

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/US2019/062532

International filing date (day/month/year)
21.11.2019

Priority date (day/month/year)
26.11.2018

International Patent Classification (IPC) or both national classification and IPC
INV. H04W88/06 H04W72/12

Applicant
QUALCOMM INCORPORATED

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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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>1-29</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-29</u>
Industrial applicability (IA)	Yes: Claims	<u>1-29</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 documents cited in the International Search Report:

D1 US 2016/381710 A1 (BANSAL ET AL) 29 December 2016 (2016-12-29)

D2 INTEL CORPORATION: "Further discussion on requirements in NR RRC_Idle", 10 August 2018 (2018-08-10), pages 1-6, XP051578847

D3 US 2016/050644 A1 (ANAND ET AL) 18 February 2016 (2016-02-18)

D4 US 2015/257099 A1 (SU LI [US]) 10 September 2015 (2015-09-10)

2 Claim 1 does not meet the criteria of Article 33(1) and (3) PCT, because it lacks inventive step.

2.1 Document D1, which is considered to represent the closest prior-art, discloses, according to the features of claim 1:

A method of wireless communication at a User Equipment UE having a first subscription to a first Radio Access Technology RAT and a second subscription to a second RAT (*par. [0001], "dual-SIM dual-standby (DSDS) wireless communication device"; par. [0003], "with an active data communication on one SIM (e.g., the first SIM), the wireless communication device may periodically tune away to a network associated with another SIM (e.g., the second SIM) to monitor signals or acquire a connection"; par. [0034], "one or more radio access technologies (e.g., GSM, UMTS, CDMA2000, LTE, etc.)", [0039], [0059]*), the method comprising:

operating using the first RAT (*par. [0019] - [0021]*);

changing from operating using the first RAT to operating using the second RAT to monitor for multiple ~~Synchronization Signal Blocks SSBs~~ bursts at multiple times () prior to performing at least one of decoding a paging message, receiving system information, searching a neighboring frequency, or measuring the neighboring frequency (*par. [0003], "with an active data communication on one SIM (e.g., the first SIM), the wireless communication device may periodically tune away to a network associated with another SIM (e.g., the second SIM) to monitor signals or acquire a connection. ... even when no channel access is ultimately granted to the second SIM"; par. [0019], "minimize*

unnecessary tune-away time within the sequence of four TDMA frames by performing single burst tune-aways to the network associated with the second SIM for only the assigned timeslot, and tuning back to the network associated with the first SIM for the remaining timeslots"; par. [0020], "In either case, the wireless communication device may stop performing the tune-aways until the next message opportunity on the second SIM ... If a burst cannot be identified as part of a paging request message, ... stop performing the tune-aways and burst decoding"; see also par. [0021]);

returning to operating using the first RAT during a first period between at least one set of adjacent times of the multiple times that the UE monitors for the bursts SSBs (par. [0019] - [0021]); and

changing from operating using the first RAT to operating using the second RAT to receive the paging message, receive the system information, search the neighboring frequency, or measure the neighboring frequency (par. [0019] - [0021]).

- 2.2 The subject-matter of claim 1 therefore differs from D1 only in that it is based on SSBs (which are actually also a particular type of bursts specific to the 5G New Radio, NR, RAT, see D2) instead of the generic bursts used in D1. D1 does not explicitly relate to the 5G technology, but mentions that its teaching is applicable to other technologies (see par. [0034], [0039], [0059]). Hence the skilled person starting from D1 arrives at the claimed subject-matter without needing inventive activity.
- 2.3 This conclusion is also supported by the fact that the claimed intermittent SSB monitoring was already known in the 5G NR area, see in particular D2, fig. 1 and corresponding passages, wherein SSB warm-up bursts for pre-synchronization, AGC (automatic gain control) are introduced before each paging opportunity PO. The hence created gaps are used in D2 for power saving and reducing the UE power-on duration on the NR RAT, but the skilled person starting from D1 understands that these gaps could also be used for the first RAT / SIM / subscription as claimed. Hence the skilled person starting from D1 and additionally using D2 arrives again at the claimed subject-matter without needing inventive activity.
- 3 The subject-matter of the other independent claims 11, 20 and 29 respectively corresponds to apparatuses and a computer program product, all adapted to carry out the method from claim 1. Thus, the subject-matter of the independent claims 11, 20 and 29 is also not inventive and these claims do not meet the criteria of Article 33(1) and (3) PCT.

- 4 The dependent claims do not present additional features which, either alone or in combination with the features of any claim to which they refer, meet the PCT requirements with respect to novelty or inventive step, as their features are either already known from the prior-art (preparation, paging, SI, cell searching, measurement), or are common measures (threshold - see D3, par. [0042], wherein "the Multi-SIM wireless device may combine n number of bursts into one bigger QBTA gap" to increase the UE power-on duration on the second RAT, and hence the UE performance on the second RAT).

Re Item VII

Certain defects in the international application

- 1 The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the indicated closest prior art being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- 2 Contrary to the requirements of Rule 5.1(a)(ii) and (iii) PCT, the relevant background art disclosed in D1 is not mentioned in the description, nor is this document identified and discussed therein.
- 3 The features of the claim/s are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

- 1 Besides the known in the art tuneaway from RAT1/SIM1 to RAT2/SIM2 of a DSDS UE (see D1, D3 and D4), claim 1 discloses only additional intermittent SSB monitoring (also known in the art as such, see D2), however without any further use of this monitoring (Article 6 PCT). It is also noted that, because the exact purpose of this additional intermittent SSB monitoring is also not derivable from the claim, it follows that no technical effect could be associated with this additional intermittent SSB monitoring features.
- 2 Although claims 11 and 20 have been drafted as separate independent method claims, 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. The aforementioned claims therefore lack conciseness.