifth example embodiment of the data transmission / reception method in accordance with the present invention will be described.

[0227] In the fifth example embodiment, there will be described a process in which a link (second D2D link) through which the second device transmits D2D data to the first device is additionally activated in a state in which the first device transmits data to the second device (in a state in which D2D data transmission is performed through a first D2D link) in accordance with the third example embodiment. Because the fifth example embodiment basically follows the processes of the third example embodiment, differences between the fifth example embodiment and the third example embodiment will be mainly described.

[0228] FIGS. 12 and 13 are subframe timing diagrams illustrating the fifth example embodiment of the data transmission / reception method of the D2D communication in

accordance with the present invention.

(Omitted)

[0232] First, for a case where a subframe in which the first device transmits UL reception success or failure information for activation reception assignment information of the second D2D link received from the first base station overlaps a subframe in which data of the first D2D link is transmitted or where a subframe in which the second device transmits UL reception success or failure information for activation transmission assignment information of the second D2D link received from the second base station overlaps a subframe in which data of the first D2D link is received, data transmission / reception processes of the second D2D link and the first D2D link will be described with reference to FIG. 12.

(Omitted)

[0246] Next, for a case where a subframe in which the first device transmits UL reception success or failure information corresponding to activation reception assignment information of the second D2D link received from the first base station overlaps a subframe in which reception success or failure information of the first D2D link is received or where a subframe in which the second device transmits UL reception success or failure information corresponding to activation transmission assignment information of the second D2D link received from the second base station overlaps a subframe in which reception success or failure information of the first D2D link is transmitted, data transmission/reception processes of the second D2D link and the first D2D link will be described with reference to FIG. 13.

[0247] In FIG. 13, it is assumed that an assignment scheme is used for NDI information of the first D2D link and NDI information of the second D2D link.

[0248] The first base station may transmit the activation reception assignment information of the second D2D link to the first device in a subframe m1+d+c-a1 (1301). When the first device receives the activation reception assignment information of the second D2D link in the subframe m1+d+c-a1, the first device transmits UL reception success or failure information corresponding to the activation reception assignment information of the second D2D link to the first base station in a subframe m1+d+c (1302). At this time, there may occur a state in which the subframe m1+d+c (1302) overlaps a subframe in which the reception success or failure information of the first D2D link should be received from the second device in accordance with the above-described third example embodiment. That is, when a subframe in which UL reception success or failure information for activation reception assignment information of the second D2D link is received from the first base station (Note by the body: the

description "received from the first base station" is considered to be an error for "received at the first base station" or "transmitted to the first base station") overlaps a subframe in which reception success or failure information for data transmitted through the first D2D link is received from the second device, the first device preferentially performs the transmission of UL reception success or failure information for the activation reception assignment information of the second D2D link received from the second base station (Note by the body: the description "second base station" is considered to be an error for "first base station") rather than the reception of reception success or failure information from the second device.

[0249] Because the first device has not received reception success or failure information for data of the first D2D link transmitted to the second device from the second device (Note by the body: the description "from the second device" is considered to be an error for "from the first device") in a subframe m1+d, it may be the case that the first device does not transmit data of the first D2D link in a subframe m1+2d+c (1303) after d subframes from a subframe in which UL reception success or failure information has been transmitted so as to prevent unnecessary power consumption. The first device may transmit data of the first D2D link to the second device in a subframe m1+3d+2c based on reception success or failure information for data of the first D2D link after receiving the reception success or failure information for the data of the first D2D link in a subframe m1+2d+2c.

[0250] In addition, the first device may transmit the data of the first D2D link in the subframe m1+2d+c (1303). At this time, the first device initially transmits or retransmits data of the first D2D link (that is, data of the subframe 1303) to be first transmitted after receiving the activation reception assignment information of the second D2D link. That is, the first device may be configured so that the data of the first D2D link to be first transmitted after receiving new activation reception assignment information (the activation reception assignment information of the second D2D link) is constantly transmitted in initial transmission or retransmission." (p. 16 left column, right column, p. 18 left column to right column)

