

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43*bis*.1)

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/IB2017/054425

International filing date (day/month/year)  
21.07.2017

Priority date (day/month/year)  
29.07.2016

International Patent Classification (IPC) or both national classification and IPC  
INV. H04L9/32

Applicant  
NCHAIN HOLDINGS LIMITED

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 43*bis*.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 66.1*bis*(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**

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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:

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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**

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1. Statement

|                               |             |                   |
|-------------------------------|-------------|-------------------|
| Novelty (N)                   | Yes: Claims | <u>2-8, 10-17</u> |
|                               | No: Claims  | <u>1, 9</u>       |
| Inventive step (IS)           | Yes: Claims |                   |
|                               | No: Claims  | <u>1-17</u>       |
| Industrial applicability (IA) | Yes: Claims | <u>1-17</u>       |
|                               | No: Claims  |                   |

2. Citations and explanations

see separate sheet

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**Box No. VII Certain defects in the international application**

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

see separate sheet

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**Box No. VIII Certain observations on the international application**

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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:

- D1 MCCORRY PATRICK ET AL: "Towards Bitcoin Payment Networks", 30 June 2016 (2016-06-30), NETWORK AND PARALLEL COMPUTING; [LECTURE NOTES IN COMPUTER SCIENCE; LECT.NOTES COMPUTER], SPRINGER INTERNATIONAL PUBLISHING, CHAM, PAGE(S) 57 - 76, XP047348067, ISSN: 0302-9743 ISBN: 978-3-642-04267-6 [retrieved on 2016-06-30]
- D2 White Paper: "Digital Assets on Public Blockchains", , 15 March 2016 (2016-03-15), XP055384342, Retrieved from the Internet: URL:[http://bitfury.com/content/5-white-papers-research/bitfury-digital\\_assets\\_on\\_public\\_blockchains-1.pdf](http://bitfury.com/content/5-white-papers-research/bitfury-digital_assets_on_public_blockchains-1.pdf)

2 The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1 and 9 is not new.

2.1 Document D1 discloses (reference to D1 is made in parenthesis):

A computer-implemented method for transferring an asset ("*payment*") between a first user and a second user ("*parties A and B*") via a blockchain ("*blockchain*") (sec 3.1), the method comprising: generating a first blockchain transaction ("*funding transaction*") comprising at least one first output, representing at least one first asset, redeemable by providing either:

- (i) unlocking data; or
- (ii) a cryptographic signature of the first user and a cryptographic signature of a second user ("*signatures of both parties*") (sec. 3.1),

wherein the at least one first asset is exchanged for at least one second asset represented by at least one second output of a second blockchain transaction ("*payment transaction*"), the at least one second output redeemable by providing either:

- (i) the unlocking data; or
- (ii) the cryptographic signature of the first user and the cryptographic

signature of the second user (*"signatures of both parties"*), wherein redemption of at least one second output by providing the first unlocking data makes the first unlocking data available to redeem at least one first output (*sec. 3.1*).

- 2.2 The same reasoning applies, *mutatis mutandis*, to the subject-matter of the corresponding independent claim 9, which therefore is also considered not new.
- 3 Dependent claims 2-8 and 10-17 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 and/or inventive step since their features (redemption first transaction by first output returned to first user, locktime, third transaction with unlocking script and in incomplete state, fourth transaction with further locktime, specification of unlocking data; the same applies also also for the second transaction) are either known from the prior art (documents D1 and D2; see in particular passages cited in the search report) or merely represent minor implementation details to the person skilled in the art.

### **Re Item VII**

#### **Certain defects in the international application**

- 4 The features of the claims are not provided with reference signs placed in parentheses to increase the intelligibility of the claims (Rule 6.2(b) PCT).
- 5 The most relevant prior art documents D1 and D2 are not identified in the description and the description is not adapted to the independent claims (Rule 5.1(a)(ii)(iii) PCT).

### **Re Item VIII**

#### **Certain observations on the international application**

- 6 The application does not meet the requirements of Article 6 PCT, because claims 1 and 9 are not clear. In particular, it is not clear from the wording of the claims whether the first transaction and the second transaction could be the same or are different from each other. The the later case, it is not clear from the wording of the claims how the two transaction differ from each other and how the difference is defined so as to achieve a technical effect.
- 7 Although claims 1 and 9 have been drafted as separate independent 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 and/or 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.