

## Appeal decision

Appeal No. 2014-8978

USA

Appellant INTERDIGITAL TECHNOLOGY CORP

Tokyo, Japan

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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2012-113519, entitled "Method and apparatus for supporting handover from LTE/EUTRAN to GRPS/GERAN" (application published on September 6, 2012, Japanese Unexamined Patent Application Publication No. 2012-170144) has resulted in the following appeal decision.

[Conclusion]

The appeal of the case was groundless.

[Reason]

No. 1 History of the procedures

The present application is a divisional application filed on May 17, 2012 from Japanese Patent Application No. 2009-549605 filed on February 12, 2008, as an international filing date (priority claim under the Paris Convention, February 12, 2007, United States). The history of the procedures is as follows.

August 28, 2013: Notice of reasons for refusal

December 03, 2013: Submission of written opinion and written amendment

January 08, 2014: Examiner's decision of refusal

May 14, 2014: Appeal against the examiner's decision of refusal

April 22, 2016: Notice of reasons for refusal by the body

August 26, 2016: Submission of written opinion and written amendment

## No. 2 The Invention

The invention according to Claim 1 of the present application (hereinafter, referred to as the "Invention") is acknowledged as specified by the matters described in Claim 1 according to the scope of claims for patent amended by the written amendment dated August 26, 2016.

"A evolved type node B (eNB) comprising:

a processor configured to make a decision for handover of a wireless transmit/receive unit (WTRU) from a source long term evolution (LTE) cell to a target Global System for Mobile communication (GSM) Enhanced Data Rates for GSM Evolution (EDGE) Radio Access Network (GERAN) cell;

a transmitter configured to transmit, while radio communication is provided to the WTRU through the LTE cell, (1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which, and

a handover request message to a source Mobility Management Entity (MME), the handover request message including a handover source identifier and an identifier of the target GERAN cell; and

a receiver configured to receive a first handover command message from the source MME, the first handover command message including a radio communication parameter related to the target GERAM cell, including Temporary Mobile Subscriber Identity (TMSI),

wherein the transmitter is further configured to communicate a second handover command message to the WTRU on the basis of the first handover command message from the source MME."

## No. 3 Cited Documents

1. Against that, in explanations related to each item, Fig. 5. 4-3 (Figure 5. 4-3: Information flow for handover from SAE/LTE to 2G), and each process shown in the Fig. of "Huawei, Inter RAT handover procedures between 3GPP access systems, 3GPP

TSG SA WG2 Architecture-S2#56 S2-070078, January 09, 2007" (hereinafter, referred to as "Cited Document 1") cited in reasons for refusal by the body notified on April 22, 2016, the following matters are described. (The underlines were applied by the body).

- (A) "5.4.1 2G mode to SAE/LTE mode Handover  
 5.4.2 3G mode to SAE/LTE mode Handover  
 5.4.3 SAE/LTE mode to 2G mode Handover  
 5.4.4 SAE/LTE mode to 3G mode Handover"

- (B) "5.4.3 SAE/LTE mode to 2G mode Handover"

