

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT8259110

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
FOTONATION CAYMAN LIMITED	05/16/2018
RECEIVING PARTY DATA	
Name:	FOTONATION LIMITED
Street Address:	CLIONA, BUILDING ONE
Internal Address:	PARKMORE EAST BUSINESS PARK, BALLYBRIT
City:	GALWAY
State/Country:	IRELAND
Postal Code:	H91R2E9
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	17821258
CORRESPONDENCE DATA	
Fax Number:	(949)852-0004
<i>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.</i>	
Phone:	9498520000
Email:	pair@kppb.com
Correspondent Name:	KPPB LLP
Address Line 1:	3780 KILROY AIRPORT WAY
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Address Line 4:	LONG BEACH, CALIFORNIA 90806
ATTORNEY DOCKET NUMBER:	P16-01660.CON7
NAME OF SUBMITTER:	EMMU ZHOU
SIGNATURE:	/Emmu Zhou/
DATE SIGNED:	11/03/2023
Total Attachments: 17	
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RECORDATION FORM COVER SHEET
PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)

FotoNation Cayman Limited

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance/Execution Date(s):

Execution Date(s) 05/16/2018

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Joint Research Agreement
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other _____

2. Name and address of receiving party(ies)

Name: FotoNation Limited

Internal Address: Parkmore East Business Park, Ballybrit

Street Address: Cliona, Building One

City: Galway

State: _____

Country: IE Zip: H91R2E9

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☐ This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)

B. Patent No.(s)

17/821,258

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: KPPB LLP

Internal Address: Suite 320

Street Address: 3780 Kilroy Airport Way

City: Long Beach

State: CA Zip: 90806

Phone Number: 949.852.0000

Docket Number: P16-01660.CON7

Email Address: pair@kppb.com

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____

- ☐ Authorized to be charged to deposit account
☐ Enclosed
☐ None required (government interest not affecting title)

8. Payment Information

Deposit Account Number _____

Authorized UserName _____

9. Signature: /David Kaveh/

11-3-2023

Signature

Date

David Kaveh

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents:

17

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

PATENT
REEL: 065458 FRAME: 0123

CONFIRMATION OF ASSIGNMENT

1. Definitions

The **Assignor** means **FotoNation Cayman Limited**, a Cayman Islands Corporation with registered number 316259 and having its registered address at Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands, and having its place of business at 3025 Orchard Parkway, San Jose, CA 95134, United States, together with any successors in interest.

The **Assignee** means **FotoNation Limited**, an Irish corporation with registered number 276067, having its registered office at Cliona, Building One, Parkmore East Business Park, Ballybrit, Galway H91R2E9, Ireland.

The **Intellectual Property** means the patents and patent applications found in Exhibit A.

2. Declarations acknowledging assignment

The **Assignor** was the assignor of record of **The Intellectual Property** prior to January 1, 2017.

The assignment executed by Paul Davis on October 27, 2017 on behalf of the **Assignor** confirms an early assignment effective as of January 1, 2017 that was effective to and did in fact complete the assignment to the **Assignee** on January 1, 2017 of the entire right, title and interest in and to **The Intellectual Property**, including, but not limited to:

- related applications to **The Intellectual Property**;
- the inventions disclosed in the above applications and related applications;
- all priority rights arising out of **The Intellectual Property** under International Agreements, Treaties and Conventions for the protection of intellectual property in its various forms; and
- the right to sue for infringement of any right arising from the filing of **The Intellectual Property** or any related applications to **The Intellectual Property** that occurred prior to the assignment of January 1, 2017.

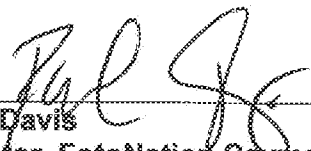
To the extent that any early assignment is deemed ineffective, **Assignor** confirms that they were under obligation to assign, and hereby assigns **The Intellectual Property** and the above described rights to **Assignee**.

CONFIRMATION OF ASSIGNMENT

3. Authorization to issue patents in name of Assignee

The assignment executed by Paul Davis on October 27, 2017 on behalf of the Assignor also authorizes and requests the United States Commissioner of Patents and Trademarks, and any officials of foreign countries whose duty it is to issue patents on applications, to issue any patent arising from the assigned rights and/or applications to the Assignee.

IN TESTIMONY WHEREOF, I hereunto set my hand this 16th day of May, 2018.



Paul Davis
Director, FotoNation Cayman Limited

Witness: 

