

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/IB2018/057464

International filing date (day/month/year)
26.09.2018

Priority date (day/month/year)
28.09.2017

International Patent Classification (IPC) or both national classification and IPC
INV. H04W72/12 H04W28/08

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

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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>2, 7, 12, 14, 18, 20</u>
	No: Claims	<u>1, 3-6, 8-11, 13, 15-17, 19, 21-27</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-27</u>
Industrial applicability (IA)	Yes: Claims	<u>1-27</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

Re Item V

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

1 Reference is made to the following document:

D1 WO 2017/007147 A1 (LG ELECTRONICS INC [KR]) 12 January 2017
(2017-01-12)

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

D1 discloses (the references in parentheses applying to this document):

A method by a user equipment, UE, configured to transmit packet data units, PDUs, by a first Radio Link Control, RLC, entity via a first uplink transmission path and/or by a second RLC entity via a second uplink transmission path, the method comprising: (see e.g. paragraphs [0034], [0042], [0058], [0065], [0080], [0140]; figures 3, 7)

determining a total amount of data volume buffered for PDU transmission, wherein the total amount of data volume comprises Packet Data Convergence Protocol, PDCP, data volume and RLC data volume pending for initial transmission in the two RLC entities; and (see e.g. paragraphs [0116], [0138], [0144], [0145], [0153])

reporting the PDCP data volume to at least the first uplink transmission path, based on whether the total amount of data volume meets or exceeds a first threshold, wherein the reporting comprises: (see e.g. paragraphs [0119], [0120], [0121], [0131], [0138], [0146])

in response to determining that the total amount of data volume meets or exceeds the first threshold, indicating the PDCP data volume to both the first uplink transmission path and the second uplink transmission path, and (see e.g. paragraphs [0119], [0120], [0121], [0131])

in response to determining that the total amount of data volume does not meet the first threshold, indicating the PDCP data volume to only the first uplink transmission path (see e.g. paragraphs [0119], [0120], [0121], [0132], [0133]).

- 3 The subject - matter of independent claims 6, 11, 17, 23-27, discloses similar technical features or with only minor differences as independent claim 1. Hence, the objection of lack of novelty raised in point 2 applies, mutatis mutandis, to the subject - matter of claims 6, 11, 17, 23-27.

The subject-matter of claims 6, 11, 17, 23-27 is therefore not new (Article 33(2) PCT).

- 4 Dependent claims 3-5, 8-10, 13, 15, 16, 19, 21, 22 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).

The additional features introduced by dependent claims 3-5, 8-10, 15, 16, 21, 22 are disclosed in document D1 as well:

For claims 3, 8, 15, 21: see e.g. figures 6, 7; paragraphs [0057], [0058];

For claims 4, 9, 13, 19: see e.g. paragraphs [0076], [0121], [0132];

For claims 5, 10, 16, 22: see e.g. paragraphs [0044], [0065], [0095].

- 5 Dependent claims 2, 7, 12, 14, 18, 20 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 inventive step. The additional features of dependent claims 2, 7, 12, 14, 18, 20 appear to represent merely obvious design choices known to the skilled person in the art of wireless communications and related technologies, that he would consider, depending on circumstances, without exercising inventive skill.

Re Item VII

Certain defects in the international application

- 1 Independent claims 1, 6, 11, 17, 23-27 are not in the two-part form in accordance with Rule 6.3(b) PCT.
- 2 The prior-art document D1 is neither identified, nor is the relevant background art disclosed therein briefly discussed in the description (Rule 5.1(a)(ii) PCT).

Re Item VIII

Certain observations on the international application

- 1 Although claims 1, 11 have been drafted as separate independent claims directed to a method, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

- 2 Although claims 6, 17, 25, 26, 27 have been drafted as separate independent claims directed to an apparatus, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.