

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>PCT2020424</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. <b>PCT/CN2020/074248</b>	International filing date ( <i>day/month/year</i> ) <b>03 February 2020</b>	(Earliest) Priority Date ( <i>day/month/year</i> )
Applicant <b>ALIPAY (HANGZHOU) INFORMATION TECHNOLOGY CO., LTD.</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out 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)).

b.  This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2.  **Certain claims were found unsearchable** (see Box No. II).

3.  **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 13

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b.  none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/074248

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> G06F 21/60(2013.01)i  According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) G06F, G06Q  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNPAT, CNKI, WPI, EPODOC: authentication, transfer, identify, proof, node, blockchain, guarantee, cyphertext, modify, ZKP		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2019251553 A1 (ALIBABA GROUP HOLDING LTD.) 15 August 2019 (2019-08-15) description, paragraphs [0020]-[0076]	1-13
A	CN 109558517 A (SUN YAT-SEN UNIVERSITY) 02 April 2019 (2019-04-02) the whole document	1-13
A	US 2009271618 A1 (INTERNATIONAL BUSINESS MACHINES CORPORATION) 29 October 2009 (2009-10-29) the whole document	1-13
A	CN 109614820 A (SHANDONG UNIVERSITY) 12 April 2019 (2019-04-12) the whole document	1-13
A	US 2019205898 A1 (CHRONICLED, INC.) 04 July 2019 (2019-07-04) the whole document	1-13
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p> <p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&amp;” document member of the same patent family</p>		
Date of the actual completion of the international search <b>22 October 2020</b>		Date of mailing of the international search report <b>17 November 2020</b>
Name and mailing address of the ISA/CN <b>National Intellectual Property Administration, PRC 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 China</b> Facsimile No. (86-10)62019451		Authorized officer  <b>ZHAO,Xiaomin</b>  Telephone No. 86-(10)-53961332

**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

**PCT/CN2020/074248**

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
US	2019251553	A1	15 August 2019	BR	112019008160	A2	10 September 2019
				KR	20200054131	A	19 May 2020
				EP	3542336	A2	25 September 2019
				PH	12019500890	A1	25 November 2019
				AU	2018347190	A1	21 May 2020
				MX	2019004658	A	12 August 2019
				JP	2020503718	A	30 January 2020
				WO	2019072268	A2	18 April 2019
				CN	110419055	A	05 November 2019
				CA	3041160	A1	18 April 2019
				RU	2729595	C1	11 August 2020
				ZA	201902549	A	18 December 2019
				SG	11201903586	A1	30 May 2019
				IN	201947016650	A	08 May 2020
VN	70118	A	25 May 2020				
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CN	109558517	A	02 April 2019	None			
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US	2009271618	A1	29 October 2009	WO	2008026086	A2	06 March 2008
				CN	101512535	A	19 August 2009
				JP	2010503252	A	28 January 2010
				EP	2080142	A2	22 July 2009
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CN	109614820	A	12 April 2019	WO	2020114240	A1	11 June 2020
				CN	110781521	A	11 February 2020
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US	2019205898	A1	04 July 2019	None			
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