FIG. 8

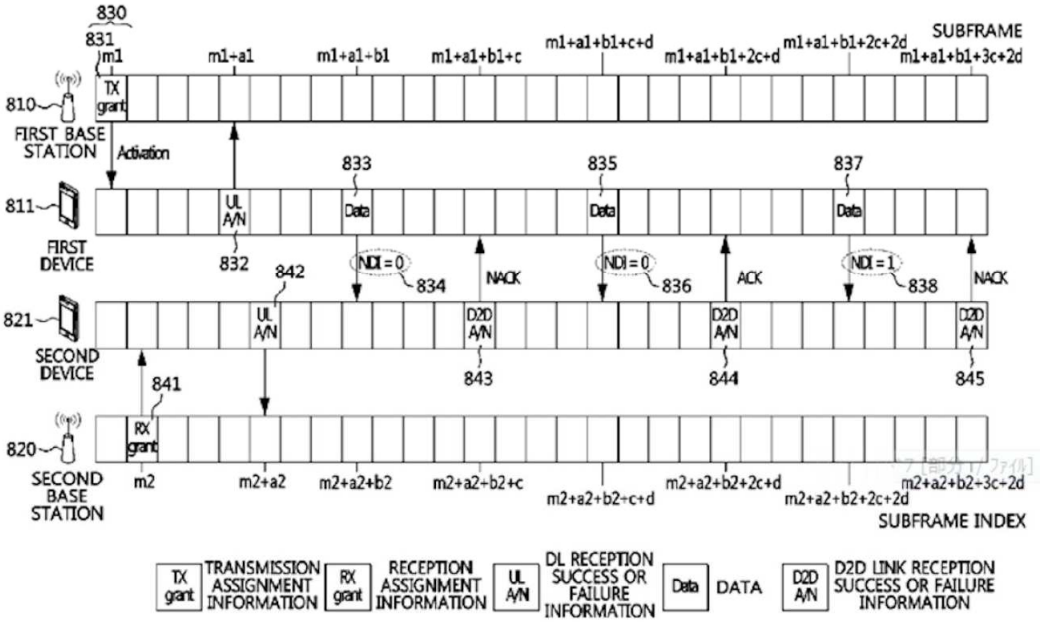
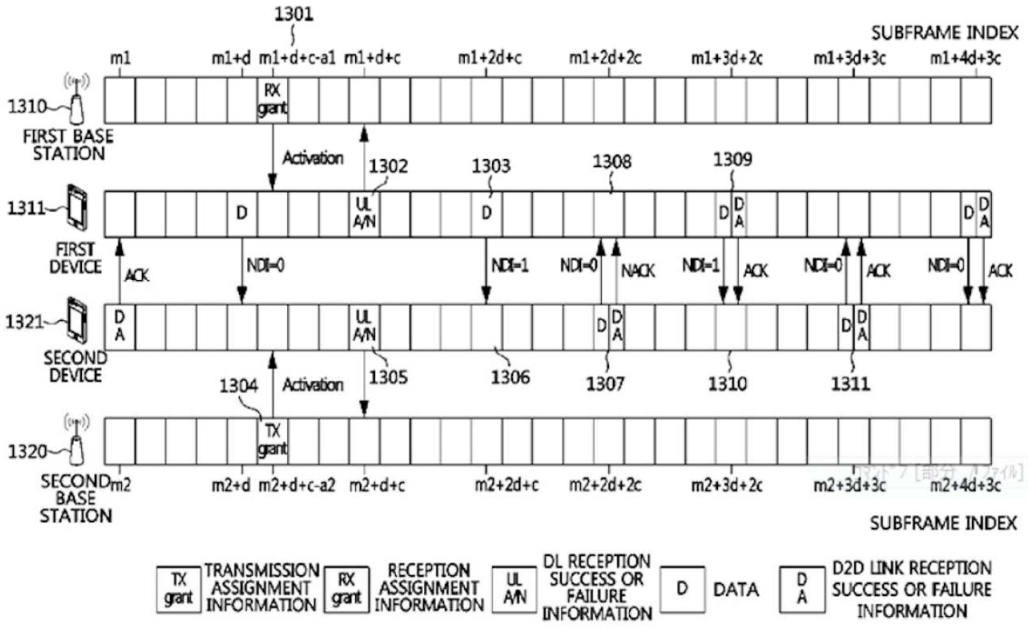


FIG. 13



In light of the descriptions in (A), (B), FIGS. 8 and 13, and common general technical knowledge of a person skilled in the art, the following matters are recognized: (i) According to the description in (A) [0181], when the first device receives the

activation transmission assignment information, the first device transmits UL reception success or failure information to the first base station after a1 subframes, while the subframe for transmitting the UL reception success or failure information is determined based on the value of a1 preset in the first device or notified through higher-order layer signaling. According to the description in (B) [0248] and FIG. 13, the same applies to the UL reception success or failure information for the activation reception assignment information.

