

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

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Date of mailing (day/month/year) 14 January 2020 (14.01.2020)

Applicant's or agent's file reference OP19-119	FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/KR2019/012043	International filing date (day/month/year) 18 September 2019 (18.09.2019)	Priority date(day/month/year) 05 December 2018 (05.12.2018)
International Patent Classification (IPC) or both national classification and IPC H04W 72/14(2009.01)i, H04W 28/02(2009.01)i		
Applicant LG ELECTRONICS INC.		



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 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.

 <p>Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578</p>	<p>Date of completion of this opinion</p> <p>14 January 2020 (14.01.2020)</p>	<p>Authorized officer</p> <p>YANG, Jeong Rok</p> <p>Telephone No. +82-42-481-5709</p> 
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2019/012043

Box No. I Basis of this 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 43*bis*.1(b))
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 13*ter*.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 13*ter*.1(a)).
 - on paper or in the form of an image file (Rule 13*ter*.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:

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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)	Claims	<u>1-9</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>1-9</u>	YES
	Claims	<u>NONE</u>	NO
Industrial applicability (IA)	Claims	<u>1-9</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: 3GPP TS 38.321 v15.3.0, '3GPP; TSGRAN; NR; MAC protocol specification (Release 15)', 25 September 2018

D2: ERICSSON, 'Further aspects on BSR transmission and cancellation', R2-1711180, 3GPP TSG-RAN WG2 #99bis, Prague, Czech Republic, 28 September 2017

D3: US 2016-0157256 A1 (ASUSTEK COMPUTER INC.) 2 June 2016

D4: US 2017-0310433 A1 (OFINNO TECHNOLOGIES, LLC) 26 October 2017

D5: US 2017-0238337 A1 (LG ELECTRONICS INC.) 17 August 2017

I. Novelty and Inventive Step (PCT Article 33(2) and 33(3))

The subject matter of claim 1 differs from that of the prior art documents in a method comprising: when a UL grant can accommodate all of pending data for a first logical channel but is not sufficient to additionally accommodate a BSR, including the pending data for the first logical channel to a PDU with canceling the BSR; and transmitting the PDU to a network, wherein the UL grant cannot additionally accommodate all of pending data for a second logical channel. And it is not obvious to a person skilled in the art by the documents taken alone or in combination.

Claim 5 relates to a user equipment and has substantially the same technical features as those of claim 1.

Claims 2-4, 6-9 are dependent on claims 1, 5 respectively.

Therefore, claims 1-9 are novel and involve an inventive step.

II. Industrial Applicability (PCT Article 33(4))

Claims 1-9 are industrially applicable.