

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference TD1610249P	FOR FURTHER ACTION	See item 4 below
International application No. PCT/CN2016/107756	International filing date (<i>day/month/year</i>) 29 November 2016 (29.11.2016)	Priority date (<i>day/month/year</i>)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant HUAWEI TECHNOLOGIES CO., LTD.		

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																						
<input type="checkbox"/>	Box No. II	Priority																						
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																						
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																						
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																						
<input type="checkbox"/>	Box No. VI	Certain documents cited																						
<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application																						
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

	Date of issuance of this report 04 June 2019 (04.06.2019)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Xin Wang
Facsimile No. +41 22 338 82 70	e-mail: pct.team2@wipo.int

From the INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 30 June 2017	
Applicant's or agent's file reference TD1610249P	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/CN2016/107756	International filing date (day/month/year) 29 November 2016
International Patent Classification (IPC) or both national classification and IPC H04L 29/06(2006.01)i	
Applicant HUAWEI TECHNOLOGIES CO., LTD.	

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.

Name and mailing address of the ISA/	Date of completion of this opinion	Authorized officer
--------------------------------------	------------------------------------	--------------------

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/CN2016/107756

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 43*bis*.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 filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
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 in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2016/107756

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**

1. Statement

Novelty (N)	Claims	<u>1-18</u>	YES
	Claims	<u>None</u>	NO
Inventive step (IS)	Claims	<u>1-18</u>	YES
	Claims	<u>None</u>	NO
Industrial applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations :

- [1] D1: CN 105162778 A discloses a cross-layer authentication method based on a radio frequency fingerprint, and specifically discloses the following features (see claims 1-8): a user equipment sending a carrier aggregation capability thereof to a network side; a network side device acquiring the carrier aggregation capability of the user equipment; the network side device configuring an aggregation carrier for the user equipment according to the carrier aggregation capability of the user equipment; when the user equipment supports carrier aggregation between different frequency bands, the user equipment sending a capacity of carrier aggregation between different frequency bands to the network side; when the user equipment supports carrier aggregation in the same frequency band, the user equipment sending the capacity of carrier aggregation in the same frequency band to the network side; when the user equipment supports carrier aggregation between different frequency bands and in the same frequency band, the user equipment respectively sending the capacity of carrier aggregation between different frequency bands and the capacity of carrier aggregation in the same frequency band to the network side; or the user equipment sending the capability of carrier aggregation between different frequency bands and the capability of carrier aggregation in the same frequency band to the network side in combination.
- [2] D2: CN 102056293 A discloses a radio frequency fingerprint positioning method and system, a wireless controller and a positioning server.
- [3] D3: CN 103945428 A discloses a radio frequency fingerprint database updating method, apparatus and system.
- [4] D1 is considered to be the prior art closest to the technical solutions of independent claims 1, 6, 10 and 15.
- [5] Novelty:
- [6] D1 at least does not explicitly or implicitly disclose the following features: steps such as collection authentication with regard to a terminal. Therefore, the technical solutions of independent claims 1, 6, 10 and 15 containing the technical features above are novel and comply with PCT Article 33(2). Accordingly, dependent claims 2-5, 7-9, 11-14 and 16-18 are also novel and comply with PCT Article 33(2).
- [8] Inventive Step:
- [9] The technical solutions of claims 1-18 can neither be learned from a combination of the prior art, nor can be derived, in an obvious way, by a person skilled in the art from a combination of the prior art, and therefore said claims involve an inventive step in the sense of PCT Article 33(3).
- [10] Industrial Applicability:
- [11] The technical solutions of claims 1-18 are industrially applicable in the technical field of communications, and therefore said claims are industrially applicable in the sense of PCT Article 33(4).

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2016/107756**Box No. VII Certain defects in the international application**

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

- [1] Claims 5 and 14, which are multiple dependent claims themselves, refer to preceding multiple dependent claims, and therefore do not comply with PCT Rule 6.4(a).