Therefore, the Cited Document is acknowledged as describing "determining a subframe for transmitting UL reception success or failure information to a first base station".

(ii) According to the description in (B) [0248], when the first base station transmits the activation reception assignment information of the second D2D link to the first device in a subframe m1+d+c-a1 (1301), in the first device, in a subframe m1+d+c (1302), transmission of UL reception success or failure information corresponding to activation reception assignment information of the second D2D link to the first base station overlaps reception of reception success or failure information for data transmitted through the first D2D link from the second device, and the first device preferentially performs the transmission of UL reception success or failure information to the first base station rather than the reception of reception success or failure information for the first D2D link from the second device. That is, the reception of reception success or failure information for the first D2D link from the second device is stopped.

As described in (i), the subframe m1+d+c (1302) is considered as a subframe determined based on the value of a1.

Therefore, it is recognized that the Cited Document describes "performing transmission to the first base station in the subframe and stopping the reception from the second device in the subframe when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station".

(iii) According to the description in (B) [0249] and FIG. 13, when the data for the first D2D link is transmitted in a subframe m1+d from the first device to the second device, the first device does not receive reception success or failure information for the data in the subframe m1+d+c (1302) from the second device, which indicates that the first device does not transmit the data for the first D2D link in a subframe m1+2d+c (1303).

According to FIG. 13, the reception of reception success or failure information ((m1+d+c), m1+2d+2c, m1+3d+3c) from the second device with respect to the transmission (m1+d, m1+2d+c, m1+3d+2c) of data for the first D2D link to the second device is performed c subframes after the data transmission, and retransmission of data (NDI=1 for NACK) for the first D2D link or transmission of the next data (NDI=0 for ACK) to the second device (m1+2d+c, m1+3d+2c, m1+4d+3c) based on the reception of reception success or failure information from the second device is performed d subframes after the reception of reception success or failure information (m1+d+c, m1+2d+2c, m1+3d+3c), and the above operations are repeated.

Contrary to the description in [0249], the description, "In addition, the first device may transmit the data of the first D2D link in the subframe m1+2d+c (1303)", is included in (B) [0250]. The expression "In addition, ... may" is considered as indicating an additional example. The description does not deny the embodiment in [0249].

Therefore, the Cited Document is acknowledged as describing "not transmitting data to the second device based on the reception of reception success or failure information which has not been received, when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station, and when the following operations are repeated: receiving the reception success or failure information from the second device with respect to the transmission of data for the first D2D link to the second device c subframes after the data transmission; and retransmitting the data for the first D2D link or transmitting the next data to the second device based on the reception of the reception success or failure information from the second device d subframes after the reception of the reception success or failure information".

In light of the above, it is recognized that the Cited Document describes the following invention (hereinafter referred to as "Cited Invention").

"A method comprising:

determining a subframe for transmitting UL reception success or failure information to a first base station;

performing transmission to the first base station in the subframe and stopping the reception from the second device in the subframe when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the

first base station; and

not transmitting data to the second device based on the reception of reception success or failure information which has not been received, when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station, and when the following operations are repeated: receiving the reception success or failure information from the second device with respect to the transmission of data for the first D2D link to the second device c subframes after the data transmission; and retransmitting the data for the first D2D link or transmitting the next data to the second device based on the reception of the reception success or failure information from the second device d subframes after the reception of the reception success or failure information."

C Comparison / judgment

The Invention after the Aamendment and the Cited Invention are compared below.

(i) The description in the Cited Invention "transmitting UL reception success or failure information to a first base station", which indicates a transmission from the first device to the first base station, is included in the "device-to-cellular (D2C) operation to a network" in the Invention after the Amendment.

Therefore, the description in the Cited Invention, "determining a subframe for transmitting UL reception success or failure information to a first base station", corresponds to the description in the Invention after the Amendment, "a step (302) of determining a first subframe for performing a device-to-cellular (D2C) operation to a network".

(ii) The description in the Cited Invention, "reception of reception success or failure information for the first D2D link from the second device", is considered to correspond to "device-to-device (D2D) operation for a communication device".

Therefore, the description in the Cited Invention, "performing transmission to the first base station in the subframe and stopping the reception from the second device in the subframe when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station", corresponds to the description in the Invention after the Amendment, "a step (306) of performing the D2C operation in the first subframe and stopping the D2D operation in the first subframe,

when the D2C operation collides with the D2D operation in the first subframe".

(iii) As described above, the description in the Cited Invention, "reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station", corresponds to the description in the Invention after the Amendment, "the D2C operation collides with the D2D operation in the first subframe".

