

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT6276702

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| SUBMISSION TYPE: | NEW ASSIGNMENT | |
| NATURE OF CONVEYANCE: | ASSIGNMENT | |
| CONVEYING PARTY DATA | | |
| Name | | Execution Date |
| ALIBABA GROUP HOLDING LIMITED | | 08/24/2020 |
| RECEIVING PARTY DATA | | |
| Name: | ADVANTAGEOUS NEW TECHNOLOGIES CO., LTD. | |
| Street Address: | CAYMAN CORPORATE CENTRE | |
| Internal Address: | 27 HOSPITAL ROAD, GEORGE TOWN | |
| City: | GRAND CAYMAN | |
| State/Country: | CAYMAN ISLANDS | |
| Postal Code: | KY1-9008 | |
| PROPERTY NUMBERS Total: 96 | | |
| Property Type | Number | |
| Application Number: | 14704160 | |
| Application Number: | 13148280 | |
| Application Number: | 13944763 | |
| Application Number: | 15352306 | |
| Application Number: | 15084379 | |
| Application Number: | 15492473 | |
| Application Number: | 13886008 | |
| Application Number: | 15269624 | |
| Application Number: | 14108109 | |
| Application Number: | 15279963 | |
| Application Number: | 14484139 | |
| Application Number: | 14473729 | |
| Application Number: | 15842633 | |
| Application Number: | 15371482 | |
| Application Number: | 14553599 | |
| Application Number: | 15481088 | |
| Application Number: | 14527696 | |
| Application Number: | 15367267 | |
| Application Number: | 14529047 | |

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| Property Type | Number |
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| Application Number: | 15617989 |
| Application Number: | 14541928 |
| Application Number: | 15371523 |
| Application Number: | 16021932 |
| Application Number: | 14554692 |
| Application Number: | 14606618 |
| Application Number: | 14605803 |
| Application Number: | 14618882 |
| Application Number: | 14684081 |
| Application Number: | 15265710 |
| Application Number: | 14686115 |
| Application Number: | 14673578 |
| Application Number: | 14685351 |
| Application Number: | 15490324 |
| Application Number: | 15425359 |
| Application Number: | 14692536 |
| Application Number: | 15624179 |
| Application Number: | 14755110 |
| Application Number: | 14724018 |
| Application Number: | 14687811 |
| Application Number: | 14730115 |
| Application Number: | 14724632 |
| Application Number: | 14742433 |
| Application Number: | 14721484 |
| Application Number: | 15784012 |
| Application Number: | 14845144 |
| Application Number: | 14752557 |
| Application Number: | 15445843 |
| Application Number: | 14826055 |
| Application Number: | 14805293 |
| Application Number: | 15448504 |
| Application Number: | 14818132 |
| Application Number: | 14819289 |
| Application Number: | 15448534 |
| Application Number: | 15448463 |
| Application Number: | 14801224 |
| Application Number: | 14816948 |
| Application Number: | 14821385 |

| Property Type | Number |
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| Application Number: | 15465494 |
| Application Number: | 15448518 |
| Application Number: | 14945137 |
| Application Number: | 15601531 |
| Application Number: | 15491895 |
| Application Number: | 14853684 |
| Application Number: | 15481215 |
| Application Number: | 15623839 |
| Application Number: | 15465518 |
| Application Number: | 14994596 |
| Application Number: | 14860449 |
| Application Number: | 15636505 |
| Application Number: | 14871486 |
| Application Number: | 15469297 |
| Application Number: | 14932715 |
| Application Number: | 15586187 |
| Application Number: | 15637656 |
| Application Number: | 14976795 |
| Application Number: | 15009168 |
| Application Number: | 15599799 |
| Application Number: | 15637898 |
| Application Number: | 14989768 |
| Application Number: | 15526312 |
| Application Number: | 15016171 |
| Application Number: | 15615695 |
| Application Number: | 15018646 |
| Application Number: | 15018499 |
| Application Number: | 15166067 |
| Application Number: | 15587078 |
| Application Number: | 15615770 |
| Application Number: | 16184477 |
| Application Number: | 16241777 |
| Application Number: | 16412105 |
| Application Number: | 16416759 |
| Application Number: | 16446407 |
| Application Number: | 16556120 |
| Application Number: | 16601160 |
| Application Number: | 16707749 |

