PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT7458843

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	ASSIGNMENT		

CONVEYING PARTY DATA

Name	Execution Date
EYEVERIFY INC.	07/18/2022

RECEIVING PARTY DATA

Name: JUMIO CORPORATION	
Street Address: 395 PAGE MILL ROAD, SUITE 150	
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 68

Property Type	Number
Application Number:	14454148
Application Number:	14639531
Application Number:	15222363
PCT Number:	US2014055826
Application Number:	14597329
Application Number:	61878588
Application Number:	61902911
Application Number:	14274385
Application Number:	14933539
Application Number:	15259902
Application Number:	15906331
Application Number:	16781269
Application Number:	16781554
Application Number:	14274398
PCT Number:	US2014055869
Application Number:	14480802
Application Number:	15137350
PCT Number:	US2015049195
Application Number:	14631819
Application Number:	61944438

PATENT REEL: 061004 FRAME: 0708

507411915

Property Type	Number
PCT Number:	US2015017604
Application Number:	14672629
Application Number:	16393071
Application Number:	61976219
PCT Number:	US2015023344
Application Number:	15169107
Application Number:	15498797
Application Number:	62180481
PCT Number:	US2016035007
Application Number:	15261208
Application Number:	15261217
Application Number:	15261224
Application Number:	15636025
PCT Number:	US2016050999
Application Number:	15728919
Application Number:	62217660
Application Number:	15277112
Application Number:	62233727
PCT Number:	US2016053903
Application Number:	15446564
Application Number:	16138233
PCT Number:	US2017020166
Application Number:	62302526
Application Number:	15806943
Application Number:	62420392
PCT Number:	US2017060572
Application Number:	16665944
Application Number:	16797903
Application Number:	16534773
Application Number:	17244657
Application Number:	17230397
Application Number:	17138779
Application Number:	17391773
Application Number:	17225797
Application Number:	17479882
Application Number:	17224923
Application Number:	17339412
Application Number:	17339448

Property Type	Number
Application Number:	17478417
Application Number:	17463199
Application Number:	17471712
Application Number:	17484851
Application Number:	17339511
Application Number:	62582743
PCT Number:	US2018059171
Application Number:	63297636
Application Number:	17704958
Application Number:	17704927

CORRESPONDENCE DATA

Fax Number: (801)355-0160

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Correspondent Name: GREG T. SUEOKA

Address Line 1: 310 E. 4500 S., STE. 400

Address Line 4: SALT LAKE CITY, UTAH 84107

ATTORNEY DOCKET NUMBER:	10759-01000 US
NAME OF SUBMITTER:	GREG T. SUEOKA
SIGNATURE:	/Greg T. Sueoka/
DATE SIGNED:	07/29/2022

Total Attachments: 17

source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page1.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page2.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page3.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page4.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page5.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page6.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page7.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page8.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page9.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page10.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page11.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page12.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page13.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page14.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page15.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page16.tif source=01000 US 2022-07-29 - Assignment - EyeVerify Inc to Jumio Corporation#page17.tif

ASSIGNMENT

Whereas, **EYEVERIFY INC.**, a corporation organized under the laws of the State of Delaware, having a place of business at 1740 Main Street, Suite 100, Kansas City, MO 64108 ("ASSIGNOR"), is the owner of the entire right, title and interest in, to and under the patents and/or patent applications listed in the attached Schedule I ("SI PATENTS AND PATENT APPLICATIONS"),

Whereas, **JUMIO CORPORATION**, a corporation organized under the laws of the State of Delaware, having a place of business at 395 Page Mill Road, Suite 150, Palo Alto, California 94306 ("ASSIGNEE"), desires to obtain the entire right, title, and interest in, to and under the SI PATENTS AND PATENT APPLICATIONS, and

Whereas, ASSIGNOR and ASSIGNEE, and certain of ASSIGNOR'S affiliates, are parties to an Asset Purchase Agreement (the "PURCHASE AGREEMENT") pursuant to which, among other things, ASSIGNOR has agreed to enter into this Assignment and effectuate the transactions contemplated hereby. Capitalized terms used but not defined herein shall have the meanings for such terms that are set forth in the Purchase Agreement.

NOW, THEREFORE, in consideration of the good and valuable consideration received by ASSIGNOR from ASSIGNEE, the receipt and sufficiency of which is hereby acknowledged, ASSIGNOR, for itself and its successors, hereby sells, assigns, transfers, and conveys to ASSIGNEE, its successors, legal representatives and assigns the entire worldwide right, title, and interest in, to and under the SI PATENTS AND PATENT APPLICATIONS, and all rights of enforcement thereto, including all rights to sue or recover for the past infringement thereof, and further including the right to file and prosecute in ASSIGNEE's own name patent applications, including corresponding applications, based on any of the SI PATENTS AND PATENT APPLICATIONS, and to claim priority to any of the SI PATENTS AND PATENT APPLICATIONS pursuant to the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes. ASSIGNEE may apply for and receive patents in its own name wherever so permitted by law.

For two (2) years from the Effective Time, the ASSIGNOR shall, when requested by ASSIGNEE, execute or cause to be executed any and all separate assignments or title documents necessary and proper to transfer title in and to any of the SI PATENTS AND PATENT APPLICATIONS, and any continuing, divisional, renewal, reissue, reexamination or other corresponding application thereof to the ASSIGNEE.