The description in the Cited Invention, "when the following operations are repeated: receiving the reception success or failure information from the second device with respect to the transmission of data for the first D2D link to the second device c subframes after the data transmission; and retransmitting the data for the first D2D link or transmitting the next data to the second device based on the reception of the reception success or failure information from the second device d subframes after the reception of the reception success or failure information", is interpreted as meaning that the subframe relating to transmission of data and reception of reception success or failure information is scheduled by scheduling assignment.

Thus, a subframe (subframe m1+2d+c (1303)) in which data retransmission for the first D2D link or transmission of the next data to the second device based on the reception of reception success or failure information is performed can be a "third subframe" scheduled by scheduling assignment for receiving reception success or failure information. The description in the Cited Invention, "transmitting data to the second device based on the reception of reception success or failure information which has not been received", corresponds to the description in the Invention after the Amendment, "the D2D operation in the third subframe". The term "not transmitting" can be arbitrarily referred to as "stopping the D2D operation".

Therefore, the description in the Cited Invention, "not transmitting data to the second device based on the reception of reception success or failure information which has not been received, when reception of reception success or failure information for the first D2D link from the second device overlaps in the subframe where UL reception success or failure information is to be transmitted to the first base station, and when the following operations are repeated: receiving the reception success or failure information from the second device with respect to the transmission of data for the first D2D link to the second device c subframes after the data transmission; and retransmitting the data for the first D2D link or transmitting the next data to the second device based on the reception of the reception success or failure information from the second device d subframes after the reception of the reception success or failure information",

corresponds to the description in the Invention after the Amendment, "stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe".

(iv) The descriptions in the Invention after the Amendment, "a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe" and "a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe, the D2C operation collides with the D2D operation in a fourth subframe, and the third subframe is scheduled by scheduling assignments for the D2D operation in the first subframe and the fourth subframe", are alternatives. Thus, absence of the step regarding the latter alternative in the Cited Invention is not a different feature.

(v) The Cited Invention may be arbitrarily referred to as "a method of handling a device-to-device (D2D) operation for a communication device".

In light of the above, the Invention after the Amendment and the Cited Invention have the following corresponding feature and different feature.

(Corresponding Feature)

"A method of handling a device-to-device (D2D) operation for a communication device, the method comprising:

a step (302) of determining a first subframe for performing a device-to-cellular (D2C) operation to a network; and

a step (306) of performing the D2C operation in the first subframe and stopping the D2D operation in the first subframe, when the D2C operation collides with the D2D operation in the first subframe,

the method further comprising:

a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe."

(Different Feature)

The Invention after the Amendment is configured to include "a step (304) of performing the D2C operation in the first subframe, when the D2C operation does not

collide with a D2D operation in the first subframe", whereas the Cited Invention does not clearly indicate how to operate "when the D2C operation does not collide with a D2D operation in the first subframe".

The above-mentioned Different Feature is examined below.

Although the Cited Document does not clearly describe the case when D2C operation does not collide with a D2D operation, it is natural that the first device performs transmitting UL reception success or failure information to a first base station in "a subframe for transmitting UL reception success or failure information to a first base station". It is understood that transmission of UL reception success or failure information to the first base station is performed also in the Cited Invention when reception of reception success or failure information for the first D2D link from the second device does not overlap in the subframe where UL reception success or failure information is to be transmitted to the first base station, and the above configuration can be easily implemented by a person skilled in the art.

The effects of the Invention after the Amendment could also be predicted by a person skilled in the art on the basis of the Cited Invention.

Thus, the Invention after the Amendment is identical with the Cited Invention or could have been easily made by a person skilled in the art on the basis of the Cited Invention. Therefore, the appellant should not be granted a patent for the invention under the provisions of Article 29(1)(iii) and Article 29(2) of the Patent Act.

3 Examination on the appellant's allegation

The appellant alleges in the written opinion submitted on June 2, 2016 as follows, "However, Cited Document 1 does not indicate the relationship between transmission in the first subframe and transmission in a subsequent subframe", and also alleges in the written appeal as follows, "Thus, Claim 1 specifies not only D2D operation in the first subframe when a collision occurs in the first subframe but also D2D operation in a subframe following the first subframe when the collision occurs in the first subframe. This configuration is not indicated in Cited Document 1. Therefore, Cited Document 1 does not disclose the configuration of Claim 1."

However, as described in 2 C (iii), the D2D transmission in the subframe 1302 is a transmission of reception success or failure information by the second device, and the D2D transmission in the subframe 1303 is retransmission of data for the first D2D link

or transmission of the next data based on the reception success or failure information of the subframe 1302. Thus, the above allegation in the written opinion cannot be accepted.