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| Property Type | Number |
| Application Number: | 16741531 |

CORRESPONDENCE DATA

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| | |
|--------------------------------|----------------|
| ATTORNEY DOCKET NUMBER: | A225-0001MI |
| NAME OF SUBMITTER: | JESSICA WEST |
| SIGNATURE: | /Jessica West/ |
| DATE SIGNED: | 08/31/2020 |

Total Attachments: 4

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Patent Assignment

This Patent Assignment (this "Assignment") with an effective date of August 24, 2020 (the "Effective Date") by Alibaba Group Holding Limited, a company duly authorized under the laws of Cayman Islands and having an address at Fourth Floor, One Capital Place, P.O. Box 847, George Town, Grand Cayman, Cayman Islands (hereinafter the "Assignor") witnesseth:

WHEREAS, Assignor is the owner of certain rights, title and interest in and to the patents and patent applications set forth on Schedule A hereto (hereinafter the "Patents and Applications"):

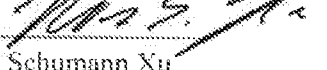
WHEREAS, Advantageous New Technologies Co., Ltd., a company duly organized under and pursuant to the laws of Cayman Islands and having an address at Cayman Corporate Centre, 27 Hospital Road, George Town, Grand Cayman KY1-9008, Cayman Islands (hereinafter the "Assignee"), is desirous of acquiring Assignor's entire right, title and interest in and to said Patents and Applications, and in and to any Letters Patent or Patents to be obtained therefor and thereon;

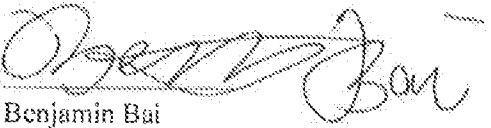
NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Assignor has as of the Effective Date sold, assigned, transferred and conveyed, and does hereby sell, assign, transfer and convey, unto Assignee, all of Assignor's rights, titles and interests in and to the Patents and Applications, and any and all Letters Patent or Patents in the United States of America and all foreign countries which may be granted therefor and thereon, for its own use and behalf and the use and behalf of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted, as fully and entirely as the same would have been held and enjoyed by the Assignor, had this sale and assignment not been made. Assignor does hereby sell, assign, transfer, and convey to Assignee, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to Assignee, or may accrue hereafter including, but not limited to, the right to sue for, collect, and retain damages for past, present and future infringement of the said Patents and Applications before or after issuance.

IN TESTIMONY WHEREOF, this Assignment is signed by the following duly authorized signatories of the Assignor and Assignee respectively, on this 26th day of August, 2020.

Assignor
Alibaba Group Holding Limited

Assignee
Advantageous New Technologies Co., Ltd.