ASSIGNOR retains no ownership rights in the patent applications, the patents, the inventions, and the rights transferred to ASSIGNEE hereunder.

[Signature pages to follow]

1

IN WITNESS THEREOF, ASSIGNOR has caused this Assignment to be executed by its duly authorized representative to be effective as of the Effective Time.

	EYEVERIFY INC.
	By:
	Name: Paige Bailey
	Title: General Manager
	Date: July 18, 2022
State of MISSON	ar \$
County of J	
person whose name is subscence to the same in his/her the person, or the entity upon I certify under PEN/	, 2022, before me personally appeared who proved to me on the basis of satisfactory evidence to be the cribed to the within instrument and acknowledged to me that he/she authorized capacity, and that by his/her signature on the instrument on behalf of which the person acted, executed the instrument. ALTY OF PERJURY under the laws of the State of that the foregoing is true and correct.
WITNESS may hand	d and official seal.
(Seal)	Notary Public
NORA JACKSON Notary Public-Notary Se STATE OF MISSOURI Platte County My Commission Expires 10/1 Commission # 1340139	9/2025

REEL: 061004 FRAME: 0712

ASSIGNEE hereby accepts receipt of the entire right, title and interest in and to the SI PATENTS AND PATENT APPLICATIONS.

	JUMIO CORPORATION
	By: Told E. Ty
	Name: Robert Prigge
	Title: Chief Executive Officer
	Date: 7/15/2022
State of	
County of	
On the day of	. 2022, before me personally appeared
executed the same in his/h	, 2022, before me personally appeared, who proved to me on the basis of satisfactory evidence to be the scribed to the within instrument and acknowledged to me that he/she er authorized capacity, and that by his/her signature on the instrument on behalf of which the person acted, executed the instrument.
I certify under PEN	IALTY OF PERJURY under the laws of the State of that the foregoing is true and correct.
WITNESS may ha	nd and official seal.
	Α
(Seal)	SEE ATTACHED
	Notary Public

(Signature Page to Assignment - EyeVerify Inc.)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California County of Santa Capa
On Jum 14, 7.22 before me, Cathy M. Wong, Notary Public (insert name and title of the officer) personally appeared RDREOT PRIGE
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official scal. CATHY M. WONG COMM. #2403771 Notary Public - California Santa Clara County My Comm. Expires June 4, 2026
Signature (Seal)
Optional information. This certificate is attached to:
Title or type of document: ASSIGNINGTH
Number of pages: \\
Date of document: JNW 15, 2002
Signer(s) other than named above: PAIGE BAINEY
Notary phone number: 650-290-3550 or 408-355-3700

SCHEDULE I

SI PATENTS AND PATENT APPLICATIONS

No.	Docket No.	Ctry/Re gion	Application No.	Filing Date	Patent No.	Issue Date	Title
1	A28103US	US	14/454,148	8/7/14	8,965,066	02/24/15	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
2	PCT28103B R	BR	BR11201600 5604-3	9/16/14			BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
3	A28103US C1	US	14/639,531	3/5/15	9,495,588	11/15/16	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
4	A28103US C2	US	15/222,363	7/28/16	10,210,388	02/19/19	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
5	PCT28103C N	CN	20148000328 4.8	9/16/14	ZL 201480003284	3/19/19	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
6	PCT28103C ND1	CN	20191012989 6.6	9/16/14	ZL 201910129896.6	9/18/20	METHODS AND SYSTEMS FOR BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
7	PCT28103C ND2	CN	20191013031 2.7	9/16/14	ZL 201910130312.7	8/11/20	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
8	PCT28103E P	EP	14777991.2	9/16/14			BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
9	A28103HK	HK	16101453.0	9/16/14	HK1213670B	4/17/20	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
10	A28103HK D1	НК	42020001099. 9	9/16/14	HK40011440	3/5/21	METHODS AND SYSTEMS FOR BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
11	A28103HK D2	HK	42019000796. 3	9/16/14	40010987	3/5/21	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
12	PCT28103I D	ID	P0020160250 0	9/16/14	IDP000063918	10/23/19	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
13	PCT28103I N	IN	20161701193	9/16/14			BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
14	PCT28103J P	JP	2016-542869	9/16/14	6353910	6/15/18	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
15	PCT28103J PD1	JP	2018-52486	9/16/14	6651565	1/24/20	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
16	PCT28103J PD2	JP	2020-8027	1/22/20	6774580	10/6/20	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
17	PCT28103 KR	KR	10-2016- 7009855	9/16/14	10-1853218	4/23/18	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
18	PCT28103 KRD1	KR	10-2018- 7011363	9/16/14	10-1967124	4/2/19	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
19	PCT28103 MY	MY	PI201600047 5	9/16/14	MY-176966-A	8/28/20	BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
20	EYV- 005WO	WO	PCT/US2014/ 055826 ²	9/16/14			BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION
21	EYV- 005USC1	US	14/597,329 ³	1/15/15			BIOMETRIC TEMPLATE SECURITY AND KEY GENERATION

¹ Ctry/Region. - World Intellectual Property Organization country, region, or organization code abbreviation.