Print Name: Jennifer Kostic

EXHIBIT A

TRANSFEROR INTANGIBLES

Countr y Code	Assignee	Status	Application #	Filing Date	Publication #	Publicatio n Date	Patent #	Grant Date	Title
CA	FotoNatio n Cayman Limited	Pendin g	2821965	12/14/201 4					System and Methods for Synthesizing High Resolution Images Using Super-Resolution Processes
CA	FotoNatio n Cayman Limited	Pendin g	2881131	8/21/2013					Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
CN	FotoNatio n Cayman Limited	In Force	200980117890.1	5/20/2009	102037717		ZL200980117890. 1	11/6/2013	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
CN	FotoNatio n Cayman Limited	In Force	201310438869X	5/20/2009	103501416	1/8/2014	ZL201310438869. X	4/12/2017	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
CN	FotoNatio n Cayman Limited	In Force	201280029399.5	5/11/2012	103765864	4/30/2014	ZL201280029399. 5	7/4/2017	Systems and methods for transmitting and receiving array camera image data
CN	FotoNatio n Cayman Limited	Pendin g	201710422675.9	5/11/2012					Systems and methods for transmitting and receiving array camera image data
CN	FotoNatio n Cayman Limited	Pendin g	201380029203.7	5/1/2013	104335246				Camera Modules Patterned with pi Filter Groups
CN	FotoNatio n Cayman Limited	Pendin g	201380040238.0	6/28/2013	104508681				Systems and Methods for Detecting Defective Camera Arrays, Optic Arrays and Sensors
CN	FotoNatio n Cayman Limited	In Force	201380048735.5	8/21/2013	104662589	5/27/2015	ZL201380048735. 5	8/4/2017	Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
CN	FotoNatio n Cayman Limited	Pendin g	201710550511.4	8/21/2013					Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
CN	FotoNatio n Cayman Limited	In Force	201280055766.9	9/28/2012	104081414	10/1/2014	ZL201280055766. 9	8/1/2017	Systems and Methods for Encoding and Decoding Light Field Image Files
CN	FotoNatio n Cayman Limited	Pendin g	201710541440.1	9/28/2012					Systems and Methods for Encoding and Decoding Light Field Image Files
CN	FotoNatio n Cayman Limited	Pendin g	201380049828X	8/23/2013	104685513				Feature Based High Resolution Motion Estimation from Low Resolution Images Captured Using an Array Source
CN	FotoNatio n Cayman Limited	Pendin g	201580056436.5	9/29/2015					Systems and Methods for Dynamic Calibration of Array Cameras

DE	Limited	In Force	11848308.0	12/14/2011				2652678	9/20/2017	System and Methods for Synthesizing High Resolution Images Using Super-Resolution Processes
DE	FotoNation Cayman Limited	In Force	11781313.9	5/12/2011	2569935			60201103881.1	12/28/2016	Architectures for imager arrays and array cameras
EP	FotoNation Cayman Limited	Pending	09763194.9	5/20/2009	2289235					Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
EP	FotoNation Cayman Limited	Pending	12782935.6	5/11/2012	2708019					Systems and Methods for Transmitting Array Camera Data
EP	FotoNation Cayman Limited	Pending	13751714.0	2/21/2013	2817955					Systems and Methods for the Manipulation of Captured Light Field Image Data
EP	FotoNation Cayman Limited	Pending	13810229.8	6/28/2013	2873028					Systems and Methods for Detecting Defective Camera Arrays, Optic Arrays and Sensors
EP	FotoNation Cayman Limited	Pending	13830945.5	8/21/2013	2888720					Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
EP	FotoNation Cayman Limited	Pending	14763087.5	3/17/2014	2973476					Systems and Methods for Stereo Imaging with Camera Arrays
EP	FotoNation Cayman Limited	Pending	14865463.5	11/26/2014	3075140					Array Camera Configurations Incorporating Multiple Constituent Array Cameras
EP	FotoNation Cayman Limited	Pending	14860103.2	11/7/2014	3066690					Methods of Manufacturing Array Camera Modules Incorporating Independently Aligned Lens Stacks
EP	FotoNation Cayman Limited	Pending	12835041.0	9/28/2012	2761534					Systems and Methods for Encoding and Decoding Light Field Image Files
EP	FotoNation Cayman Limited	Pending	13841613.6	9/30/2013	2901671					Generating Images from Light Fields Utilizing Virtual Viewpoints
EP	FotoNation Cayman Limited	Pending	15847754.7	9/29/2015						Systems and Methods for Dynamic Calibration of Array Cameras
FR	FotoNation Cayman Limited	In Force	11848308.0	12/14/2011				2652678	9/20/2017	System and Methods for Synthesizing High Resolution Images Using Super-Resolution Processes
FR	FotoNation Cayman Limited	In Force	11781313.9	5/12/2011	2569935			2569935	12/28/2016	Architectures for Imager Arrays and Array Cameras
GB	FotoNation	In	11848308.0	12/14/2011				2652678	9/20/2017	System and Methods for Synthesizing High

KR	FotoNatio n Cayman Limited	In Force	10-2010-7028308	5/20/2009			10-1588877	1/20/2016	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
KR	FotoNatio n Cayman Limited	In Force	10-2016-7001433	5/20/2009			10-1733443	4/28/2017	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
KR	FotoNatio n Cayman Limited	Pendin g	10-2017-7011490	5/20/2009					Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
KR	FotoNatio n Cayman Limited	Pendin g	10-2012-7027121	3/17/2011		10-2013-0004505			Fabrication Process for Mastering Image Lens Arrays
KR	FotoNatio n Cayman Limited	Pendin g	10-2013-7032457	5/11/2012					Systems and Methods for Transmitting Array Camera Data
KR	FotoNatio n Cayman Limited	Pendin g	10-2015-7002308	6/28/2013					Systems and Methods for Detecting Defective Camera Arrays, Optic Arrays and Sensors
KR	FotoNatio n Cayman Limited	Pendin g	10-2015-7006433	8/21/2013					Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
KR	FotoNatio n Cayman Limited	Pendin g	10-2012-7032552	5/12/2011					Architectures for Imager Arrays and Array Cameras
KR	FotoNatio n Cayman Limited	Pendin g	10-2014-7011449	9/28/2012					Systems and Methods for Encoding and Decoding Light Field Image Files
KR	FotoNatio n Cayman Limited	Pendin g	10-2015-7002415	6/14/2013					Systems and Methods for Manufacturing Camera Modules Using Active Alignment of Lens Stack Arrays and Sensors
KR	FotoNatio n Cayman Limited	Pendin g	2017-7011284	9/29/2015					Systems and Methods for Dynamic Calibration of Array Cameras
SG	FotoNatio n Cayman Limited	In Force	2010079085	5/20/2009			166239	2/28/2011	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
SG	FotoNatio n Cayman Limited	In Force	2013045703	12/14/2011			191151	3/3/2015	System and Methods for Synthesizing High Resolution Images Using Super-Resolution Processes
SG	FotoNatio n Cayman Limited	In Force	2013093141	6/25/2012			2013093141	12/2/2014	Optical Arrangements for Use with an Array Camera
SG	FotoNatio n Cayman Limited	In Force	11201500910R	8/21/2013			11201500910R	10/15/2015	Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras
SG	FotoNatio n Cayman Limited	Pendin g	10201503516V	5/12/2011					Architectures for Imager Arrays and Array Cameras

