

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/SE2020/050431

International filing date (day/month/year)
29.04.2020

Priority date (day/month/year)
02.05.2019

International Patent Classification (IPC) or both national classification and IPC
INV. H04W36/00

Applicant
TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)

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:



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Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

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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>7, 16, 20</u>
	No: Claims	<u>1-6, 8-15, 17-19, 21-30</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-30</u>
Industrial applicability (IA)	Yes: Claims	<u>1-30</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

Reference is made to the following documents:

- D1 NOKIA ET AL: "Report from [104#61][LTE/feMOB] Solution directions for minimizing user data interruption for UL/DL (Nokia)",
3GPP DRAFT; R2-1900619 REPORT FROM [104#61][LTFEMOB]
SOLUTION DIRECTIONS FOR MINIMIZING USER DATA
INTERRUPTION, 3RD GENERATION PARTNERSHIP PROJECT (3GPP),
MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LU
,
vol. RAN WG2, no. Athens, Greece; 20190225 - 20190301 13 February
2019 (2019-02-13), XP051597319,
Retrieved from the Internet:
URL:[http://www.3gpp.org/ftp/tsg%5Fran/WG2%5FRL2/TSGR2%5F105/
Docs/R2%2D1900619%2Ezip](http://www.3gpp.org/ftp/tsg%5Fran/WG2%5FRL2/TSGR2%5F105/Docs/R2%2D1900619%2Ezip)
[retrieved on 2019-02-13]
- D2 INTEL CORPORATION: "Detail for non-split bearer option for simultaneous
connectivity",
3GPP DRAFT; R2-1816695, 3RD GENERATION PARTNERSHIP
PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES
LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE
,
vol. RAN WG2, no. Spokane, USA; 20181108 - 20181112 12 November
2018 (2018-11-12), XP051556264,
Retrieved from the Internet:
URL:[http://www.3gpp.org/ftp/Meetings%5F3GPP%5FSYNC/RAN2/Docs/
R2%2D1816695%2Ezip](http://www.3gpp.org/ftp/Meetings%5F3GPP%5FSYNC/RAN2/Docs/R2%2D1816695%2Ezip)
[retrieved on 2018-11-12]
- D3 HUAWEI ET AL: "Simultaneous Data Transmission in Inter-eNB Handover",
3GPP DRAFT; R2-163657 SIMULTANEOUS DATA TRANSMISSION IN
INTER-ENB HANDOVER, 3RD GENERATION PARTNERSHIP PROJECT
(3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES
LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CED
,
vol. RAN WG2, no. Nanjing; 20160523 - 20160527 22 May 2016
(2016-05-22), XP051105084,

Retrieved from the Internet:

URL:http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN2/Docs/
[retrieved on 2016-05-22]

D4 HUAWEI: "Direct data forwarding for inter-system handover",
3GPP DRAFT; R3-190877, 3RD GENERATION PARTNERSHIP
PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES
LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE

,
vol. RAN WG3, no. Athens, Greece; 20180225 - 20180301 16 February
2019 (2019-02-16), XP051604811,

Retrieved from the Internet:

URL:[http://www.3gpp.org/ftp/tsg%5Fran/WG3%5Flu/TSGR3%5F103/Docs/
R3%2D190877%2Ezip](http://www.3gpp.org/ftp/tsg%5Fran/WG3%5Flu/TSGR3%5F103/Docs/R3%2D190877%2Ezip)
[retrieved on 2019-02-16]

D5 ZTE CORPORATION: "Data forwarding issues for solution 2",
3GPP DRAFT; R3-161598 DATA FORWARDING ISSUES FOR
SOLUTION 2 V3, 3RD GENERATION PARTNERSHIP PROJECT (3GPP),
MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ;
F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE

,
vol. RAN WG3, no. Göteborg; 20160822 - 20160826 21 August 2016
(2016-08-21), XP051127449,

Retrieved from the Internet:

URL:http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN3/Docs/
[retrieved on 2016-08-21]

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, for the following reasons:
- 2 Document **D1** discloses, according to **all** the features of independent **claim 1**, a method performed by a target base station for handover of a wireless device from a source base station, the method comprising:
 - causing transmission, to the source base station, of a first message (see "HO

success indication" on page 19, Step 7, see also Figure on page 18) comprising an indication that a connection between the wireless device and the target base station has been established.

