

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)**

To: see form PCT/ISA/220

Date of mailing (day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference see form PCT/ISA/220	FOR FURTHER ACTION See paragraph 2 below
---	--

International application No. PCT/US2019/062948	International filing date (day/month/year) 25.11.2019	Priority date (day/month/year) 29.11.2018
--	--	--

International Patent Classification (IPC) or both national classification and IPC INV. H04W48/02 H04L12/859 H04W28/02 ADD. H04W74/08

Applicant GOOGLE LLC

1. This opinion contains indications relating to the following items:



- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	Date of completion of this opinion see form PCT/ISA/210	Authorized Officer Costa, Elena Telephone No. +49 89 2399-0	
---	--	---	---

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>2-14</u>
	No: Claims	<u>1, 15, 16</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-16</u>
Industrial applicability (IA)	Yes: Claims	<u>1-16</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Cited Documents:

Reference is made to the following documents:

- D1** WO 2018/128458 A1 (LG ELECTRONICS INC) 12 July 2018 (2018-07-12); & US 2019/342821 A1 (KIM JAEHYUN [KR] ET AL) 7 November 2019 (2019-11-07)
- D2** WO 2017/078424 A1 (LG ELECTRONICS INC [KR]) 11 May 2017 (2017-05-11)
- D3** INTEL CORPORATION: "TS36.331 CR on [104#23][LTE/5GC] Capture NR agreements", 3GPP DRAFT; R2-1819116 TS36.331 CR CAPTURE NR AGREEMENTS V04, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), vol. RAN WG2, no. Spokane, USA; 20181112 - 20181116 28 November 2018 (2018-11-28), XP051495341, Retrieved from the Internet:
URL:<http://www.3gpp.org/ftp/tsg%5Fran/WG2%5FRL2/TSGR2%5F104/Docs/R2%2D1819116%2Ezip>
[retrieved on 2018-11-28]

Note: In the following, the cited paragraphs refer to patent document **D1*=US 2019/342821 A1**, which is a family member of the Korean patent document **D1**, published in English and cited in the Search Report as "&" of **D1**.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 1** is not new in the sense of Article 33(2) PCT.

Notwithstanding the **clarity** objections raised in **Re Item VIII**, and insofar as said **claim 1** can be understood, the following is noted:

1.1 Document **D1** discloses (references in parentheses referring to this document) **all** the features of **claim 1**:

a method for informing an upper layer of a user equipment of barring alleviation for multiple access classes (**D1, par. [0324]**, "Thereafter, when the barring timer has expired, the AS layer, i.e., RRC layer, may provide a barring alleviation indication to the NAS layer and/or the application layer, or IMS layer ... Until receiving the barring alleviation indication, the application layer ... cannot transfer MO data or MO signaling to the NAS layer", in combination with **par. [0379]**, "Table 7 shows an access category", and **Table 7**, where it can be seen that "MO signaling" and "MO data" belong to two access categories, "access category number 4" and "access category number 8", respectively), the method comprising the user equipment performing operations including:

determining, at a radio resource control layer of the user equipment, that a first access class is not barred (**D1, par. [0300]-[0301]**, in particular, "... based on the access category, the AS layer of the UE performs a barring check for access control ... When passing is determined instead of barring as a result of the barring check, the AS layer transmits an RRC procedure message, e.g., RRC connection request message", and **figure 18**);

sending, by the radio resource control layer, a first connection request message to a network, the first connection request message requesting permission to establish a first wireless connection associated with the first access class (**D1, above citation of par. [0301]**, in particular, "When passing is determined instead of barring as a result of the barring check, the AS layer transmits an RRC procedure message, e.g., RRC connection request message", and **figure 18**);

receiving, at the radio resource control layer, a rejection message from the network, the rejection message denying the request to establish the first wireless connection (**D1, par. [0303]**, "When the RRC connection request is rejected, the base station may include an ... wait time value in the rejection message and transmit the rejection message to the UE", and **figure 18**);

responsive to the receiving of the rejection message, providing, from the radio resource control layer to the upper layer, a first barring message that indicates barring of at least the first access class and a second access class