TW	FotoNation Cayman Limited	ed as ce	99147177	12/31/2010	201228382	7/1/2012	1535292	5/21/2016	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
US	FotoNation Cayman Limited	In Force	12/935,504	5/20/2009	2011-0069189	3/24/2011	8902321	12/2/2014	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers
US	FotoNation Cayman Limited	In Force	14/447,477	7/30/2014	2014-0333787	11/13/2014	8896719	11/25/2014	Systems and Methods for Parallax Measurement Using Camera Arrays
US	FotoNation Cayman Limited	In Force	14/447,485	7/30/2014	2014-0333731	11/13/2014	9041823	5/26/2015	Incorporating 3 x 3 Camera Configurations Systems and Methods for Performing Post-Capture Refocus Using Images Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/447,494	7/30/2014	2014-0340539	11/20/2014	9049390	6/2/2015	Capturing and Processing of Images Captured by Arrays Including Polychromatic Cameras
US	FotoNation Cayman Limited	In Force	14/447,508	7/30/2014	2014-0333764	11/13/2014	9060120	6/16/2015	Systems and Methods for Generating Depth Maps Using Images Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/459,293	8/13/2014	2014-0354855	12/4/2014	9049367	6/2/2015	Systems and Methods for Synthesizing Higher Resolution Images Using Images Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/459,296	8/13/2014	2014-0354844	12/4/2014	8885059	11/11/2014	Systems and Methods for Measuring Depth Using Images Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/475,449	9/2/2014	2014-0368683	12/18/2014	9060124	6/16/2015	Capturing and Processing of Images Using Non-Monolithic Camera Arrays
US	FotoNation Cayman Limited	In Force	14/475,466	9/2/2014	2014-0368662	12/18/2014	9049391	6/2/2015	Capturing and Processing of Near-IR Images Including Occlusions Using Camera Arrays
US	FotoNation Cayman Limited	In Force	14/475,473	9/2/2014	2014-0368684	12/18/2014	9060142	6/16/2015	Incorporating Near-IR Light Sources Capturing and Processing of Images Captured by Camera Arrays Including Heterogeneous Optics
US	FotoNation Cayman Limited	In Force	14/475,477	9/2/2014	2014-0368685	12/18/2014	9041829	5/26/2015	Capturing and Processing of High Dynamic Range Images Using Camera Arrays
US	FotoNation Cayman Limited	In Force	14/497,159	9/25/2014	2015-0009362	1/8/2015	9060121	6/16/2015	Capturing and Processing of Images Captured by Camera Arrays Including Cameras Dedicated to Sampling Luma and Chroma
US	FotoNation Cayman Limited	In Force	14/497,171	9/25/2014	2015-0009353	1/8/2015	9055213	6/9/2015	Systems and Methods for Measuring Depth Using Images Captured by Monolithic Camera Arrays Including at Least One Bayer Camera
US	FotoNation Cayman Limited	In Force	14/497,180	9/25/2014	2015-0009354	1/8/2015	9077893	7/7/2015	Capturing and Processing of Images Captured by Non-Grid Camera Arrays
US	FotoNation Cayman Limited	In Force	14/704,909	5/5/2015	2015-0235371	8/20/2015	9235898	1/12/2016	Systems and Methods for Generating Depth Maps Using Light Focused on an Image Sensor