As described in 2 C (iii), the Cited Document also specifies data transmission for the first D2D link in the subframe 1303 following the subframe 1302 when an overlap occurs in the subframe 1302. Thus, the above allegation in the written opinion cannot be accepted.

4 Closing

Therefore, since the Invention after the Amendment cannot be patented independently at the time of filing of the application, the Amendment violates the provisions of Article 126(7) of the Patent Act which is applied mutatis mutandis in the provisions of Article 17-2(6) of the Patent Act. Thus, the Amendment shall be dismissed under the provisions of Article 53(1) of the Patent Act which is applied mutatis mutandis by replacing certain terms pursuant to Article 159(1) of the Patent Act.

No. 3 Regarding the Invention

1 The Invention

Since the written amendment submitted on February 27, 2017 was dismissed as described above, the Invention is acknowledged as follows described in Claim 1 of the scope of claims amended by the written amendment submitted on June 2, 2016.

"A method of handling a device-to-device (D2D) operation for a communication device, the method comprising:

a step (302) of determining a first subframe for performing a device-to-cellular (D2C) operation to a network;

a step (304) of performing the D2C operation in the first subframe, when the D2C operation does not collide with a D2D operation in the first subframe; and

a step (306) of performing the D2C operation in the first subframe and stopping the D2D operation in the first subframe, when the D2C operation collides with the D2D operation in the first subframe,

the method further comprising:

a step of stopping the D2D operation in a second subframe, when the D2C operation collides with the D2D operation in the first subframe and the second subframe is a retransmission subframe corresponding to the first subframe according to the D2D operation;

a step of stopping the D2D operation in a third subframe, when the D2C

operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe; or

a step of stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe, the D2C operation collides with the D2D operation in a fourth subframe, and the third subframe is scheduled by scheduling assignments for the D2D operation in the first subframe and the fourth subframe."

2 Reasons for refusal stated in the examiner's decision

The reasons for refusal stated in the examiner's decision are as follows:

(Novelty) The invention according to the following claim of this application falls under inventions that were described in a distributed publication, or inventions that were made publicly available through an electric telecommunication line in Japan or a foreign country, prior to the filing of the patent application, and falls under the provisions of Article 29(1)(iii) of the Patent Act. Thus, the appellant should not be granted a patent for the invention:

(Inventive step) The invention according to the following claims of this application could have been easily made by a person ordinarily skilled in the art of the invention before filing of the application on the basis of inventions that were described in a distributed publication, or inventions that were made publicly available through an electric telecommunication line in Japan or a foreign country, prior to the filing of the patent application. Thus, the appellant should not be granted a patent for the invention under the provisions of Article 29(2) of the Patent act.

U. S. Patent Application Publication No. 2014/0004867 (Cited Document) is cited for Claim 1.

3 Cited Invention

The Cited Invention is as recognized in "B Cited Invention" in "(2) Independent requirements for patentability" in "2 Propriety of the Amendment" in "No. 2 Decision to dismiss amendment on the written amendment made on February 27, 2017".

4 Comparison / judgment

As a result of comparing the Invention with the Cited Invention, the Invention is made by omitting a limitation on the Amendment from the Invention after the Amendment, or includes a deleted alternative.

Thus, regarding the invention including the deleted alternative, "a step of

stopping the D2D operation in a third subframe, when the D2C operation collides with the D2D operation in the first subframe and the third subframe is scheduled by a scheduling assignment for the D2D operation in the first subframe", there is no difference between the Invention and the Invention after the Amendment.

The Invention after the Amendment is identical with the Cited Invention or could have been easily made by a person skilled in the art on the basis of the Cited Invention as examined in "C Comparison/Judgment" in "(2) Independent requirements for patentability" in "2 Propriety of amendment" in "No. 2 Decision to dismiss amendment",. Therefore, the Invention is also identical with the Cited Invention or could have been easily made on the basis of the Cited Invention for the same reason.

5 Closing

As described above, the Invention is identical with the Cited Invention and could have been easily made by a person skilled in the art on the basis of the Cited Invention. The appellant should not be granted a patent for the invention under the provisions of Article 29(1)(iii) and Article 29(2) of the Patent act.

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

May 30, 2018

Chief administrative judge: KITAOKA, Hiroshi
Administrative judge: SUGAHARA, Michiharu
Administrative judge: YAMAMOTO, Akihiro