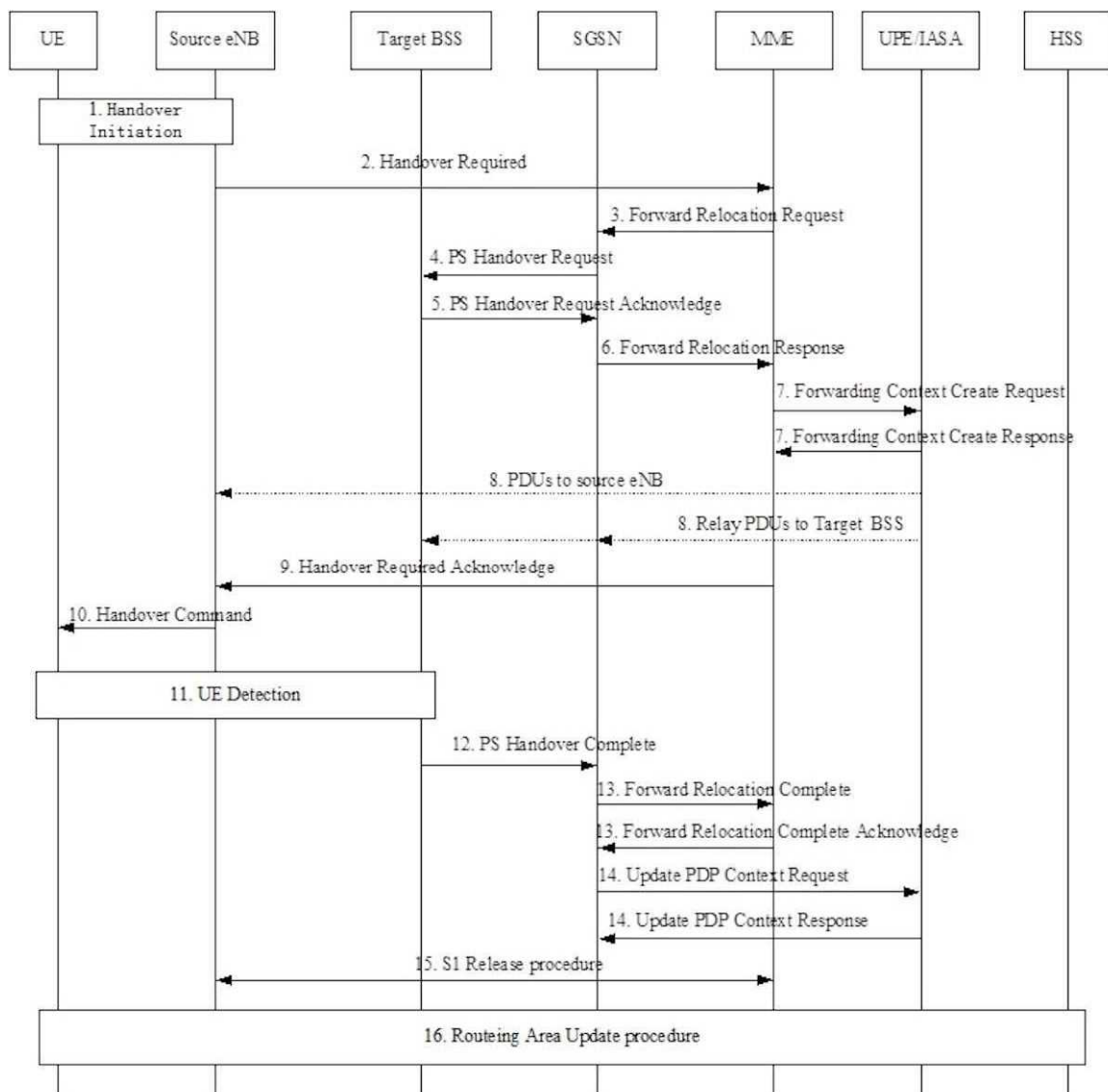


Figure 5.4-3: Information flow for handover from SAE/LTE to 2G

1. The source eNB decides to initiate a handover to BSS.
2. The source eNB sends a Handover Required (Cause, Source ID, Target ID, Source BSS to target BSS transparent container) message to MME. The Source BSS to target BSS transparent container consist of the required information for access in the target cell and the information on allocated radio resources, etc. The Source ID IE identifies the source for the Handover. The Target ID IE identifies the target for the Handover.
3. ... the previous paragraph omitted ...

After the SGSN receives the Handover Preparation Request message, the required PDP context, MM context, SNDCP, and LLC contexts are established and a new P-TMSI is allocated for the UE, and the SGSN begins the process of establishing PFCs for all PDP contexts.

... the following paragraph omitted ...

9. The MME sends a Handover Required Acknowledge (Target BSS to Source eNB Transparent Container, RABs to be Released List) message to the source eNB.
10. The source eNB sends a Handover Command message to the UE."

According to the descriptions of (A) and (B) mentioned above, Cited Document 1 describes

"A source eNB decides to initiate a handover from SAE/LTE to 2G, wherein: the source eNB sends a Handover Required message to MME, the Handover Required message including Source ID and Target ID; Source ID IE identifies a source for the Handover, and Target ID IE identifies a target for the Handover; SGSN allocates a new P-TMSI for UE; the source eNB receives a Handover Required Acknowledge from the MME, the Handover Required Acknowledge including Target BSS to Source eNB Transparent Container; and the source eNB sends a Handover Command message to the UE". (Hereinafter, referred to as "Cited Invention").

2. National Publication of International Patent Application No. 2002-541747 (hereinafter, referred to as "Cited Document 2") cited in reasons for refusal by the body notified on April 22, 2016 describes the following matters. (The underlines were applied

by the body).

(C) "The present invention provides a highly efficient way of ensuring that handoffs from a third generation systems to multiple different kinds of second generation systems is done efficiently and without disruption.