(implicitly in **D1**, par. [0304], "Therefore, the AS layer, i.e., RRC layer, of the UE transfers the ... wait time value to the NAS layer of the UE together with an indication representing rejection of the NAS signaling request ...The NAS layer of the UE does not additionally perform an NAS signaling request until the timer has expired", in combination with: par. [0324], "Until receiving the barring alleviation indication, the application layer ... cannot transfer MO data or MO signaling to the NAS layer"; par. [0379], "Table 7 shows an access category", and **Table 7**, where it can be seen that "MO signaling" and "MO data" belong to two access categories, "access category number 4" and "access category number 8", respectively");

responsive to receiving the rejection message, activating, at the radio resource control layer, a common bar timer (**D1**, par. [0305], "Similarly, the AS layer, i.e., RRC layer, of the UE does not perform an RRC connection request until the timer according to the ... wait time value has expired");

responsive to the common bar timer becoming inactive, determining that the barring of at least the first access class and the second access class is alleviated based on respective specific bar timers associated with at least the first access class and the second access class being inactive (**D1**, par. [0324], in particular, "Thereafter, when the barring timer has expired, the AS layer, i.e., RRC layer, may provide a barring alleviation indication to the NAS layer and/or the application layer, or IMS layer ... Until receiving the barring alleviation indication, the application layer, or IMS layer, layer cannot transfer MO data or MO signaling to the NAS layer", in combination with above observation related to Table 7); and

providing, from the radio resource control layer to the upper layer, a first alleviation message that indicates alleviation of the barring of at least the first access class and the second access class (**D1**, see above citations of par. [0324]).

The subject-matter of **claim 1** therefore is **not** novel (see Article 33 (1) and (2) PCT).

1.2 Furthermore, it is pointed out that should the Applicant dispute the aforementioned novelty objections based on minor differences of interpretation between some features of claim 1 and the features disclosed in document D1, the subject-matter of **claim 1** would still **not involve an inventive step** (Article 33 (3) PCT), as D1 aims at the same object as the present claim 1 and discloses the same type of solution.

1.3 In particular, **claim 1** would at least **not** involve an inventive step (Article 33 (3) PCT) in view of the combination of documents **D1 and D2**.

Reference is made, in particular, to the following passages of **D2 (par. [0162]-[0167])**: "Now, a single barring timer is used for ACDC handling in Radio Resource Control, RRC, of a UE. That is, it is impossible to individually count the time when access is barred for each ACDC category because the ACDC categories use the single barring timer in common. Accordingly, an ACDC overriding mechanism using a single barring timer is provided herein. That is, the ACDC overriding mechanism proposed by this specification corresponds to a method for controlling the access of the UE for each ACDC category using the single barring timer".

2 The subject-matter of independent apparatus **claim 15** corresponds to that of independent method claim 1, in terms of structural features. The disclosed passages of **D1** as indicated in above section 1.1 are also applicable for said claim.

As a consequence, **claim 15** is **neither** novel (Article 33 (1) and (2) PCT) **nor** it involves the required inventive step (Article 33 (1) and (3) PCT) in view of the disclosure of document **D1**.

3 The subject-matter of independent processor-readable medium **claim 16** corresponds to that of independent method claim 1, in terms of computer-readable instructions. The disclosed passages of **D1** as indicated in above section 1.1 are also applicable for said claim.

As a consequence, **claim 16** is **neither** novel (Article 33 (1) and (2) PCT) **nor** it involves the required inventive step (Article 33 (1) and (3) PCT) in view of the disclosure of document **D1**.