² Nationalized

³ Abandoned

No.	Docket No.	Ctry/Re gion!	Application No.	Filing Date	Patent No.	Issue Date	Title
22	EYV- 005PR	US	61/878,588 ⁴	9/16/13			IMAGE DETECTION, AUTHENTICATION, AND INFORMATION HIDING
23	EYV- 005PR2	US	61/902,911 ⁴	11/12/13			DETECTION, AUTHENTICATION, AND INFORMATION HIDING
24	A28104US A	US	14/274,385	5/9/14	9,390,327	07/12/16	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
25	A28104US AD1C1	US	14/933,539	11/5/15	9,454,700	09/27/16	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
26	A28104US AD1	US	15/259,902	9/8/16	9,940,517	04/10/18	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
27	A28104US AD1	US	15/906,331	2/27/18	10,664,700	05/26/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
28	A28104US AD1C2D1	US	16/781,269	2/4/20	10,726,260	07/28/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
29	A28104US AD1C2D2	US	16/781,554	2/4/20	10,789,465	09/29/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
30	A28104US AD1C2D2	US	14/274,398	5/9/14	9,053,365	06/09/15	TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
31	A28104US B	BR	BR11201600 5674-4	9/16/14			FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
32	PCT28104B R	BR	BR12201701 9640-5	9/16/14			FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
33	PCT28104B RD1	BR	BR12201701 9647-2	9/16/14			FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
34	PCT28104B RD2	CN	20148005794 3.6	9/16/14	ZL 201480057943.6	9/21/18	FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
35	PCT28104C N	CN	20181095646 8.6	9/16/14	ZL 201810956468.6	5/5/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
36	PCT28104C ND1	CN	20181095660 1.8	9/16/14	ZL 201810956601.8	2/14/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
37	PCT28104C ND2	CN	20181095645 4.4	9/16/14	109165593	3/10/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC AUTHENTICATION
38	PCT28104C ND4	CN	20181095471 8.2	9/16/14	ZL 201810954718.2	8/31/21	FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
39	PCT28104E P	EP	14777995.3	9/16/14			FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
40	A28104HK	НК	17101728.8	9/16/14	HK1228073	8/16/19	FEATURE EXTRACTION AND MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION

⁴ Expired

No.	Docket No.			Filing	Patent No.	Issue Date	Title
		gion	No.	Date			
41	A28104HK	HK	19125244.4	9/16/14	40002001	1/22/21	FEATURE EXTRACTION AND
	D1						MATCHING AND TEMPLATE UPDATE
12	1 20 10 41117	****	10100101.0	0/1///	111/1257020	12/10/20	FOR BIOMETRIC AUTHENTICATION
42	A28104HK	HK	19100181.8	9/16/14	HK1257828	12/18/20	FEATURE EXTRACTION AND
	D2						MATCHING AND TEMPLATE UPDATE FOR BIOMETRIC AUTHENTICATION
43	A28104HK	HK	19120413.0	9/16/14	1260574	12/24/20	FEATURE EXTRACTION AND
43	D3	пк	19120415.0	9/10/14	1200374	12/24/20	MATCHING AND TEMPLATE UPDATE
	טט						FOR BIOMETRIC AUTHENTICATION
44	A28104HK	HK	19126575.0	9/16/14			FEATURE EXTRACTION AND
***	D4	111X	19120373.0	7/10/14			MATCHING AND TEMPLATE UPDATE
	D4						FOR BIOMETRIC AUTHENTICATION
45	PCT28104I	ID	P0020160249	9/16/14	IDP000065458	12/13/19	FEATURE EXTRACTION AND
73	D	110	9	7/10/14	1121 000003430	12/13/17	MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
46	PCT28104I	IN	20161701192	9/16/14			FEATURE EXTRACTION AND
	N		9	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			MATCHING AND TEMPLATE UPDATE
	• •						FOR BIOMETRIC AUTHENTICATION
47	PCT28104J	JP	2016-527215	9/16/14	6039863	12/7/16	FEATURE EXTRACTION AND
	P						MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
48	PCT28104J	JP	2016-216349	9/16/14	6255463	12/8/17	FEATURE EXTRACTION AND
	PD1						MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
49	PCT28104J	JP	2017-232710	9/16/14	6599421	10/11/19	FEATURE EXTRACTION AND
	PD2						MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
50	PCT28104	KR	10-2016-	9/16/14	10-1808467	12/6/17	FEATURE EXTRACTION AND
	KR		7009581				MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
51	PCT28104	KR	10-2017-	9/16/14	10-2113911	5/15/20	FEATURE EXTRACTION AND
	KRD1		7035054				MATCHING AND TEMPLATE UPDATE
							FOR BIOMETRIC AUTHENTICATION
52	A28104MO	MO	J/4180	9/16/14	J/004180	6/29/20	FEATURE EXTRACTION AND
	D1						MATCHING AND TEMPLATE UPDATE
<u> </u>	1.2010.1210	1.00	744000	2/2//2020	7/00/1000	5/20/20	FOR BIOMETRIC AUTHENTICATION
53	A28104MO	MO	J/4080	3/24/2020	J/004080	5/28/20	FEATURE EXTRACTION AND
	D2						MATCHING FOR BIOMETRIC
<i>E</i> 1	A 2010 4N 4O	MO	T/4120	0/1//14	1/00/11/20	(111/20	AUTHENTICATION
54	A28104MO	МО	J/4128	9/16/14	J/004128	6/11/20	FEATURE EXTRACTION AND MATCHING FOR BIOMETRIC
	D3						AUTHENTICATION
55	PCT28104	MY	PI201600047	9/16/14	MY-176883-A	8/25/20	FEATURE EXTRACTION AND
33	MY	IVI 1	4	9/10/14	W11-170003-A	8/23/20	MATCHING AND TEMPLATE UPDATE
	IVI I		4				FOR BIOMETRIC AUTHENTICATION
56	EYV-	WO	PCT/US2014/	9/16/14			FEATURE EXTRACTION AND
50	006WO	,,,	055869 ²	7/10/14			MATCHING AND TEMPLATE UPDATE
	000110		055869				FOR BIOMETRIC AUTHENTICATION
57	A28105US	US	14/480,802	9/9/14	9,396,537	07/19/16	SYSTEMS AND METHODS FOR
	112010303		17,100,002	7,7117	7,570,551	0//1//10	LIVENESS ANALYSIS
58	A28105AU	AU	2018247216	9/9/15	2018247216	2/27/20	SYSTEMS AND METHODS FOR
"	D1	AU	201024/210	717113	201024/210	421120	LIVENESS ANALYSIS
59	PCT28105B	BR	BR11201700	9/9/15	BR11201700442	1/19/21	SYSTEMS AND METHODS FOR
39	R R	DK	4427-7	7/7/13	7-7	1/19/21	LIVENESS ANALYSIS
60		TIC		1/05/16		02/10/10	
60	A28105US	US	15/137,350	4/25/16	10,237,459	03/19/19	SYSTEMS AND METHODS FOR
	C1	<u> </u>	2040207	0.0011.5	30 <030 =	F (1) (1) 0	LIVENESS ANALYSIS
61	PCT28105C	CA	2960397	9/9/15	2960397	5/1/18	SYSTEMS AND METHODS FOR
	A						LIVENESS ANALYSIS