	Limited									by a Lens Element Array
US	FotoNation Cayman Limited	In Force	14/988,670	1/5/2016	2016026766 5	9/15/2016	9576369	2/21/2017	Systems and Methods for Generating Depth Maps Using Images Captured by Camera Arrays Incorporating Cameras Having Different Fields of View	
US	FotoNation Cayman Limited	In Force	15/095,930	4/11/2016	2016022719 5	8/4/2016	9485496	11/1/2016	Systems and Methods for Measuring Depth Using Images Captured by a Camera Array Including Cameras Surrounding a Central Camera	
US	FotoNation Cayman Limited	In Force	15/242,598	8/22/2016	2017000623 3	ument 17	9712759	7/18/2017	Systems and Methods for Generating Depth Maps Using a Camera Arrays Incorporating Monochrome and Color Cameras	
US	FotoNation Cayman Limited	Pending	15/651,877	7/17/2017					Systems and Methods for Generating Depth Maps Using a Camera Arrays Incorporating Monochrome and Color Cameras	
US	FotoNation Cayman Limited	In Force	12/967,807	12/14/2010	2012-0147205	6/14/2012	878950	11/4/2014	Systems and Methods for Synthesizing High Resolution Images Using Super-Resolution Processes	
US	FotoNation Cayman Limited	In Force	14/519,659	10/21/2014	2015-0036014	2/5/2015	9361662	6/7/2016	Systems and Methods for Synthesizing High Resolution Images Using Images Captured by an Array of Independently Controllable Imagers	
US	FotoNation Cayman Limited	In Force	14/520,266	10/21/2014	2015-0042833	2/12/2015	9047684	6/2/2015	Systems and Methods for Synthesizing High Resolution Images Using a Set of Geometrically Registered Images	
US	FotoNation Cayman Limited	In Force	14/520,269	10/21/2014	2015-0036015	2/5/2015	9041824	5/26/2015	Systems and Methods for Dynamic Refocusing of High Resolution Images Generated Using Images Captured by a Plurality of Imagers	
US	FotoNation Cayman Limited	Pending	15/170,788	6/1/2016	2017005338 2	2/23/2017			Systems and Methods for Synthesizing High Resolution Images Using Images Captured by an Array of Independently Controllable Imagers	
US	FotoNation Cayman Limited	In Force	12/952,106	11/22/2010	2011-0122308	5/26/2011	8514491	8/20/2013	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers	
US	FotoNation Cayman Limited	In Force	13/948,054	7/22/2013	2013-0308197	11/21/2013	8861089	10/14/2014	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers	
US	FotoNation Cayman Limited	In Force	14/475,481	9/2/2014	2014-0368686	12/18/2014	9264610	2/16/2016	Capturing and Processing of Images Including Occlusions Captured by Heterogeneous Camera Arrays	
US	FotoNation Cayman Limited	Pending	15/456,931	3/13/2017	2017018793 3	6/29/2017			Capturing and Processing of Images Captured by Camera Arrays Incorporating Cameras with Telephoto and Conventional Lenses To Generate Depth Maps	
US	FotoNation Cayman Limited	In Force	12/952,134	11/22/2010	2011-0080487	4/7/2011	8866920	10/21/2014	Capturing and Processing of Images Using Monolithic Camera Array with Heterogeneous Imagers	

US	FotoNation Cayman Limited	In Force	14/459,276	8/13/2014	2014-0354843	12/4/2014	9049411	6/2/2015	Camera Arrays Incorporating 3 x 3 Imager Configurations
US	FotoNation Cayman Limited	In Force	14/459,280	8/13/2014	2014-0347509	11/27/2014	9124815	9/1/2015	Capturing and Processing of Images Including Occlusions Captured by Arrays of Luma and Chroma Cameras
US	FotoNation Cayman Limited	In Force	14/459,282	8/13/2014	2014-0355870	12/4/2014	9094661	7/28/2015	Systems and Methods for Generating Depth Maps Using A Set of Images Containing A Baseline Image
US	FotoNation Cayman Limited	In Force	14/459,283	8/13/2014	20140354853		9055233	6/9/2015	Systems and Methods for Synthesizing Higher Resolution Images Using a Set of Images Containing a Baseline Image
US	FotoNation Cayman Limited	In Force	14/459,286	8/13/2014	2014-0354854	12/4/2014	9191580	11/17/2015	Capturing and Processing of Images Including Occlusions Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/459,288	8/13/2014	2014-0354773	12/4/2014	9049381	6/2/2015	Systems and Methods for Normalizing Image Data Captured by Camera Arrays
US	FotoNation Cayman Limited	In Force	14/704,920	5/5/2015	2015-0234151	8/20/2015	9188765	11/17/2015	Capturing and Processing of Images Including Occlusions Focused on an Image Sensor by a Lens Stack Array
US	FotoNation Cayman Limited	In Force	14/943,009	11/16/2015	20160269650	9/15/2016	9749547	8/29/2017	Capturing and Processing of Images Using Camera Array Incorporating Bayer Cameras Having Different Fields of View
US	FotoNation Cayman Limited	Pending	15/687,882	8/28/2017					Capturing and Processing of Images Using Camera Array Incorporating Bayer Cameras Having Different Fields of View
US	FotoNation Cayman Limited	In Force	13/050,429	3/17/2011	2011-0241234	10/6/2011	8231814	7/31/2012	Fabrication Process for Mastering Image Lens Arrays
US	FotoNation Cayman Limited	In Force	13/470,252	5/11/2012	201202877291	11/15/2012	8305456	11/6/2012	Systems and Methods for Transmitting and Receiving Array Camera Image Data
US	FotoNation Cayman Limited	In Force	13/668,057	11/2/2012	2013-0057710	3/7/2013	8692893	4/8/2014	Systems and Methods for Transmitting and Receiving Array Camera Image Data
US	FotoNation Cayman Limited	In Force	14/246,948	4/7/2014	2014-0218546	8/7/2014	9197821	11/24/2015	Systems and Methods for Transmitting and Receiving Array Camera Image Data
US	FotoNation Cayman Limited	Pending	14/936,199	11/9/2015	20160269626	9/15/2016			Systems and Methods for Transmitting and Receiving Array Camera Image Data
US	FotoNation Cayman Limited	In Force	13/106,804	5/12/2011	2011-0279721	11/17/2011	8928793	1/6/2015	Imager Array Interfaces
US	FotoNation Cayman Limited	Pending	14/880,907	10/12/2015	20160269627	9/15/2016			Imager Array Interfaces