Thus, for example, third generation UMTS systems can ensure communication with any kind of second generation system, including DAMPS, GSM, PDC, etc." ([0009])

(D) "In Step 4 in Fig. 2, the network, which now knows that the mobile station can operate in a dual mode with the performance given in Step 3, gives neighboring cell information to the mobile station. This transmission to the mobile station includes container information of the neighboring cell, even if those systems are of the same generation or different generations." ([0024])

(E) "In the above example embodiments, UMTS, GSM, and PDC systems are described as examples only. The present container structure is not limited to any one of these systems, but may be employed in any type of currently available system or in future generations of mobile radio systems." ([0048])

(F)"

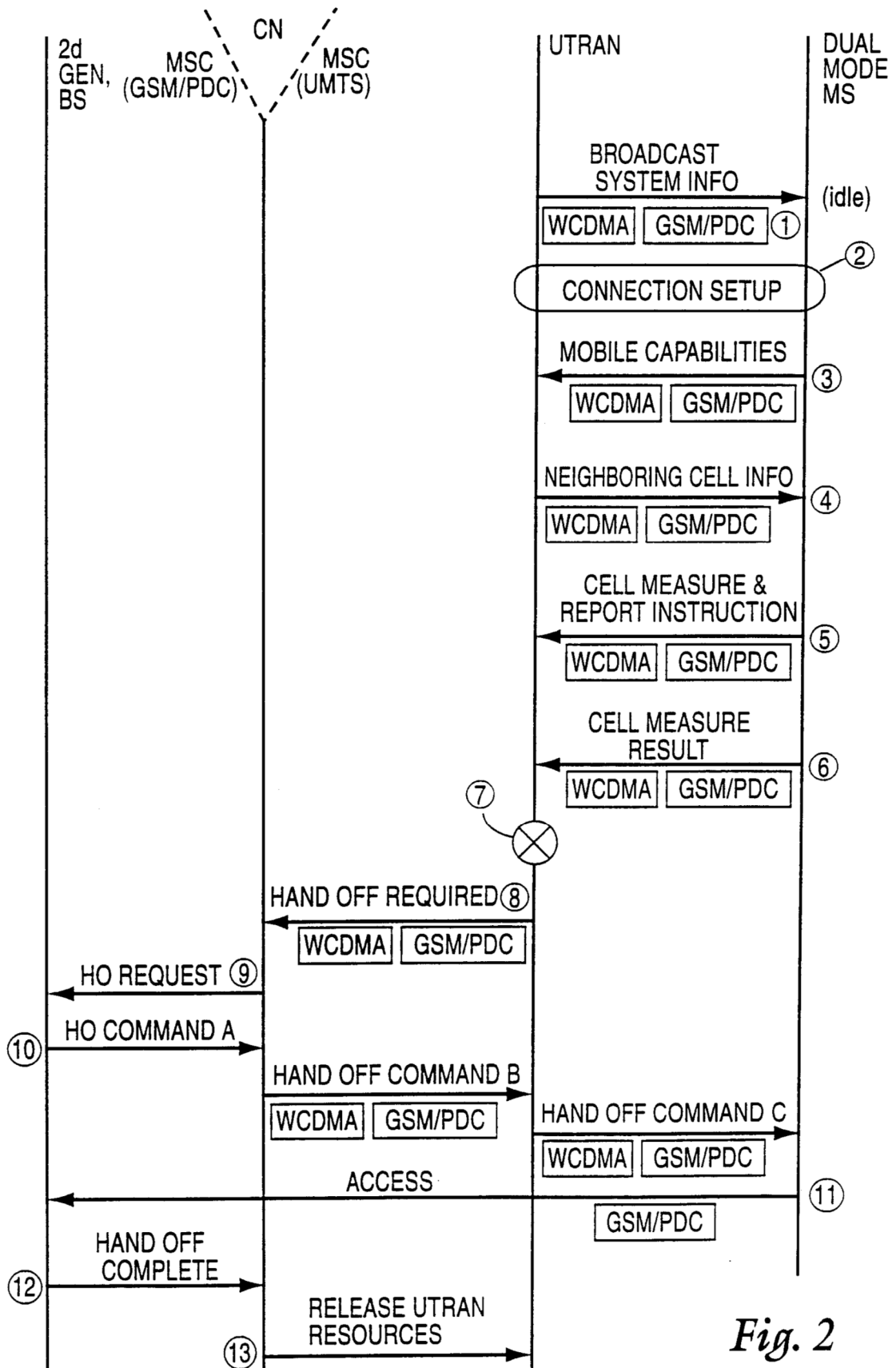


Fig. 2

" ([Fig. 2])

3. Furthermore, International Publication No. WO2006-124950 (hereinafter, referred to as "Cited Document 3") internationally published on November 23, 2006 before the priority date of the present application describes the following matters. (The underlines were applied by the body).