No.	Docket No.	Ctry/Re gion!	Application No.	Filing Date	Patent No.	Issue Date	Title
62	PCT28105C H	СН	15781779.2	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
63	PCT28105C N	CN	20158005302 7.X	9/9/15	ZL20158005302 7.X	11/2/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
64	PCT28105 DE	DE	60 2015 012 834.6	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
65	PCT28105E P	EP	15781779.2	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
66	PCT28105E S	ES	ES 2688399 T3	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
67	PCT28105F I	FI	15781779.2	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
68	PCT28105F R	FR	15781779.2	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
69	PCT28105 GB	GB	15781779.2	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
70	A28105HK	HK	17109485.4	9/9/15	HK1235891	9/20/19	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
71	PCT28105I D	ID	PID20170186 7	9/9/15	IDP000069869	7/20/20	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
72	PCT28105I N	IN	20171701086	9/9/15	2102000	(107/10	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
73	PCT28105I T	IT	50201800002 8458	9/9/15	3192008	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
74	PCT28105J P	JP	2017-513107	9/9/15	6257840	12/15/17	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
75	PCT28105 KR	KR	10-2017- 7009343	9/9/15	10-1902136	9/18/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
76	PCT28105 MX	MX	MX/a/2017/0 02987	9/9/15	359546	10/2/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
77	PCT28105 MY	MY	PI 2017000374	9/9/15	MY-179071-A	10/27/20	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS
78 79	PCT28105 NL PCT28105R	NL RU	15781779.2 2017111779	9/9/15	3192008 2671540	6/27/18	SYSTEMS AND METHODS FOR LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
80	U PCT28105S	SG	11201701855	9/9/15	2071340 11201701855R	2/6/18	LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
81	G PCT28105T	TH	R 1701001266	9/9/15	11201701833K	2/0/10	LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
82	H PCT28105T	TR	15781779.2	9/9/15	TR201813486T4	6/27/18	LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
83	R PCT28105	VN	1-2017-01174	9/9/15	111201010101	0,21,10	LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
84	VN EYV-	WO	PCT/US2015/	9/9/15			LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
85	007WO EYV-	AU	$\frac{049195^2}{2015315156^3}$	9/9/15			LIVENESS ANALYSIS SYSTEMS AND METHODS FOR
86	007AU A28106	US	14/631,819	2/25/15	9,939,893	04/10/18	LIVENESS ANALYSIS EYE GAZE TRACKING
87	US PCT28106B	BR	BR11201601	2/25/15			EYE GAZE TRACKING
88	R PCT28106C	CN	9529-9 20158001668	2/25/15	ZL20158001668	8/30/19	EYE GAZE TRACKING
89	N PCT28106E	EP	7.0 15709584.5	2/25/15	7.0		EYE GAZE TRACKING
	P						

