

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT6813932

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	ALIBABA GROUP HOLDING LIMITED	08/26/2020
<b>RECEIVING PARTY DATA</b>		
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<b>State/Country:</b>	CAYMAN ISLANDS	
<b>Postal Code:</b>	KY1-9008	
<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	17354782
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<b>ATTORNEY DOCKET NUMBER:</b>	A225-0358USC2	
<b>NAME OF SUBMITTER:</b>	ALEXIS COLLINS	
<b>SIGNATURE:</b>	/Alexis Collins/	
<b>DATE SIGNED:</b>	07/14/2021	
<b>Total Attachments: 4</b>		
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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");

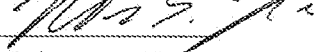
WHEREAS, Advantageous New Technologies Co., Ltd., a company duly organized under and pursuant to the laws of Cayman Islands and having an address at Cayman Corporate Centre, 27 Hospital Road, George Town, Grand Cayman KY1-9008, Cayman Islands (hereinafter the "Assignee"), is desirous of acquiring Assignor's 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;

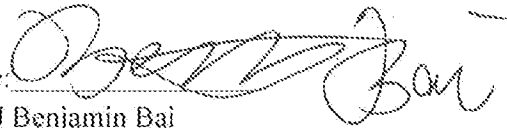
NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Assignor has as of the Effective Date sold, assigned, transferred and conveyed, and does hereby sell, assign, transfer and convey, unto Assignee, all of Assignor's rights, titles and interests 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 Bucket	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

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
PCT2690US	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
PCT2875US	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	2017/4/6	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

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	15166067	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