(G) "The present invention is related to wireless communication systems. More particularly, the present invention is related to a method and apparatus for implementing a handoff between radio access networks (RANs) deployed under different radio access technologies (RATs)." ([0003])

(H) "Different types of wireless access systems have been developed to provide different types of services. Some examples of the wireless access systems include wireless local area networks (WLANs), (such as IEEE 802-based networks), and cellular networks (such as universal mobile telecommunication systems (UMTS) terrestrial radio access network (UTRAN), an evolved UTRAN (E-UTRAN), a GPRS/EDGE radio access network (GERAN), or the like). Each of these networks have been developed and tailored to provide specific applications." ([0005])

(I) "Hereinafter the present invention will be explained with reference to an E-UTRAN and an IEEE-based I-WLAN. However, it should be noted that the present invention is applicable to any type of RAN using any type of RAT." ([0028])

(J) "Figure 2 is a signaling diagram of a process 200 of a WTRU-initiated handoff from an E-UTRAN 160 to an I-WLAN 170 based on location in accordance with the present invention. The WTRU 150 is currently attached to the E-UTRAN 160 and is listening to an E-UTRAN channel, such as a broadcast control channel (BCCH) (step 202). The E-UTRAN 160 sends, (i.e., broadcasts, multicasts, or unicasts), a list of RANs, (e.g., I-WLANs, a UTRAN, a GERAN or a GAN), available within the coverage area of the E-UTRAN 160 (step 204). The WTRU 150 receives the list and stores it (step 206). The WTRU 150 then sends to the E-UTRAN 160 a request for the location of service areas of the RANs in the list (step 208). The E-UTRAN 160 then retrieves the location information and sends it to the WTRU 150 (steps 210). The list may include information about the service area locations, radio technologies used by the listed RANs, supported frequencies and data rates, or the like." ([0029])

#### No. 4 Comparison between the Invention and Cited Invention

1. It is obvious that "a source eNB," "MME," and "UE" according to Cited Invention respectively correspond to "a evolved type node B (eNB)," "a source Mobility Management Entity (MME)," and "a wireless transmit/receive unit (WTRU)" of the Invention, respectively.

2. "The source eNB" according to Cited Invention "decides to initiate a handover from SAE/LTE to 2G," and here, it is obvious that "initiate a handover" of the Cited Invention is a matter "about a handover," and it is natural that "decides to initiate a handover" undergoes a process for make a decision when it is determined whether or not the handover should be initiated.

It is common general technical knowledge that "2G" in Cited Invention means the second generation radio communication technology.

Therefore, it can be said that Cited Invention and the Invention are common in a point of "make a decision for handover of a wireless transmit/receive unit (WTRU) from a source long term evolution (LTE) cell to a previous generation cell before the LTE cell."

3. "IE" of "Source ID IE" and "Target ID IE" according to Cited Invention is an abbreviation of Information Element, so that "Source ID IE" and "Target ID IE" are information elements indicating ID; that is, "Source ID" and "Target ID" themselves.

Furthermore, "Source ID IE" of Cited Invention is a source of a handover; that is, an ID for identifying a handover source, and "Target ID IE" of Cited Invention is a target of a handover; that is, an ID for identifying a handover target.

Therefore, it can be said that "Source ID" according to Cited Invention corresponds to "a handover source identifier" of the Invention, and "Target ID" according to Cited Invention corresponds to "an identifier of the target GERAN cell."

4. In Cited Invention, "a Handover Required message" including "Source ID" and "Target ID" is sent from the source eNB to MME, and it can be said that "the Handover Required message" corresponds to "the handover request message" including "a handover source identifier" and "an identifier of the target cell."

5. Since "a Handover Required Acknowledge message" in the Cited Invention is



received by the source eNB from the MME, and "a Handover Command message" is sent to the UE by the source eNB after receiving the Handover Required Acknowledge message, it can be said that those respectively correspond to "a first handover command message" and "a second handover command message."