US	FotoNatio n Cayman Limited	In Force	13/536,520	6/28/2012	2013- 0003184	1/3/2013	8804255	8/12/2014	Optical Arrangements for Use with an Array Camera
US	FotoNatio n Cayman Limited	In Force	14/281,534	5/19/2014	20140347748	9/8/2015	9128228	9/8/2015	Optical Arrangements for Use with an Array Camera
US	FotoNatio n Cayman Limited	In Force	14/705,919	5/6/2015	2015- 0244934	8/27/2015	9578237	2/21/2017	Array Cameras Incorporating Optics with Modulation Transfer Functions Greater than Sensor Nyquist Frequency for Capture of Images used in Super-Resolution Processing
US	FotoNatio n Cayman Limited	In Force	14/705,925	5/6/2015	2015029613 7	10/15/201 5	9516222	12/6/2016	Array cameras incorporating monolithic array camera modules with high MTF lens stacks for capture of images used in super- resolution processing
US	FotoNatio n Cayman Limited	In Force	13/773,284	2/21/2013	2013021510 8	8/22/2013	9412206	8/9/2016	Systems and Methods for the Manipulation of Captured Light Field Image Data
US	FotoNatio n Cayman Limited	In Force	14/705,914	5/6/2015	2015023547 6	8/20/2015	9754422	9/5/2017	Systems and Method for Performing Depth Based Image Editing
US	FotoNatio n Cayman Limited	Pendin g	15/694,700	9/1/2017					Systems and Method for Performing Depth Based Image Editing
US	FotoNatio n Cayman Limited	In Force	14/028,278	9/16/2013	2014- 0079336	3/20/2014	9214013	12/15/201 5	Systems and Methods for Correcting User Identified Artifacts in Light Field Images
US	FotoNatio n Cayman Limited	In Force	14/204,990	3/11/2014			9521416	12/13/201 6	Systems and methods for image data compression
US	FotoNatio n Cayman Limited	In Force	13/875,248	5/1/2013	2013029376 0	11/7/2013	9210392	12/8/2015	Camera Modules Patterned with PI Filter Groups
US	FotoNatio n Cayman Limited	In Force	14/952,195	11/25/201 5	2016016514 7	6/9/2016	9706132	7/11/2017	Camera Modules Patterned with PI Filter Groups
US	FotoNatio n Cayman Limited	In Force	ht to 675	3/3/2014			9638883	5/2/2017	Passive alignment of array camera modules constructed from lens stack arrays and sensors based upon alignment information obtained during manufacture of array camera modules using an active alignment process
US	FotoNatio n Cayman Limited	In Force	14/079,510	11/13/201 3	2014- 0132810	5/15/2014	9143711	9/22/2015	Systems and Methods for Array Camera Focal Plane Control
US	FotoNatio n Cayman Limited	In Force	14/855,715	9/16/2015	2016024900 1	8/25/2016	9749568	8/29/2017	Systems and Methods for Array Camera Focal Plane Control
US	FotoNatio n Cayman	In Force	14/200,629	3/7/2014			9445003	9/13/2016	Systems and Methods for Synthesizing High Resolution Images Using Image

US	Limited	Pending	15/258,947	9/7/2016	2017007067 3	3/9/2017			Deconvolution Based on Motion and Depth Information
US	FotoNation Cayman Limited	In Force	13/931,724	6/28/2013	2014-0002675	1/2/2014	9100835	8/4/2015	Systems and Methods for Synthesizing High Resolution Images Using Image Deconvolution Based on Motion and Depth Information
US	FotoNation Cayman Limited	In Force	14/805,412	7/21/2015	2015032685 2	11/12/2015			Systems and Methods for Detecting Defective Camera Arrays and Optic Arrays
US	FotoNation Cayman Limited	In Force	13/972,881	8/21/2013			8619082	12/31/2013	Systems and Methods for Detecting Defective Camera Arrays and Optic Arrays
US	FotoNation Cayman Limited	In Force	14/144,458	12/30/2013			8780113	7/15/2014	Systems and Methods for Parallax Detection and Correction in Images Captured Using Array Cameras that Contain Occlusions using Subsets of Images to Perform Depth Estimation
US	FotoNation Cayman Limited	In Force	14/329,754	7/11/2014	2014-0321712	10/30/2014	9240049	1/19/2016	Systems and Methods for Performing Depth Estimation using Image Data from Multiple Spectral Channels
US	FotoNation Cayman Limited	In Force	14/526,364	10/28/2014	2015-0049915	2/19/2015	9123117	9/1/2015	Systems and Methods for Measuring Depth Using an Array of Independently Controllable Cameras
US	FotoNation Cayman Limited	In Force	14/526,377	10/28/2014	2015-0042766	2/12/2015	9123118	9/1/2015	Systems and Methods for Generating Depth Maps and Corresponding Confidence Maps Indicating Depth Estimation Reliability
US	FotoNation Cayman Limited	In Force	14/526,392	10/28/2014	2015-0049916	2/19/2015	9235900	1/12/2016	System and Methods for Measuring Depth Using an Array Camera Employing a Bayer Filter
US	FotoNation Cayman Limited	In Force	14/526,398	10/28/2014	2015-0049917	2/19/2015	9147254	9/29/2015	Systems and Methods for Estimating Depth and Visibility from a Reference Viewpoint for Pixels in a Set of Images Captured from Different Viewpoints
US	FotoNation Cayman Limited	In Force	14/526,407	10/28/2014	2015-0042767	2/12/2015	9129377	9/8/2015	Systems and Methods for Measuring Depth in the Presence of Occlusions Using a Subset of Images
US	FotoNation Cayman Limited	Pending	14/988,680	1/5/2016	2016026767 2	9/15/2016			Systems and Methods for Measuring Depth Based Upon Occlusion Patterns in Images
US	FotoNation Cayman Limited	In Force	14/186,871	2/21/2014	2014-0232822	8/21/2014	9462164	10/4/2016	Systems and Methods for Estimating Depth and Visibility from a Reference Viewpoint for Pixels in a Set of Images Captured from Different Viewpoints
US	FotoNation Cayman Limited	Pending	15/599,900	5/19/2017	2017025756	9/7/2017			Systems and Methods for Generating Compressed Light Field Representation Data Using Captured Light Fields, Array Geometry, and Parallax Information
US	FotoNation Cayman Limited	Pending							Systems and Methods for Generating