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90	A28106HK	HK	17101729.7	2/25/15	1228074	9/11/20	EYE GAZE TRACKING
91	PCT28106I D	ID	P0020160608	2/25/15	IDP000064104	10/25/19	EYE GAZE TRACKING
92	PCT28106I N	IN	20161703052	2/25/15			EYE GAZE TRACKING
93	PCT28106J P	JP	2016-553832	2/25/15	6329635	4/27/18	EYE GAZE TRACKING
94	PCT28106 KR	KR	10-2016- 7026026	2/25/15	10-1950562	2/14/19	EYE GAZE TRACKING
95	PCT28106 MY	MY	PI201600156 0	2/25/15	MY-180872-A	12/10/20	EYE GAZE TRACKING
96	EYV- 008PR	US	61/944,4384	2/25/14			EYEPRINT GAZE TRACKING
97	EYV- 008WO	WO	PCT/US2015/ 017604 ²	2/25/15	10.220.770	064140	EYEPRINT GAZE TRACKING
98	A28107US	US	14/672,629	3/30/15	10,320,779	06/11/19	BIO LEASH FOR USER AUTHENTICATION
99	PCT28107 AU PCT28107	AU AU	2015244258 2019200642	3/30/15	2015244258	4/18/19	BIO LEASH FOR USER AUTHENTICATION BIO LEASH FOR USER
	AUD1				2019200042	10/22/20	AUTHENTICATION
101	PCT28107B R A28107US	BR US	BR11201602 3338-7	3/30/15	10.620.691	04/21/20	BIO LEASH FOR USER AUTHENTICATION BIO LEASH FOR USER
102	C 1		16/393,071		10,630,681	04/21/20	BIO LEASH FOR USER AUTHENTICATION
	PCT28107C A	CA	2945030	3/30/15	2945030	3/31/20	BIO LEASH FOR USER AUTHENTICATION
	PCT28107C N	CN	20158002190 8.3	3/30/15	ZL 201580021908.3	7/7/20	BIO LEASH FOR USER AUTHENTICATION
105	PCT28107 DE	DE	15716330.4	3/30/15	3130169	1/1/20	BIO LEASH FOR USER AUTHENTICATION
	PCT28107E	EP	15716330.4	3/30/15	3130169	1/1/20	BIO LEASH FOR USER AUTHENTICATION
107	PCT28107F R	FR	15716330.4	3/30/15	3130169	1/1/20	BIO LEASH FOR USER AUTHENTICATION
108	PCT28107 GB	GB	15716330.4	3/30/15	3130169	1/1/20	BIO LEASH FOR USER AUTHENTICATION
109	A28107HK	HK	18100675.2	3/30/15	1241488B	2/5/21	BIO LEASH FOR USER AUTHENTICATION
	PCT28107I D		3		IDP000071591	9/21/20	BIO LEASH FOR USER AUTHENTICATION
111	PCT28107I N	IN	20161703453	3/30/15			BIO LEASH FOR USER AUTHENTICATION
112	A28107KH	КН	KH/RRP.SG/ 2019/00010	3/30/15	KH/GRRP.SG/00 045	2/12/20	BIO LEASH FOR USER AUTHENTICATION
113	PCT28107 KR	KR	10-2016- 7030692	3/30/15	10-2137981	7/21/20	BIO LEASH FOR USER AUTHENTICATION
114	EYV- 010MO	МО	J/4287	7/27/20	J/004287	8/26/20	BIO LEASH FOR USER AUTHENTICATION
115	PCT28107 MX	MX	MX/a/2016/0 13126	3/30/15	365981	6/21/19	BIO LEASH FOR USER AUTHENTICATION
116	PCT28107 MY	MY	PI201600180 9	3/30/15			BIO LEASH FOR USER AUTHENTICATION
	PCT28107R U	RU	2016143181	3/30/15	2690214	5/31/19	BIO LEASH FOR USER AUTHENTICATION
118	PCT28107R UD1	RU	2019115681	3/30/15	2737509	12/1/20	BIO LEASH FOR USER AUTHENTICATION

