

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
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 Beijing

LEADER PATENT & TRADEMARK FIRM

PCT

WRITTEN OPINION OF THE
 INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

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| Applicant's or agent's file reference PCT201809318 | | Date of mailing (day/month/year) 29 December 2018 |
| FOR FURTHER ACTION See paragraph 2 below | | |
| International application No. PCT/CN2018/108556 | International filing date (day/month/year) 29 September 2018 | Priority date (day/month/year) 29 September 2017 |
| International Patent Classification (IPC) or both national classification and IPC H04L 9/08(2006.01)i; H04L 9/06(2006.01)i | | |
| Applicant BITMAIN TECHNOLOGIES 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.

| | | |
|--|---|--|
| Name and mailing address of the ISA/ National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 | Date of completion of this opinion 25 December 2018 | Authorized officer ZHANG, Qi |
| Facsimile No. (86—10) 62019451 | Telephone No. 86-(10)-53961607 | |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/CN2018/108556

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:
 - 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. II Priority

1. The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
 [1] The priority is valid.

**WRITTEN OPINION OF THE
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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>1-19</u> | YES |
| | Claims | <u>None</u> | NO |
| Inventive step (IS) | Claims | <u>None</u> | YES |
| | Claims | <u>1-19</u> | NO |
| Industrial applicability (IA) | Claims | <u>1-19</u> | YES |
| | Claims | <u>None</u> | NO |

2. Citations and explanations :

[1] (1) Reference is made on the following document:

[2] D1: CN105933318A 07 Sep. 2016 (07.09.2016)

[4] (2) Novelty and Inventive step

[5] D1 is regarded as being the closest prior art to the subject-matter of claims 1 and 6, and discloses a data secret-keeping method (see description, paragraphs [0115]-[0203]): generating key indexes, and sending the key indexes to a key server, wherein a key table is pre-stored in the key server, and the key table comprises the key indexes and keys in one-to-one correspondence with the key indexes; receiving the keys which are returned by the key server and are corresponding to the key indexes; encrypting a to-be-transmitted file with the keys to obtain an encrypted file; and sending the encrypted file together with the key indexes to the server. By using a random algorithm to generate a random number as a key index, key index leakage can be prevented. The random algorithm generates a random number according to the current time. Receiving, by the server, the encrypted file sent by the client and key index thereof, sending the key index to the key server, and receiving a key corresponding to the key index returned by the key server, using the key to decrypt the encrypted file, and the decrypted file is obtained.

[6] The subject-matter of claims 1 and 6 differs from D1 in that: the encrypted file is a control command, the encryption party is a control terminal, and the decryption party is a computing device. The subject-matter of claims 1 and 6 is therefore novel in the sense of Article 33(2) PCT. However, applying the encrypted transmission mode in D1 to the transmission of control commands between the control terminal and the computing device is customary means in the art. Therefore, the subject-matter of claims 1 and 6 does not involve an inventive step in the sense of Article 33(3) PCT.

[7] Claims 10 and 15 are the devices corresponding to the methods defined in claims 1 and 6. For the similar reasons as detailed in comments on claims 1 and 6, the subject-matter of claims 10 and 15 is novel in the criteria set out in Article 33(2) PCT, but does not involve an inventive step in the sense of Article 33(3) PCT.

[8] Claims 2-5, 7-9, 11-14, 16-18 are dependent on claims 1, 6, 10, 15 respectively, so claims 2-5, 7-9, 11-14, 16-18 are novel, and meet the criteria set out in Article 33(2) PCT.

[9] The additional features of claims 2-5, 7-9, 11-14, 16-18 are the customary means for a skilled person in the art. Therefore, claims 2-5, 7-9, 11-14, 16-18 do not involve an inventive step in the sense of Article 33(3) PCT.

[10] Claim 19 is a system for transmitting and executing a control command, comprising a control terminal according to any one of claims 10-14 and a computing device according to any one of claims 15-18. Based on the comments for claims 10-18, claim 19 is novel in the criteria set out in Article 33(2) PCT, and does not involve an inventive step in the sense of Article 33(3) PCT.

[12] (3) Industrial applicability

[13] The inventions of claims 1-19 can find industrial applicability in the technical field of communication, and thus meet the requirements of Article 33(4) PCT.