Signature: 
Name: Min Schumann Xu
Title: Chief Patent & Technology Counsel

Signature: 
Name: J Benjamin Bai
Title: Director

Schedule A to Patent Assignment

| Internal Docket | Country/Region | App'n No. | App'n Date | Patent Title |
|-----------------|----------------|------------|------------|--|
| PCT0510US C1 | US | 14704160 | 2015/5/5 | METHOD AND SYSTEM FOR E-COMMERCE TRANSACTION DATA ACCOUNTING |
| PCT0510US | US | 13/148280 | 2011/8/5 | Method and System for E-Commerce Transaction Data Accounting |
| A1345US | US | 13/944763 | 2013/7/17 | METHOD, CLIENT, SERVER AND SYSTEM OF LOGIN VERIFICATION |
| A1345USC1 | US | 15352306 | 2016/11/15 | METHOD, CLIENT, SERVER AND SYSTEM OF LOGIN VERIFICATION |
| A1397USC1 | US | 15084379 | 2016/3/29 | Method and Apparatus of Identifying User Risk |
| A1563USC1 | US | 15492473 | 2017/4/20 | NEAR FIELD INFORMATION TRANSMISSION |
| A1563US | US | 13/886008 | 2013/5/2 | NEAR FIELD INFORMATION TRANSMISSION |
| A1580USC1 | US | 15269624 | 2016/9/19 | DATA PROCESSING METHOD AND SYSTEM |
| A1765US | US | 14/108109 | 2013/12/16 | METHOD AND APPARATUS FOR INFORMATION VERIFICATION |
| A1765USC1 | US | 15279963 | 2016/9/29 | METHOD AND APPARATUS FOR INFORMATION VERIFICATION |
| A1999US | US | 14484139 | 2014/9/11 | METHOD AND APPARATUS OF DOWNLOADING AND INSTALLING A CLIENT |
| A2018US | US | 14/473729 | 2014/8/29 | Data Processing Based on Two-Dimensional Code |
| A2018USC2 | US | 15842633 | 2017/12/14 | Data Processing Based on Two-Dimensional Code |
| A2018USC1 | US | 15371482 | 2016/12/7 | Data Processing Based on Two-Dimensional Code |
| A2080US | US | 14553599 | 2014/11/25 | DATA PROCESSING METHOD AND SYSTEM |
| A2080USC1 | US | 15481088 | 2017/4/6 | DATA PROCESSING METHOD AND SYSTEM |
| A2108US | US | 14527696 | 2014/10/29 | AUTHENTICATION FOR APPLICATION |
| A2108USC1 | US | 15367267 | 2016/12/2 | AUTHENTICATION FOR APPLICATION |
| A2113US | US | 14529047 | 2014/10/30 | METHOD AND APPARATUS FOR DATA EXCHANGE |
| A2113USC1 | US | 15617989 | 2017/6/8 | METHOD AND APPARATUS FOR DATA EXCHANGE BASED ON USER STATUS |
| A2115US | US | 14541928 | 2014/11/14 | IDENTITY AUTHENTICATION BY USING HUMAN BIOLOGICAL CHARACTERISTIC |
| A2115USC1 | US | 15371523 | 2016/12/7 | IDENTITY AUTHENTICATION BY USING HUMAN BIOLOGICAL CHARACTERISTIC |
| A2153USC1 | US | 16/021,932 | 2018/6/28 | CONTROL OF STORAGE OF DATA IN A HYBRID STORAGE SYSTEM |
| A2153US | US | 14554692 | 2014/11/26 | HYBRID STORAGE |
| A2184US | US | 14606618 | 2015/1/27 | CLIENT AUTHENTICATION USING SOCIAL RELATIONSHIP DATA |
| A2200US | US | 14605803 | 2015/1/26 | OBTAINING SOCIAL RELATIONSHIP TYPE OF NETWORK SUBJECTS |
| A2246US | US | 14618882 | 2015/2/10 | GENERATING BARCODE AND AUTHENTICATING BASED ON BARCODE |
| A2294US | US | 14684081 | 2015/4/10 | METHOD AND APPARATUS OF VERIFYING USABILITY OF BIOLOGICAL CHARACTERISTIC IMAGE |
| A2294USC1 | US | 15265710 | 2016/9/14 | METHOD AND APPARATUS OF VERIFYING USABILITY OF BIOLOGICAL CHARACTERISTIC IMAGE |
| A2307US | US | 14686115 | 2015/4/14 | PORTAL AUTHENTICATION |
| A2309US | US | 14673578 | 2015/3/30 | Transmission of Beacon Message |
| A2315US | US | 14685351 | 2015/4/13 | Service Authorization using Auxiliary Device |
| A2315USC1 | US | 15490324 | 2017/4/18 | Service Authorization Using Auxiliary Device |
| A2328USC1 | US | 15425359 | 2017/2/6 | DATA TRANSMISSION |
| A2328US | US | 14692536 | 2015/4/21 | DATA TRANSMISSION |
| A2386USC1 | US | 15624179 | 2017/6/15 | PROMPTING LOGIN ACCOUNT |