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119	PCT28107S G	SG	11201608407 U	3/30/15	11201608407U	8/4/19	BIO LEASH FOR USER AUTHENTICATION
120	PCT28107S GD1	SG	10201902107 V	3/30/15	10201902107V	10/21/21	BIO LEASH FOR USER AUTHENTICATION
121	PCT28107T H	TH	1601006090	3/30/15			BIO LEASH FOR USER AUTHENTICATION
122	PCT28107 VN	VN	1-2016-04217	3/30/15	27670	2/3/21	BIO LEASH FOR USER AUTHENTICATION
123	EYV- 010PR	US	61/976,219 ⁴	4/7/14			BIO LEASH FOR USER AUTHENTICATION
124	EYV- 010WO	WO	PCT/US2015/ 023344 ²	3/30/15			BIO LEASH FOR USER AUTHENTICATION
125	PCT28107J P	JP	2016-5613233	3/30/15			BIO LEASH FOR USER AUTHENTICATION
126	A28108US	US	15/169,107	5/31/16	9,665,784	5/30/17	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
127	PCT28108 AU	AU	2016278859	5/31/16	2016278859	10/31/19	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
128	PCT28108B R	BR	BR11201702 7057-9	5/31/16	PI11027057	5/12/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
129	A28108US C1	US	15/498,797	4/27/17	10,108,871	10/23/18	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
130	PCT28108C A	CA	2989575	5/31/16	2989575	3/24/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
131	PCT28108C N	CN	20168004162 8.3	5/31/16	107851182	4/19/19	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
132	PCT28108C ND1	CN	20191022904 0.6	5/31/16	ZL 201910229040.6	1/15/21	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
133	PCT28108E P	EP	16729154.1	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
134	A28108HK	НК	18110912.4	5/31/16	HK1251691B	2/21/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
135	A28108HK D1	HK	42020001080. 9	5/31/16	40011433	5/14/21	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
136	PCT28108I D	ID	PID20180029	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
137	PCT28108I N	IN	20171704550	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
138	PCT28108J P	JP	2017-565178	5/31/16	6735778	7/16/20	SYSTEMS, METHODS, AND A NONTRANSITORY COMPUTER-
							READABLE MEDIUM FOR SPOOF DETECTION AND LIVENESS ANALYSIS
139	PCT28108 KH	KH	KH/RRP.SG/ 2019/00011	5/31/16	KH/GRRP.SG/00 046	2/12/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
140	PCT28108 KR	KR	10-2018- 7000950	5/31/16	10-2061434	12/24/19	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
141	PCT28108 KRD1	KR	10-2019- 7037958	5/31/16	10-2131103	7/1/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
142	PCT28108 MX	MX	MX/a/2017/0 16718	5/31/16	383600	6/15/21	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
143	PCT28108 MY	MY	PI 2017001867	5/31/16	MY-182294-A	1/18/21	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
144	PCT28108P H	PH	1-2017- 502353	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
145	PCT28108R U	RU	2018101202	5/31/16	2715521	2/28/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
146	PCT28108R UD1	RU	2020106758	5/31/16	2725413	7/2/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS

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		gion!	No.	Date			
147	PCT28108S G	SG	11201710474 X	5/31/16	11201710474X	7/22/19	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
148	PCT28108S GD1	SG	10201906574 V	5/31/16	10201906574V	5/25/21	LIVENESS DETECTION USING VITALS DETECTION
149	PCT28108T H	TH	1701007537	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
150	A28108TW	TW	105118012	6/7/16	I695182	6/1/20	SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
151	PCT28108 VN	VN	1-2018-00146	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
152	EYV- 012PR	US	62/180,4814	6/16/15			LIVENESS ANALYSIS USING VITALS DETECTION
153	EYV- 012WO	WO	PCT/US2016/ 035007 ²	5/31/16			SYSTEMS AND METHODS FOR SPOOF DETECTION AND LIVENESS ANALYSIS
154	A28109US A	US	15/261,208	9/9/16	9,836,643	12/05/17	IMAGE AND FEATURE QUALITY FOR OCULAR-VASCULAR AND FACIAL RECOGNITION
155	PCT28109 AU	AU	2016319775	9/9/16	2016319775	1/17/19	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
156	PCT28109 AUD1	AU	2018256555	9/9/16	2018256555	8/15/19	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
157	PCT28109 AUD2	AU	2019204639	9/9/16	2019204639	4/2/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
158	A28109US B	US	15/261,217	9/9/16	9,721,150	08/01/17	IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION
159	PCT28109B R	BR	BR11201800 4755-4	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
160	PCT28109B RD1	BR	BR12201800 7964-9	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR

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		gion	No.	Date			SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
161	PCT28109B RD2	BR	BR12201800 7961-4	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
162	A28109US C	US	15/261,224	9/9/16	10,311,286	06/04/19	FUSING OCULAR-VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
163	PCT28109C N	CN	20168006061 4.6	9/9/16	ZL20168006061 4.6	11/1/19	IMAGE-BASED BIOMETRIC SYSTEMS AND COMPUTER-IMPLEMENTED METHODS
164	PCT28109C ND1	CN	20191094842 7.7	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
165	A28109HK	НК	18111261.9	9/9/16	1251933 B	9/4/20	IMAGE-BASED BIOMETRIC SYSTEMS AND COMPUTER-IMPLEMENTED METHODS
166	A28109HK D1	НК	42020006694. 2	4/29/20			BIOMETRIC SYSTEM AND COMPUTER- IMPLEMENTED METHOD BASEDON IMAGE
167	PCT28109I D	ID	PID20180222 7	9/9/16	IDP000074953	2/10/21	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
168	PCT28109I N	IN	20181701008	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
169	PCT28109J P	JP	2018-512910	9/9/16	6416438	10/12/18	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS

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170	PCT28109J PD1	JP	2018-188074	9/9/16	6449516	12/14/18	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
171	PCT28109J PD2	JP	2018-227836	9/9/16	6778247	10/13/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
172	PCT28109 KR	KR	10-2018- 7009807	9/9/16	10-1967123	4/2/19	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
173	PCT28109 KRD1	KR	10-2019- 7009324	9/9/16	10-2067947	1/13/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
174	PCT28109 KRD2	KR	10-2020- 7000837	9/9/16	10-2131104	7/1/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
175	A28109MO	МО	J/4017	9/9/16	J/004017	4/9/20	IMAGE-BASED BIOMETRIC SYSTEMS AND COMPUTER-IMPLEMENTED METHODS
176	PCT28109 MX	MX	MX/a/2018/0 03051	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
177	PCT28109 MY	MY	PI201800035 7	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS

