

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

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

To:

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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/IB2017/052061

International filing date (day/month/year)  
10.04.2017

Priority date (day/month/year)  
11.04.2016

International Patent Classification (IPC) or both national classification and IPC  
INV. G06Q20/06 G06F21/30 G06Q40/00

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>1-26</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-26</u>
Industrial applicability (IA)	Yes: Claims	<u>1-26</u>
	No: Claims	

2. Citations and explanations

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 US 2016/098723 A1 (FEENEY PATRICK JOSEPH [US]) 7 April 2016 (2016-04-07)

D2 Andreas M. Antonopoulos: "Mastering Bitcoin - Unlocking Digital Cryptocurrencies"  
In: "Mastering bitcoin : [unlocking digital cryptocurrencies]", 20 December 2014 (2014-12-20), O'Reilly Media, Beijing Cambridge Farnham Köln Sebastopol Tokyo, XP055306939, ISBN: 978-1-4493-7404-4

D3 Anonymous: "Colored Coins - Bitcoin Wiki",  
, 7 July 2015 (2015-07-07), XP055239396,  
Retrieved from the Internet:  
URL:[https://en.bitcoin.it/w/index.php?title=Colored\\_Coins&oldid=57259](https://en.bitcoin.it/w/index.php?title=Colored_Coins&oldid=57259)  
[retrieved on 2016-01-07]

2 Claim 1 does not meet the requirements of Article 6 PCT because its scope is broader than justified by the description and drawings. The claim defines the subject-matter using vague terms and omitting essential features necessary for achieving claimed concepts.

In particular, the claim does not define the meaning of an "authorised" token or an "authenticated" transaction, nor any technical means used in that regard. Furthermore, the claim does not define the issuer (or another authorised signatory) as a party of the claimed method, which does not allow to derive the context in which the claimed transaction takes place (see par. 121, 122, 139 and 140 of the description).

Neither the problem solved, nor the solution are derivable from this broad and ambiguous definition.

The same applies to independent claims 8, 17, 24, 25 and 26.

3 The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claims 1-26 does not involve an inventive step.

3.1 The subject matter of claim 1 comprises a mix of technical and non technical features.

In view of the broad definition provided in independent claim 1, the subject-matter defined therein may be interpreted as essentially an administrative procedure automated on a commonplace data processing system.

Underlying the claimed mixed-type invention is an administrative method for determining the validity of a token associated with a quantity of cryptocurrency. It should be noted that the claimed association of the token with a quantity of cryptocurrency does not imply any technical meaning and relates merely to a value associated with the token. Similarly the validation of the token may be interpreted entirely as a validation of a business transaction which does not involve any technical means. The claimed administrative method comprises the following steps:

-receiving a first transaction comprising a transfer of the token from a first user to a second user;

-querying a ledger to determine whether an authenticated transaction associated with the token can be identified, wherein the authenticated transaction comprises a previous transaction associated with the token and wherein the token has been authorised; and

-responsive to identifying an authenticated transaction, determining that the token is valid.

The effect of this method is to confirm that a third party has authorised an earlier transaction with regard to the token being transferred from the first user to a second user and therefore consider the token as valid. Again, such authorisation of the token may be interpreted entirely as a validation of a business transaction which does not involve any technical means. There is also no technical reason for considering the token as valid due to the fact that a third party has authorised an earlier transaction with regard to the token.

The claim specifies the method steps as abstract administrative procedures and does not define any features in that regard that may, in isolation or in the context of the invention as a whole, contribute to producing a technical effect serving a technical purpose. Consequently, the steps of the administrative method mentioned above are not considered as contributing to the technical character of an invention.

The only features that could be regarded as contributing to the technical character of the invention are the features relating to the computerised environment used for implementing the method, namely a data processing system comprising a communications network and maintaining peer-to-peer distributed ledger. Such system, which was well known at the priority date of the present application (see e.g D2, p. 35 and 219) is considered to represent the closest prior art to the subject-matter of claim 1.

The subject-matter of claim 1 differs from a well known data processing system in that the system is used to implement the steps of the administrative method mentioned above.

However, since the differentiating features relating to the administrative method for determining the validity of a token associated with a quantity of cryptocurrency do not produce a technical effect serving a technical purpose and do not contribute to the technical character of an invention, they can legitimately appear in the formulation of the objective technical problem which in this case is the automation of a method for determining the validity of a token associated with a quantity of cryptocurrency on a known data processing system. The skilled person (a computer programmer) receives the administrative method as a set of constraints that have to be met and would implement the software for the data processing system without inventive effort, using merely commonplace programming skills and computer knowledge.

Thus, the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

- 3.2 Furthermore, it should be noted that even if claim 1 were interpreted to involve the cryptographic processing defined in the description of the present application, the claim would still fail to meet the criteria of Article 33(3) PCT with regard to inventive step.

Document D1, discloses a crypto-currency transaction purchasing the output of a previous crypto-currency transaction and using a distributed transaction register including a block chain to verify the transaction history, based on hashing and digital signatures, as in the present application (see D1, par. 46, 53, 61, 72-74, 78-85, 88, 92 and 93).

In view of this disclosure, even an interpretation of claim 1 according to the cryptographic processing defined in the description of the present application would be considered as an obvious implementation of a transaction validation procedure between two users, which as already indicated, does not as such contribute to an inventive step.

- 3.3 The reasoning set out above with regard to claim 1 applies, *mutatis mutandis*, to independent claims 8, 17, 24, 25 and 26 which therefore are also considered not inventive (Article 33(3) PCT).
- 3.4 The additional features of dependent claims 2-7, 9-16 and 18-23 relate either to the obvious implementation of further non-technical, administrative constraints which as such do not offer a technical solution to a technical problem and are therefore irrelevant for the inventive step assessment; or to implementation details and straightforward possibilities which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill.

In particular, it should be noted that the signing of a redeem script referenced as an input to a transaction as a way to authenticate the transaction is well known from the prior art (see e.g. D2, p. 123-138).

Accordingly, none of these dependent claims involves an inventive step in the sense of Article 33(3) PCT.