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|-----------|----|----------|------------|--|
| A2386US | US | 14755110 | 2015/6/30 | PROMPTING LOGIN ACCOUNT |
| A2388US | US | 14724018 | 2015/5/28 | DATA UNIQUENESS CONTROL AND INFORMATION STORAGE |
| A2389US | US | 14687811 | 2015/4/15 | METHOD AND APPARATUS OF DETECTING WEAK PASSWORD |
| A2504US | US | 14730115 | 2015/6/3 | PASSWORD INPUT INTERFACE |
| A2515US | US | 14724632 | 2015/5/28 | DATA COMMUNICATION |
| A2568US | US | 14742433 | 2015/6/17 | DATA QUERY METHOD AND APPARATUS |
| A2600US | US | 14721484 | 2015/5/26 | PROCESSING AND VERIFYING DIGITAL CERTIFICATE |
| A2658USC1 | US | 15784012 | 2017/10/13 | ENCRYPTING AND DECRYPTING INFORMATION |
| A2658US | US | 14845144 | 2015/9/3 | ENCRYPTING AND DECRYPTING INFORMATION |
| A2664US | US | 14752557 | 2015/6/26 | Method and System for Data Processing |
| PCT1690US | US | 15445843 | 2017/2/28 | Method and device for authentication via user behavior in mobile scenarios |
| A2725US | US | 14826055 | 2015/8/13 | FORM FILLING METHOD AND RELATED TERMINAL |
| A2736US | US | 14805293 | 2015/7/21 | METHOD AND APPARATUS OF CONTROLLING NETWORK PAYMENT |
| PCT2770US | US | 15448504 | 2017/3/2 | SENSITIVE INFORMATION PROCESSING METHOD, DEVICE AND SERVER, AND SECURITY DETERMINATION SYSTEM |
| A2785US | US | 14818132 | 2015/8/4 | INFORMATION OPERATION |
| A2821US | US | 14819289 | 2015/8/5 | Method and Apparatus of Identifying a Transaction Risk |
| PCT2873US | US | 15448534 | 2017/3/2 | IDENTITY AUTHENTICATION METHOD AND APPARATUS, TERMINAL AND SERVER |
| PCT2879US | US | 15448463 | 2017/3/2 | METHOD, DEVICE AND SYSTEM FOR INVOKING LOCAL SERVICE ASSEMBLY BY BROWSER |
| A2883US | US | 14801224 | 2015/7/16 | Method and Server of Remote Information Query |
| A2946US | US | 14816948 | 2015/8/3 | ACCOUNT PROCESSING METHOD AND APPARATUS |
| A2955US | US | 14821385 | 2015/8/7 | METHOD AND SYSTEM FOR DATA STORAGE UPON DATABASE FAILURE |
| PCT2974US | US | 15465494 | 2017/3/21 | PASSWORD PROTECTION QUESTION SETTING METHOD AND DEVICE |
| PCT2980US | US | 15448518 | 2017/3/2 | METHOD AND APPARATUS FOR UNLOCKING USER INTERFACE |
| A3016US | US | 14945137 | 2015/11/18 | SERVICE ADDRESSING IN DISTRIBUTED ENVIRONMENT |
| PCT3058US | US | 15601531 | 2017/5/22 | ENCRYPTING/DECRYPTING DATA ON MOBILE TERMINAL |
| PCT3075US | US | 15491895 | 2017/4/19 | METHOD AND DEVICE FOR DETERMINING A CATEGORY DIRECTORY, AND AN AUTOMATIC CLASSIFICATION METHOD AND DEVICE |
| A3116US | US | 14853684 | 2015/9/14 | DATA PROCESSING METHOD AND APPARATUS IN SERVICE-ORIENTED ARCHITECTURE SYSTEM, AND THE SERVICE-ORIENTED ARCHITECTURE SYSTEM |
| PCT3165US | US | 15481215 | 2017/4/8 | PROCESSING SCREEN SENSITIVE INFORMATION |
| PCT3168US | US | 15623839 | 2017/6/15 | DATA COMMUNICATION METHOD AND APPARATUS |
| PCT3169US | US | 15465518 | 2017/3/21 | METHOD AND DEVICE FOR INFORMATION INTERACTION AND ASSOCIATION BETWEEN HUMAN BIOLOGICAL FEATURE DATA AND ACCOUNT |
| A3172US | US | 14994596 | 2016/1/13 | DATA BACKUP METHOD AND APPARATUS |
| A3174US | US | 14860449 | 2015/9/21 | METHOD AND APPARATUS OF PROCESSING A DOI (DIGITAL OBJECT UNIQUE IDENTIFIER) IN INTERACTION INFORMATION |
| PCT3200US | US | 15636505 | 2017/6/28 | METHOD AND DEVICE FOR IDENTIFYING USER IDENTITY |
| A3224US | US | 14871486 | 2015/9/30 | NAVIGATING APPLICATION INTERFACE |
| PCT3269US | US | 15469297 | 2017/3/24 | DATA SYNCHRONIZATION METHOD AND APPARATUS |
| A3336US | US | 14932715 | 2015/11/4 | GENERATING NETWORK RESOURCE |