	n Cayman Limited	g			2					Compressed Light Field Representation Data using Captured Light Fields, Array Geometry, and Parallax Information
US	FotoNation Cayman Limited	In Force	14/188,521	2/24/2014	2014-0240528	8/28/2014	9374512	6/21/2016		Thin Form Factor Computational Array Cameras and Modular Array Cameras
US	FotoNation Cayman Limited	In Force	14/188,524	2/24/2014	2014-0240529	8/28/2014	9253380	2/2/2016		Thin Form Factor Computational Array Cameras and Modular Array Cameras
US	FotoNation Cayman Limited	In Force	15/012,044	2/1/2016	20160269651	9/15/2016	9743051	8/22/2017		Thin Form Factor Computational Array Cameras and Modular Array Cameras
US	FotoNation Cayman Limited	In Force	15/136,166	4/22/2016	20170085845	3/23/2017	9774831	9/26/2017		Thin Form Factor Computational Array Cameras and Modular Array Cameras
US	FotoNation Cayman Limited	In Force	13/792,143	3/10/2013	2014-0253738	9/11/2014	8866912	10/21/2014		System and Methods for Calibration of an Array Camera Using a Single Captured Image
US	FotoNation Cayman Limited	In Force	14/519,005	10/20/2014	2015-0035992	2/5/2015	9124864	9/1/2015		System and Methods for Calibration of an Array Camera
US	FotoNation Cayman Limited	Pending	14/841,651	8/31/2015	20160165212	6/9/2016				System and Methods for Calibration of an Array Camera
US	FotoNation Cayman Limited	Pending	14/776,509	3/11/2014	20160037097	2/4/2016				Array Camera Architecture Implementing Quantum Film Image Sensors
US	FotoNation Cayman Limited	In Force	14/441,503	3/12/2014	2015-0312455	10/29/2015	9497370	11/15/2016		Array Camera Architecture Implementing Quantum Dot Color Filters
US	FotoNation Cayman Limited	In Force	14/776,553	3/12/2014	2016-0044252	2/11/2016	9578259	2/21/2017		Systems and Methods for Reducing Motion Blur in Images or Video in Ultra Low Light with Array Cameras
US	FotoNation Cayman Limited	Pending	15/438,542	2/21/2017	20170163862	6/8/2017				Systems and Methods for Reducing Motion Blur in Images or Video in Ultra Low Light with Array Cameras
US	FotoNation Cayman Limited	Pending	14/773,748	9/8/2015	20160044257	2/11/2016				Systems and Methods for Measuring Scene Information While Capturing Images Using Array Cameras
US	FotoNation Cayman Limited	In Force	14/773,742	9/8/2015	20160057332	2/25/2016	9774789	9/26/2017		Systems and Methods for High Dynamic Range Imaging Using Array Cameras
US	FotoNation Cayman Limited	Pending	15/713,482	9/22/2017						Systems and Methods for High Dynamic Range Imaging Using Array Cameras
US	FotoNation Cayman Limited	In Force	14/145,734	12/31/2013	20140267762	9/18/2014	9497429	11/15/2016		Extended Color Processing on Pelican Array Cameras