4 The **dependent claims 2-14** do not appear to contain any additional features which, in combination with the features of the claims to which they respectively refer, meet the requirements of the PCT with respect to inventive step (see

Article 33(1) and (3) PCT), for the reason that the additional features introduced by said dependent claims are either disclosed in or in principle derivable from the cited document **D1 and/or D2**, or represent simple design details which are generally known to the person skilled in the art of wireless communications systems and related access class barring procedures (see, e.g., **D3**). In particular:

Claim 2: the additional features introduced by said claim can also be derived from **D1** (par. [0271]);

Claims 3-4: the additional features introduced by said claim can also be derived from **D1** (par. [0314]-[0323] in combination with par. [0271]) or represent implementation details;

Claim 5: the additional features introduced by said claim can also be derived from **D1** (Table 7, with reference to "MO signaling" type of access, which can belong to "access category number 0" or "number 4");

Claims 6-8: the additional features introduced by said claims can be derived from **D1** (par. [0179]-[0186], and figure 9) **and D2** (par. [0238]-[0262], and figure 9, in particular par. [0262]) in combination;

Claim 9: the additional feature introduced by said claim can be derived from the common general knowledge of a person skilled in the art, see, e.g., **D3** (par. 5.3.16.3);

Claim 10: the additional features introduced by said claim can also be derived from **D1** (par. [0257], and Table 4);

Claim 11: the additional feature introduced by said claim can be derived from the common general knowledge of a person skilled in the art, see, e.g., **D3** (par. 5.3.16);

Claim 12: the additional features introduced by said claim can also be derived from **D1** (par. [0303]-[0304]);

Claim 13: the additional features introduced by said claim can also be derived from **D1** (par. [0324]);

Claim 14: the additional features introduced by said claim can also be derived from **D1** (par. [0324], in combination with par. [0379] and Table 7).

Due to the above reasons, **dependent claims 2-14** do **not** meet the requirements of Article 33(1) and (3) PCT.

Re Item VII

Certain defects in the international application

- 1 Contrary to the requirements of Rule 6.3(b), (i), (ii) PCT, the independent claims are not drafted in the proper two-part "characterised" form, having a preamble that correctly reflects the nearest prior art, that is represented by the above cited document **D1**.
- 2 Contrary to the requirements of Rule 5.1(a) (ii) PCT, the cited document **D1** has not been acknowledged and briefly discussed in the opening part of the description.
- 3 Contrary to the requirements of Rule 6.2(b) PCT, reference signs in parentheses have not been inserted in the claims to increase their intelligibility.
- 4 In case of submitting amendments - e.g. in the PCT Chapter II or in the regional phase - the following remarks should be noted:
 - 4.1 The opening part of the description should be brought into agreement with the wording of any amended claim (Rule 5.1 (a) (iii) PCT).
 - 4.2 While filing amended claims the applicant is requested to take into consideration comments comprised in all sections of this communication. The applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (Rule 66.8 (a) PCT). This is necessary to ensure that no subject-matter has been added which extends beyond the content of the application as originally filed, Article 34 (2) (b) PCT, rendering all amendments made valid.
 - 4.3 The applicant's attention is drawn to the fact that, as a consequence of Rule 66.8 (a) PCT, the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.

Re Item VIII

Certain observations on the international application

The application does not meet the requirements of Article 6 PCT, because **claim 1** is not clear.

- 1 In independent **claim 1**, the meaning of the following features is not clear and leaves the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT:
- a. *"common bar timer"; and*
 - b. *"responsive to the common bar timer becoming inactive, determining that the barring of at least the first access class and the second access class is alleviated based on respective specific bar timers associated with at least the first access class and the second access class being inactive".*

Regarding **feature a**, in particular, it is not clear what is intended with the term "common". Indeed, the current formulation of said claim does not clearly express the feature as in the description (see, e.g., par. [0047]), from which it can be derived that by "common" it is meant that it is associated with both the access classes identified in the barring message sent by the UE RRC to the UE upper layer.

Regarding **feature b**, then, from the current formulation of said feature, it is not clear whether "the barring of at least the first and the second access classes" is determined to be alleviated based on respective specific bar timers or based on the common bar timer. Indeed, said formulation does not clearly express the feature as in the description (see, e.g., par. [0049], and figure 4), where it is stated that *"Responsive to the common bar timer becoming inactive, the UE RRC layer 404 sends an alleviation message 456 to the UE upper layer 402 at 455"*.