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178	PCT28109P H	PH	1-2018- 500541	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR-
							VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR
							SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
179	PCT28109R U	RU	2018112713	9/9/16	2691195	6/11/19	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
	PCT28109R UD1	RU	2019116007	9/9/16	2711050	1/14/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
181	PCT28109S G	SG	11201802003 W	9/9/16	11201802003W	3/12/20	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
182	PCT28109S GD1	SG	10202001380 R	9/9/16	10202001380R	7/16/21	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
183	PCT28109S GD2	SG	10202001382 X	9/9/16	10202001382X	7/16/21	IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
184	PCT28109T H	TH	1801001471	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
185	A28109TW	TW	105129475	9/10/16	I687832	3/11/20	BIOMETRIC SYSTEM AND COMPUTER- IMPLEMENTED METHOD FOR BIOMETRICS

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186	A28109TW D1	TW	109111129	4/1/20	I706266	10/1/20	BIOMETRIC SYSTEM AND COMPUTER- IMPLEMENTED METHOD FOR BIOMETRICS
187	A28109TW D2	TW	109111130	4/1/20	I706272	10/1/20	BIOMETRIC SYSTEM AND COMPUTER- IMPLEMENTED METHOD FOR BIOMETRICS
188	PCT28109 VN	VN	1-2018-01288	9/9/16			IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION
189	EYV- 013USBC1	US	15/636,025 ³	6/28/17			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION, AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
190	PCT28109E P	EP	16766809.4 ³	9/9/16			IMAGE AND FEATURE QUALITY, IMAGE ENHANCEMENT AND FEATURE EXTRACTION FOR OCULAR- VASCULAR AND FACIAL RECOGNITION, AND FUSING OCULAR- VASCULAR WITH FACIAL AND/OR SUB-FACIAL INFORMATION FOR BIOMETRIC SYSTEMS
191	EYV- 013WO	WO	PCT/US2016/ 050999 ²	9/9/16			IMAGE AND FEATURE QUALITY FOR OCULAR-VASCULAR AND FACIAL RECOGNITION
192	EYV- 013USAC1	US	15/728,919 ³	10/10/17			IMAGE AND FEATURE QUALITY FOR OCULAR-VASCULAR AND FACIAL RECOGNITION
193	EYV- 013PR	US	62/217,6604	9/11/15			IMAGE ENHANCEMENT, QUALITY METRICS, FEATURE EXTRACTION, INFORMATION FUSION, POSE ESTIMATION AND COMPENSATION, AND TEMPLATE UPDATES FOR BIOMETRIC SYSTEMS
194	A28110US	US	15/277,112	9/27/16	10,931,455	02/23/21	SECURE IMAGE PIPELINE
195	EYV- 014PR	US	62/233,7274	9/28/15			SECURE IMAGE PIPELINE
196	EYV- 014WO	US	PCT/US2016/ 053903 ²	9/27/16			SECURE IMAGE PIPELINE
197	EYV- 014TW	US	105131409 ³	9/29/16			SECURE IMAGE PIPELINE
198	A28111US	US	15/446,564	3/1/17	10,111,103	10/23/18	SPOOF DETECTION USING PROXIMITY SENSORS
199	A28111US C1	US	16/138,233	9/21/18	10,652,749	05/12/20	SPOOF DETECTION USING PROXIMITY SENSORS
200	PCT28111C N	CN	20178001503 3.5	3/1/17	ZL20178001503 3.5	6/16/2020	SPOOF DETECTION USING PROXIMITY SENSORS
201	A28111HK	HK	19122963.2	3/1/17	1263002B	1/22/21	SPOOF DETECTION USING PROXIMITY SENSORS
202	EYV- 015MO	МО	J/4264	7/10/20	J/4264	8/13/2020	SPOOF DETECTION USING PROXIMITY SENSORS
203	A28111TW	TW	106106899	3/2/17	I694347	5/21/20	SPOOF DETECTION USING PROXIMITY SENSORS
204	EYV- 015WO	WO	PCT/US2017/ 020166 ²	3/1/17			SPOOF DETECTION USING PROXIMITY SENSORS

