PATENT COOPERATION TREATY

From the

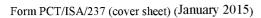
INTERNATIONAL SEARCHING AUTHORITY

To: JUDSON, David, H.			PCT		
c/o Akamai Technologies, Inc. 145 Broadway Cambridge, MA 02142 USA				RITTEN OPINION OF TH TIONAL SEARCHING AU	
				(PCT Rule 43bis.1)	
			Date of mailing (day/month/year)	03 April 2020 (03.04.202	20)
Applicant's or agent's file reference AKAM-360-PCT			FOR FURTHER ACTION See paragraph 2 below		
International application PCT/US2019		International filing date 27 November 2019		Priority date(day/month/y 27 November 2018 (27	
International Patent Cl	assification (IPC)	or both national classific	cation and IPC		
H04L 9/06(2006.01 G06Q 20/38(2012.0		006.01)i, H04L 9/32(2006.01)i, G06Q 20/	06(2012.01)i, G06Q 20/36	5(2012.01)i,
Applicant	<u></u>				
AKAMAI TECHN	OLOGIES, IN	C.			
Box No. I Box No. II Box No. III Box No. IV Box No. VI Box No. VI Box No. VI	Basis of the opin Priority Non-establishm Lack of unity Reasoned state citations and exterior docum Certain defect	nent of opinion with rega of invention ment under Rule 43bis. I aplanations supporting su	ard to novelty, inventiv (a)(i) with regard to no ich statement	e step and industrial applicab velty, inventive step and indu	
International Prelir other than this one opinions of this Int If this opinion is, a IPEA a written rep	ernational preliminary Examining to be the IPEA and ernational Searchist provided above, by together, where 220 or before the communications are supported to the communication of the support of the communication of the support of t	Authority ("IPEA") exceed the chosen IPEA has not not authority will not be considered to be a written appropriate, with amend expiration of 22 months for the contract of the	ept that this does not aportified the International so considered. In opinion of the IPEA, liments, before the expi	considered to be a written opingly where the applicant choold Bureau under Rule 66.1bis(the applicant is invited to substantion of 3 months from the dwhichever expires later.	by that written bmit to the
	Application Division	on	letion of this opinion	Authorized officer	January .
Korean Intel	lectual Property Off	ice		BYUN, Sung Cheal	

03 April 2020 (03.04.2020)

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2019/063598

Box	x No. I Basis of this 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 <i>bis</i> .1(b))
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 <i>ter</i> .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

Statement		
Novelty (N)	Claims 1-14	YES
	Claims NONE	NO
Inventive step (IS)	Claims 1-14	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims 1-14	YES
	Claims NONE	NO

2. Citations and explanations:

Reference is made to the following documents:

D1: EMANUEL FERREIRA JESUS et al., 'A Survey of How to Use Blockchain to Secure Internet of Things and the Stalker Attack', Hindawi, Security and Communication Networks, Vol. 2018, Article ID 9675050, 08 April 2018

D2: US 2017-0344580 A1 (MASTERCARD INTERNATIONAL INCORPORATED) 30 November 2017

D3: US 2017-0323392 A1 (LANCE KASPER et al.) 09 November 2017

D4: WO 2017-162904 A1 (NOKIA TECHNOLOGIES OY) 28 September 2017

D5: WENTING LI et al., 'Securing Proof-of-Stake Blockchain Protocols', In: Data Privacy Management, Cryptocurrencies and Blockchain Technology; ESORICS 2017 International Workships, DPM 2017 and CBT 2017, Oslo, Norway, September 14-15, 2017, pp. 297-315, September 2017

I. Novelty and Inventive Step (PCT Article 33(2) and 33(3))

1. Claims 1-13

The subject matter of claim 1 differs from these prior art documents in a method comprising mining individual segments of a block according to a confidence-based consensus algorithm using a transaction handling computing elements. And it is not obvious to a person skilled in the art by the documents, taken alone or in combination.

Claims 2-13 are dependent on claim 1.

Therefore, claims 1-13 meet the requirements of novelty and inventive step.

Continued on Supplemental Box

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of : Box No. V

2. Claim 14

The subject matter of claim 14 differs from these prior art documents in a method comprising mining individual segments of a data block according to a confidence-based consensus algorithm using a transaction handling computing elements when a quorum of the transaction handling computing elements sufficient to prevent a fork in the chain is not present. And it is not obvious to a person skilled in the art by the documents, taken alone or in combination.

Therefore, claim 14 meets the requirements of novelty and inventive step.

II. Industrial Applicability (PCT Article 33(4))

Claims 1-14 are industrially applicable.