US	FotoNation Cayman Limited	Pending	15/287,626	10/6/2016	2017009946 5	4/6/2017			Extended Color Processing on Pelican Array Cameras
US	FotoNation Cayman Limited	In Force	14/216,968	3/17/2014	2014-0267633	9/18/2014	9438888	9/6/2016	Systems and Methods for Stereo Imaging with Camera Arrays
US	FotoNation Cayman Limited	Pending	14/705,885	5/6/2015	2015024501 3	8/27/2015			Systems and Methods for Estimating Depth Using Stereo Array Cameras
US	FotoNation Cayman Limited	In Force	14/705,903	5/6/2015	2015023732 9	8/20/2015	9602805	3/21/2017	Systems and Methods for Estimating Depth using Ad Hoc Stereo Array Cameras
US	FotoNation Cayman Limited	In Force	14/207,254	3/12/2014	2014026724 3	9/18/2014	9519972	12/13/2016	Systems and Methods for Synthesizing Images from Image Data Captured by an Array Camera Using Restricted Depth of Field Depth Maps in which Depth Estimation Precision Varies
US	FotoNation Cayman Limited	Pending	15/376,529	12/12/2016	2017009424 3	3/30/2017			Systems and Methods for Synthesizing Images from Image Data Captured by an Array Camera Using Restricted Depth of Field Depth Maps in which Depth Estimation Precision Varies
US	FotoNation Cayman Limited	In Force	14/203,308	3/10/2014	2014-0285675	9/25/2014	9124831	9/1/2015	System and Methods for Calibration of an Array Camera
US	FotoNation Cayman Limited	In Force	14/841,694	8/31/2015	2016016305 1	6/9/2016	9741118	8/22/2017	System and Methods for Calibration of an Array Camera
US	FotoNation Cayman Limited	Pending	15/682,064	8/21/2017					System and Methods for Calibration of an Array Camera
US	FotoNation Cayman Limited	In Force	14/213,697	3/14/2014	2014-0267829	9/18/2014	9100586	8/4/2015	Systems and Methods for Photometric Normalization in Array Cameras
US	FotoNation Cayman Limited	Pending	14/814,291	7/30/2015	2016019809 6	7/7/2016	9787911	10/10/2017	Systems and Methods for Photometric Normalization in Array Cameras
US	FotoNation Cayman Limited	In Force	13/802,507	3/13/2013	2014-0267890	9/18/2014	9105784	8/11/2015	Systems and Methods for Controlling Aliasing in Images Captured by an Array Camera for use in Super-Resolution Processing
US	FotoNation Cayman Limited	In Force	14/814,297	7/30/2015	2016019573 3	7/7/2016	9733486	8/15/2017	Systems and Methods for Controlling Aliasing in Images Captured by an Array Camera for use in Super-Resolution Processing
US	FotoNation Cayman Limited	In Force	14/555,279	11/26/2014	2015-0146029	5/28/2015	9426361	8/23/2016	Array Camera Configurations Incorporating Multiple Constituent Array Cameras
US	FotoNation Cayman Limited	In Force	14/555,368	11/26/2014	2015-0146030	5/28/2015	9456134	9/27/2016	Array Camera Configurations Incorporating Constituent Array Cameras and Constituent

US	Limited	Pending	15/274,830		9/23/2016	2017007856 8	3/16/2017		Cameras	Array Camera Configurations Incorporating Constituent Array Cameras and Constituent Cameras
US	FotoNation Cayman Limited	Pending	14/500,979		9/29/2014	2015009190 0	4/2/2015		Systems and Methods for Depth-Assisted Perspective Distortion Correction	
US	FotoNation Cayman Limited	In Force	14/536,537		11/7/2014	2015-0122411	5/7/2015	9185276	11/10/2015	Methods of Manufacturing Array Camera Modules Incorporating Independently Aligned Lens Stacks
US	FotoNation Cayman Limited	In Force	14/536,552		11/7/2014	2015-0124151	5/7/2015	9264592	2/16/2016	Array Camera Modules Incorporating Independently Aligned Lens Stacks
US	FotoNation Cayman Limited	In Force	14/536,554		11/7/2014	2015-0124113	5/7/2015	9426343	8/23/2016	Array Cameras Incorporating Independently Aligned Lens Stacks
US	FotoNation Cayman Limited	Pending	15/242,405		8/19/2016	2017007067 2	3/9/2017		Array Cameras Incorporating Independently Aligned Lens Stacks	
US	FotoNation Cayman Limited	Pending	14/547,048		11/18/2014	2015013834 6	5/21/2015		Systems and Methods for Estimating Depth from Projected Texture using Camera Arrays	
US	FotoNation Cayman Limited	In Force	14/484,154		9/11/2014	2015-0288861	10/8/2015	9247117	1/26/2016	Systems and Methods for Correcting for Warpage of a Sensor Array in an Array Camera Module by Introducing Warpage into a Focal Plane of a Lens Stack Array
US	FotoNation Cayman Limited	Pending	14/642,637		3/9/2015	2015025486 8	9/10/2015		System and Methods for Depth Regularization and Semiautomatic Interactive Matting Using RGB-D Images	
US	FotoNation Cayman Limited	In Force	14/593,369		1/9/2015	2015016179 8	6/11/2015	9633442	4/25/2017	Array cameras including an array camera module augmented with a separate camera
US	FotoNation Cayman Limited	Pending	14/724,447		5/28/2015	20150264337			Autofocus System for a Conventional Camera That Uses Depth Information from an Array Camera	
US	FotoNation Cayman Limited	In Force	14/561,925		12/5/2014	2015-0373261	12/24/2015	9521319	12/13/2016	Array Cameras and Array Camera Modules Including Spectral Filters Disposed Outside of a Constituent Image Sensor
US	FotoNation Cayman Limited	Pending	14/690,346		4/17/2015	2016030908 4	10/20/2016		Systems and Methods for Performing High Speed Video Capture and Depth Estimation Using Array Cameras	
US	FotoNation Cayman Limited	Pending	15/133,186		4/19/2016	2016-0309134	10/20/2016		Multi-Baseline Camera Array System Architecture for Depth Augmentation in VR/AR Applications	
US	FotoNation Cayman Limited	Pending	15/159,076		5/19/2016	2017004846 8	2/16/2017		Imager Arrays Including an M x N Array of Focal Planes in which Different Types of Focal Planes are Distributed Around a Reference	