Considering the matters of 1.-5. mentioned above, the Invention and Cited Invention are identical in a point of "a evolved type node B (eNB) configured to make a decision for handover of a wireless transmit/receive unit (WTRU) from a source long term evolution (LTE) cell to a previous generation cell before the LTE cell;  
configured to transmit a handover request message to a source Mobility Management Entity (MME), the handover request message including a handover source identifier and an identifier of the target GERAN cell;  
configured to receive a first handover command message from the source MME;  
and  
further configured to communicate a second handover command message to the WTRU on the basis of the first handover command message from the source MME," and are different in the following points.

[The different feature 1]

In the Invention, it is specified that the eNB is equipped with "a processor," "a transmitter" and "a receiver," whereas in the Cited Invention, the specific constitution of the source eNB is not mentioned.

[The different feature 2]

Concerning a handover target, it is mentioned as "2G" in the Cited Invention, whereas in the Invention, the handover target is "a target Global System for Mobile communication (GSM) Enhanced Data Rates for GSM Evolution (EDGE) Radio Access Network (GERAN) cell."

[The different feature 3]

In the Invention, it is specified that a transmitter transmits, while radio communication is provided to the WTRU through the LTE cell, "(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which," whereas it is not

specified in Cited Invention.

[The different feature 4]

In the Invention, it is specified that the first handover command message “includes a radio communication parameter related to the target GERAM cell, including Temporary Mobile Subscriber Identity (TMSI),” whereas that is not specified in Cited Invention.

No. 5 Judgment by the body

The different features mentioned above will be examined.

\*Regarding [The different feature 1]

Although the specific constitution of the eNB is not mentioned in the Cited Invention, it is obvious for a person skilled in the art that the eNB is equipped with a constitution of a processor, a transmitter, and a receiver.

Then, in the eNB of Cited Invention, it could be appropriately conceived by a person skilled in the art to make a decision by the processor, transmit a message by the transmitter, and receive the message by the receiver.

\*Regarding [The different feature 2]

As mentioned in (A) of "No. 3 Cited Document" above, before the priority date of the present patent application, a situation in which "LTE mode to 2G mode Handover" or "LTE mode to 3G mode Handover" is considered as an Inter RAT (inter radio access technologies) handover, is disclosed, and under such a situation, in Cited Invention, it could be appropriately conceived by a person skilled in the art to change a handover target to “a target Global System for Mobile communication (GSM) Enhanced Data Rates for GSM Evolution (EDGE) Radio Access Network (GERAN) cell.”

\*Regarding [The different feature 3]

First, we will examine an interpretation about “(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which,” transmitted to the WTRU by the transmitter equipped on the eNB, while radio communication is provided to the WTRU through the LTE cell.

If the description “(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which” is interpreted according to wording, considering the wording "any of which" of the underlined portion which means selection and the description "The WTRU may receive a list of different radio access technologies, including GERAN, from S-ENB to identify the types of the frequency measurements to undertake" in Paragraph [0018] of the specification, it can be interpreted that a transmitter transmits to the WTRU either of "a list of usable LTE cells and GERAN cells" in (1) and "the GERAN cell information" in (2). (Hereinafter, referred to as "interpretation 1").

On the other hand, if it is interpreted that the wording "any of which" of the underlined portion is only applied on (i.e., modifies) "the GERAN cell information," the description “(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which” can be also interpreted as a transmitter transmitting to the WTRU both of "a list of usable LTE cells and GERAN cells" in (1) and "any of the GERAN cell information" in (2). (Hereinafter, referred to as "interpretation 2").

Then, technical matters known in a process (process) when a handover between systems is executed, before the priority date of the present patent application, are summarized.

As mentioned in "No. 3 Cited Document" above, Cited Document 2 discloses a technical matter that "the network gives neighboring cell information to the mobile station" when the handover between systems is executed, and also discloses that it is used without being limited to a specified system. Therefore, before the priority date of the present patent application, "transmitting the neighboring cell information from the network side to the mobile station" when the so-called handover between systems is executed cannot be said to be remarkable in the art.

Similarly, as mentioned in "No. 3 Cited Document" above, Cited Document 3 discloses a technical matter that "The E-UTRAN 160 sends a list of RANs, (e.g., I-WLANs, a UTRAN, a GERAN, or a GAN), available within the coverage area of the E-

UTRAN 160," in a method and apparatus for mounting a handoff between wireless access networks (RANs). Therefore, before the priority date of the present patent application, "transmitting a list of a list of RANs, (e.g., I-WLANs, a UTRAN, a GERAN, or a GAN), available within the coverage area of the E-UTRAN from the network side (E-URAN) to the mobile station (WTRU)" cannot be said to be remarkable in the art.