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205	EYV- 015PR	US	62/302,526 ⁴	3/2/16			SPOOF DETECTION USING PROXIMITY SENSORS
206	A28112US	US	15/806,943	11/8/17	10,452,826	10/22/19	VERIFIED AND PRIVATE PORTABLE IDENTITY
207	PCT28112I D	ID	PID20190407 4	11/8/17	IDP000077279	6/4/21	VERIFIED AND PRIVATE PORTABLE IDENTITY
208	PCT28112I N	IN	20191702161	11/8/17			VERIFIED AND PRIVATE PORTABLE IDENTITY
209	PCT28112 MY	MY	PI201900173 4	11/8/17			VERIFIED AND PRIVATE PORTABLE IDENTITY
210	PCT28112P H	PH	1-2019- 500983	11/8/17			VERIFIED AND PRIVATE PORTABLE IDENTITY
211	PCT28112S G	SG	11201902833 Q	11/8/17	11201902833Q	7/3/20	VERIFIED AND PRIVATE PORTABLE IDENTITY
212	PCT28112T H	TH	1901002859	11/8/17	********	C10.1.10.0	VERIFIED AND PRIVATE PORTABLE IDENTITY
213	A28112TW	TW	106138796	11/9/17	I696935	6/21/20	VERIFIED AND PRIVATE PORTABLE IDENTITY
214	EYV- 017PR	US	62/420,392 ⁴	11/10/16			VERIFIED AND PRIVATE PORTABLE IDENTITY
215	EYV- 017WO	WO	PCT/US2017/ 060572 ²	11/8/17	10.607.077	2/21/2020	VERIFIED AND PRIVATE PORTABLE IDENTITY
216	A28118US	US	16/665,944	10/28/19	10,607,077	3/31/2020	IDENTITY AUTHENTICATION USING AN INLIER NEURAL NETWORK
217	A28118US C1	US	16/797,903	2/21/20	10,956,738	3/23/2021	IDENTITY AUTHENTICATION USING AN INLIER NEURAL NETWORK
218	A28150US	US	16/534,773	8/7/19			MICROWAVE BIOMETRIC AUTHENTICATION USING MACHINE LEARNING
219	A28150CN	CN	20201078887 62	8/7/2020			METHODS, SYSTEMS, AND DEVICES FOR MICROWAVE BIOMETRIC AUTHENTICATION
220	A33999US	US	17/244,657	4/29/21			MULTI-SENSOR MOTION ANALYSIS TO CHECK CAMERA PIPELINE INTEGRITY
221	A34000US	US	17/230,397	4/14/21	11,341,880	5/24/2022	MULTI-SENSOR SCENE BRIGHTNESS ANALYSIS TO CHECK CAMERA PIPELINE INTEGRITY
222	A34001US	US	17/138,779	12/30/20	11,080,516	8/3/2021	SPOOF DETECTION BASED ON RED- EYE EFFECTS
223	A34001US C1	US	17/391,773	8/2/21	11,335,119	5/17/2022	SPOOF DETECTION BASED ON RED- EYE EFFECTS
224	A34003US	US	17/225,797	4/8/21	11,126,879	9/21/2021	SPOOF DETECTION USING ILLUMINATION SEQUENCE RANDOMIZATION
225	A34003US C1	US	17/479,882	9/20/21			SPOOF DETECTION USING ILLUMINATION SEQUENCE RANDOMIZATION
226	A34004US	US	17/224,923	4/7/21	11,195,009	12/7/2021	INFRARED-BASED SPOOF DETECTION
227	A34005US	US	17/339,412	6/4/21	11,341,225	5/24/2022	AUTOMATED POSITIONAL ADAPTIVE SPOOFING
228	A34006US	US	17/339,448	6/4/21	11,341,778	5/24/2022	AUTOMATED ADAPTIVE DISPLAYED SPOOFING
229	A34007US	US	17/478,417	9/17/21			SPOOF DETECTION USING EYE BOUNDARY ANALYSIS

No.	Docket No.	Ctry/Re gion	Application No.	Filing Date	Patent No.	Issue Date	Title
230	A34008US	US	17/463,199	8/31/21			SPOOF DETECTION BASED ON CHALLENGE RESPONSE ANALYSIS
231	A34009US	US	17/471,712	9/10/21			SPOOF DETECTION USING CATADIOPTRIC SPATIOTEMPORAL CORNEAL REFLECTION DYNAMICS
232	A34012US	US	17/484,851	9/24/21			SPOOF DETECTION BY CORRELATING IMAGES CAPTURED USING FRONT AND BACK CAMERAS OF A MOBILE DEVICE
233	A34013US	US	17/339,511	6/4/21	11,334,755	5/17/2022	AUTOMATED SPOOFING TRANSFORMATION
234	PCT28152C N	CN	20188007171	11/5/18	CN 111373413 B	11/9/2021	A METHOD FOR GENERATING A REPRESENTATION OF AN IMAGE AND AN IMAGING SYSTEM
235	A28152HK	HK	62020022986. 7	12/30/202	HK40032725	3/18/2022	A METHOD AND IMAGING SYSTEM FOR GENERATING A REPRESENTATION OF AN IMAGE
236	A28152TW	TW	107139356	11/6/18	I727219	5/11/2021	METHOD FOR GENERATING REPRESENTATION OF IMAGE, IMAGING SYSTEM, AND MACHINE- READABLE STORAGE DEVICES
237	A28152US P1	US	62/582,7435	11/7/17			CAPTURING IMAGES UNDER CODED ILLUMINATION PATTERNS TO REDUCE EFFECTS OF AMBIENT LIGHTING CONDITIONS
238	PCT28152	WO	PCT/US2018/ 059171 ⁶	11/5/18			CAPTURING IMAGES UNDER CODED ILLUMINATION PATTERNS TO REDUCE EFFECTS OF AMBIENT LIGHTING CONDITIONS
239		US	63/297,636	1/7/22			BIOMETRIC AUTHENTICATION USING HEAD-MOUNTED DEVICES
240	A34010US	US	17/704,958	3/25/2022			SPOOF DETECTION USING INTRAOCULAR REFLECTION CORRESPONDENCES
241	A34011US	US	17/704,927	3/25/2022			SPOOF DETECTION USING HEAD POSE TO EYE GAZE CORRESPONDENCE

RECORDED: 07/29/2022

⁵ Expired

⁶ Expired