US	FotoNation Cayman Limited	Pending	15/048,369		2/19/2016	20160316140	10/27/2016				Focal Plane	Systems and Methods for Controlling Aliasing in Images Captured by an Array Camera for use in Super Resolution Processing Using Pixel Apertures
US	FotoNation Cayman Limited	In Force	13/631,731		9/28/2012	2013-0077880	3/28/2013	9129183	9/8/2015			Systems and Methods For Encoding Light Field Image Files
US	FotoNation Cayman Limited	In Force	13/631,736		9/28/2012	2013-0077882		8542933	9/24/2013			Systems and Methods for Decoding Light Field Image Files
US	FotoNation Cayman Limited	In Force	13/955,411		7/31/2013	2013-0315494	11/28/2013	8831367	9/9/2014			Systems and Methods for Decoding Light Field Image Files
US	FotoNation Cayman Limited	In Force	14/477,374		9/4/2014	2014-0369615	12/18/2014	9036931	5/19/2015			Systems and Methods for Decoding Structured Light Field Image Files
US	FotoNation Cayman Limited	In Force	14/477,396		9/4/2014	2014-0369612	12/18/2014	9036928	5/19/2015			Systems and Methods for Encoding Structured Light Field Image Files
US	FotoNation Cayman Limited	In Force	14/481,241		9/9/2014	2014-0376825	12/25/2014	9031335	5/12/2015			Systems and Methods for Encoding Light Field Image Files Having Depth and Confidence Maps
US	FotoNation Cayman Limited	In Force	14/481,270		9/9/2014	2015-0003753	1/1/2015	9031342	5/12/2015			Systems and Methods For Encoding Refocusable Light Field Image Files
US	FotoNation Cayman Limited	In Force	14/481,291		9/9/2014	2014-0376826	12/25/2014	9025894	5/5/2015			Systems and Methods for Decoding Light Field Image Files Having Depth Confidence Maps
US	FotoNation Cayman Limited	In Force	14/481,313		9/9/2014	2015-0003752	1/1/2015	9025895	5/5/2015			Systems and Methods for Decoding Refocusable Light Field Image Files
US	FotoNation Cayman Limited	In Force	14/504,684		10/2/2014	2015-0055884	2/26/2015	9031343	5/12/2015			Systems and Methods for Encoding Light Field Image Files Having a Depth Map
US	FotoNation Cayman Limited	In Force	14/504,687		10/2/2014	2015-0015669	1/15/2015	9042667	5/26/2015			Systems and Methods for Decoding Light Field Image Files Using a Depth Map
US	FotoNation Cayman Limited	In Force	14/667,492		3/24/2015	2015-0199841	7/16/2015	9536166	1/3/2017			Systems and Methods for Decoding Image Files Containing Depth Maps Stored as Metadata
US	FotoNation Cayman Limited	Pending	14/667,495		3/24/2015	20150199793	7/16/2015					Systems and Methods For Encoding Light Field Image Files
US	FotoNation Cayman Limited	Pending	14/667,503		3/24/2015	20150199794	7/16/2015	9779319	10/3/2017			Systems and methods for encoding image files containing depth maps stored as metadata

US	FotoNation Cayman Limited	Pending	15/396,024	12/30/2016	20170178363	6/22/2017			Systems and Methods for Decoding Image Files Containing Depth Maps Stored as Metadata
US	FotoNation Cayman Limited	Pending	14/876,024	10/6/2015	20160255333	9/1/2016			Generating Images from Light Fields Utilizing Virtual Viewpoints
US	FotoNation Cayman Limited	Pending	14/933,871	11/5/2015	20160165134	6/9/2016			Feature Based High Resolution Motion Estimation from Low Resolution Images Captured Using an Array Source
US	FotoNation Cayman Limited	In Force	15/004,759	1/22/2016	20160266284	9/15/2016	9766380	9/19/2017	Systems and Methods for Manufacturing Camera Modules Using Active Alignment of Lens Stack Arrays and Sensors
US	FotoNation Cayman Limited	Pending	15/707,747	9/18/2017					Systems and Methods for Manufacturing Camera Modules Using Active Alignment of Lens Stack Arrays and Sensors
US	FotoNation Cayman Limited	Pending	15/515,489	9/29/2015	20170244960	8/24/2017			Systems and Methods for Dynamic Calibration of Array Cameras
US	FotoNation Cayman Limited	Pending	15/682,295	8/21/2017					Systems and Methods for Hybrid Depth Regularization
WO	FotoNation Cayman Limited	Pending	PCT/US2015/026545	4/17/2015	2016/167814	10/21/2016			Systems and Methods for Performing High Speed Video Capture and Depth Estimation Using Array Cameras
WO	FotoNation Cayman Limited	Pending	PCT/US2016/028317	4/19/2016	2016/172125	10/27/2016			Multi-Baseline Camera Array System Architectures for Depth Augmentation in VR/AR Applications
WO	FotoNation Cayman Limited	Pending	PCT/US2017/051637	9/14/2017					Optical Systems for Cameras Incorporating Lens Elements Formed Separately and Subsequently Bonded to Low CTE Substrates