Also, considering the description " The WTRU may receive a list of different radio access technologies, including GERAN, from S-ENB to identify the types of the frequency measurements to undertake" ([0018]) of the specification of the present application, it is obvious that "(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which," transmitted to the WTRU by the transmitter equipped on the eNB according to the present invention is information used when the WTRU carries out measurement about the neighboring cell that is a handover target candidate.

Then, regardless of whether "(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which" means "interpretation 1" or "interpretation 2," it is cannot be remarkable in the art, as disclosed in Cited Document 2 and Cited Document 3 that the WTRU transmits information necessary for executing measurement about the neighboring cell that is a handover target candidate from the network side (e.g., the eNB) when the handover between systems is executed, and it could be easily conceived by a person skilled in the art to apply the known matter to the Cited Invention.

Since, it is a design matter by a person skilled in the art what kind of information is to be used as information necessary for executing measurement about the neighboring cell, it is a easily executable matter that the transmitter equipped on the eNB transmits to the WTRU "(1) a list of usable LTE cells and GERAN cells which should be used for a handover from the source LTE cell to another radio coverage area including the target GERAN cell using GERAN cell information, and (2) the GERAN cell information, any of which."

\*Regarding [The different feature 4]

Cited Invention discloses that "the SGSN allocates a new P-TMSI for the UE." It is obvious for a person skilled in the art that the "P-TMSI" is information necessary for executing a handover and is information which should be known by both of "UE" and the "network side (eNB and MME)" of the source, and the "network side (Target BSS and SGSN)" of the target, and in Cited Invention, it is a design matter which can be appropriately decided by a person skilled in the art whether the "P-TMSI" allocated for the UE by the SGSN is finally notified to the UE by being included in a Handover Required Acknowledge message sent from the MME to the source eNB so as to notify the UE, or by another means.

Therefore, the Invention could be provided easily by a person skilled in the art by combining the Cited Invention with the known matters described in Cited Document 2 and Cited Document 3.

Then, effects that can be achieved by the constitution of the Invention also could have been easily predicted according to the matters described in Cited Invention, Cited Document 2, and Cited Document 3.

No. 6 Regarding the allegation of the written opinion submitted on August 26, 2016

1. The appellant of the appeal alleged a reason 3 (inventive step) as follows, in the written opinion submitted on August 26, 2016 in response to a notice of reasons for refusal dated April 22, 2016.

"On the contrary, in Cited Documents 1 and 2, there is no disclosure or suggestion of a constitution related to creating a list described in Claim 1, so that a transmitter transmitting the list created by a processor of Claim 1 is neither disclosed nor suggested in Cited Documents 1 and 2.

Also in Cited Documents 3 and 4, the constitution mentioned above is neither disclosed nor suggested. Cited Document 4 discloses a technology relating to CDMA, not LTE/GERAN, so that a list of usable LTE cells and GERAN cells which should be used for a handover is not mentioned at all.

Therefore, no matter how a person skilled in the art combines the inventions described in Cited Document 1 to 4, it is too difficult to conceive the constitution as used in the Invention, so that it is considered that the reason 3 will be solved."

2. The allegation of the appellant of the appeal will be examined.

Although the appellant of the appeal alleged that "the constitution mentioned above is neither disclosed nor suggested," this point is as mentioned in [The different feature 2] of [No. 5 Judgment by the body].

Also, the appellant of the appeal alleged that "Cited Document 4 discloses a technology relating to CDMA, not LTE/GERAN, so that a list of usable LTE cells and GERAN cells which should be used for a handover is not mentioned at all," but in Cited Document 2 of the appeal decision ("Document 4" as the appellant says), as described as " In the above example embodiments, UMTS, GSM, and PDC systems are described as examples only. The present container structure is not limited to any one of these systems, but may be employed in any type of currently available system or in future generations of mobile radio systems." ([0048]), it is suggested that it can be used in all types of present systems or future mobile radio systems, so that the appellant's allegations cannot be accepted.

No. 7 Closing

As described above, the invention could be provided easily by a person skilled in the art according to the matters described in Cited Invention, Cited Document 2, and Cited Document 3, and thus, 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.

November 8, 2016

Chief administrative judge: MIZUNO, Yoshio

Administrative judge: SATO, Tomoyasu

Administrative judge: YOSHIDA, Takayuki