The subject-matter of **claim 1** is thus not new, Article 33(2) PCT.

- 2.1 The subject-matter of **claim 1** is not new, Article 33(2) PCT, also vis-à-vis the disclosure of documents **D2** (see in particular Section 2) and **D3** (see in particular Section 2), respectively.
- 2.2 It is furthermore pointed out that even if the aforementioned novelty objections in paragraphs 2 to 2.1 above were disputed based on minor differences of interpretation between some of the features of **claim 1** and the features of documents **D1 to D3** respectively, the subject-matter of **claim 1** would still not involve the required inventive step, Article 33(3) PCT, considering that documents **D1 to D3** respectively aim at the same object as the present application and disclose the same type of solution.
- 2.3 The same considerations as made above under paragraphs 2 to 2.2 above regarding **claim 1** are also valid for independent **claims 11, 22, 23 and 27** since these claims are based on the same principle as **claim 1** in terms of claims relating to an associated method for the source base station (**claim 11**) and associated apparatuses (**claims 22, 23 and 27**).

The subject-matter of independent **claims 11, 22, 23 and 27** is therefore neither new, Article 33(2) PCT, nor does it involve an inventive step, Article 33(3) PCT.

- 3 Dependent **claims 2 to 10, 12 to 21, 24 to 26 and 28 to 30** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, Article 33(2) PCT (for **claims 2 to 6, 8 to 10, 12 to 15, 17 to 19, 21, 24 to 26 and 28 to 30**), or inventive step, Article 33(3) PCT (for **remaining claims**), for the reason that the subject-matter of said claims is either already disclosed in document **D1** (for **claims 2, 3, 12, 21, 24, 25 and 28**: see in particular on page 19, Steps 6 to 7, see also Figure on page 18; for **claims 4, 6, 8, 9, 13, 16, 17, 18, 26 and 29**: see in particular section 2.2.4; for **claims 5 and 14**: see in particular section 2.2.6; for **claims 10 and 19**: see in particular section 2.2.2), or document **D4** (for **claims 7 and 16**: see in particular on page 2, line 18), or document **D5** (for **claim 20**: see in particular section 2, Option 2), or represents only minor technical implementation details commonly known in the art (for **remaining claims**).

Re Item VII

Certain defects in the international application; further remarks made in respect of the present application

- 1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the most relevant prior art, i.e. document **D1**, is neither acknowledged by reference nor briefly discussed in the introductory part of the description.
- 2 In case of submitting amendments - e.g. in the PCT II, or regional phase - the following remarks should receive the applicant's attention:
 - 2.1 Any new independent claim should be drafted in the proper two-part form recommended by Rule 6.3(b) PCT.
 - 2.2 The opening part of the description should be modified to bring it into agreement with any new independent claim (see Rule 5.1(a)(iii) PCT).
 - 2.3 The applicant is requested to file amendments by way of replacement pages in the manner stipulated by Rule 66.8(a) PCT. In particular, fair copies of the amendments should be filed.

Moreover, 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 (clarity)

- 1 **Claims 1, 11, 22, 23 and 27** do not include all the essential technical features to properly define the present claimed invention. In particular, the present claimed invention has been made to address technical problems specific to Enhanced Make-Before-Break Handover in LTE and NR. This is clear from the description, page 6, lines 16 to 18. Thus, said technical limitation is considered essential to a correct definition of the present claimed invention. This limitation is however not present in any of the independent **claims 1, 11, 22, 23 and 27**.

Requirements of Article 6 PCT are thus not met.