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|--------------|----|------------|------------|--|
| PCT3347US | US | 15586187 | 2017/5/3 | METHOD FOR INVOKING LOCAL KEYBOARD ON HTML PAGE IN USER TERMINAL DEVICE AND APPARATUS THEREOF |
| PCT3398US | US | 15637656 | 2017/6/29 | TRANSACTION RISK DETECTION METHOD AND APPARATUS |
| A3574US | US | 14976795 | 2015/12/21 | Transaction Information Processing Method and Apparatus |
| A3576US | US | 15009168 | 2016/1/28 | Service Request Authentication Method and Apparatus |
| PCT3619US | US | 15599799 | 2017/5/19 | IDENTITY INFORMATION VERIFICATION |
| PCT3645US | US | 15637898 | 2017/6/29 | REQUEST SENDING METHOD AND DEVICE THEREOF |
| A3658US | US | 14989768 | 2016/1/6 | Method and Apparatus for Processing Transactions |
| A3770US | US | 15/526,312 | 2017/5/11 | PROCESSING DATA SERVICE |
| A3856US | US | 15016171 | 2016/2/4 | PROTECTING SENSITIVE DATA SECURITY |
| PCT3960US | US | 15615695 | 2017/6/6 | METHODS AND APPARATUSES FOR STORING FILE PATH AND ACCESSING LOCAL FILE |
| A4592US | US | 15018646 | 2016/2/8 | SERVICE IMPLEMENTATION METHOD, PAYMENT METHOD AND APPARATUS |
| A4593US | US | 15018499 | 2016/2/8 | SERVICE IMPLEMENTATION |
| A4658US | US | 15168667 | 2016/5/26 | METHOD AND APPARATUS FOR REAL-TIME DATA MIGRATION |
| A8117US | US | 15587078 | 2017/5/4 | METHOD AND APPARATUS FOR USING CUSTOM COMPONENT PARSING ENGINE TO PARSE TAG OF CUSTOM COMPONENT |
| A9238US | US | 15615770 | 2017/6/6 | PAYMENT INFORMATION PROCESSING METHOD, APPARATUS, AND USER DEVICE |
| A1563USC2 | US | 16/184,477 | 2018/11/8 | NEAR FIELD INFORMATION TRANSMISSION |
| PCT2690US C1 | US | 16/241,777 | 2019/1/7 | Method and device for authentication via user behavior in mobile scenarios |
| A3172USC1 | US | 16412105 | 2019/5/14 | DATA BACKUP METHOD AND APPARATUS |
| A3116USC1 | US | 16/416,759 | 2019/5/20 | DATA PROCESSING METHOD AND APPARATUS IN SERVICE-ORIENTED ARCHITECTURE SYSTEM, AND THE SERVICE-ORIENTED ARCHITECTURE SYSTEM |
| PCT3169US C1 | US | 16/446,407 | 2019/6/19 | METHOD AND DEVICE FOR INFORMATION INTERACTION AND ASSOCIATION BETWEEN HUMAN BIOLOGICAL FEATURE DATA AND ACCOUNT |
| A2821USC1 | US | 16/556,120 | 2019/8/29 | Method and Apparatus of Identifying a Transaction Risk |
| A2015USC1 | US | 16601160 | 2019/10/14 | FORM INPUT PROCESSING |
| A4592USC1 | US | 16/707,749 | 2019/12/9 | FREE-FOR-ALL GAME SESSION METHODS, SYSTEMS, AND APPARATUSES |
| A2785USC1 | US | 16/741,531 | 2020/1/13 | INFORMATION OPERATION |