

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT8369423

|                              |                |
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| <b>SUBMISSION TYPE:</b>      | NEW ASSIGNMENT |
| <b>NATURE OF CONVEYANCE:</b> | ASSIGNMENT     |
| <b>SEQUENCE:</b>             | 3              |

## CONVEYING PARTY DATA

| Name                      | Execution Date |
|---------------------------|----------------|
| XPERI HOLDING CORPORATION | 09/26/2022     |

## RECEIVING PARTY DATA

|                        |                      |
|------------------------|----------------------|
| <b>Name:</b>           | ADEIA IMAGING LLC    |
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| <b>City:</b>           | SAN JOSE             |
| <b>State/Country:</b>  | CALIFORNIA           |
| <b>Postal Code:</b>    | 95134                |

## PROPERTY NUMBERS Total: 11

| Property Type              | Number   |
|----------------------------|----------|
| <b>Application Number:</b> | 17704822 |
| <b>Patent Number:</b>      | 11070723 |
| <b>Patent Number:</b>      | 10122919 |
| <b>Patent Number:</b>      | 9736370  |
| <b>Patent Number:</b>      | 10769435 |
| <b>Patent Number:</b>      | 10452910 |
| <b>Patent Number:</b>      | 9239957  |
| <b>Patent Number:</b>      | 10467469 |
| <b>Patent Number:</b>      | 11288504 |
| <b>Patent Number:</b>      | 10176377 |
| <b>Patent Number:</b>      | 10482618 |

## CORRESPONDENCE DATA

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PATENT

|                                                     |                     |
|-----------------------------------------------------|---------------------|
| <b>Address Line 4:</b> LONG BEACH, CALIFORNIA 90806 |                     |
| <b>ATTORNEY DOCKET NUMBER:</b>                      | P16-08419.US.CON2 3 |
| <b>NAME OF SUBMITTER:</b>                           | KATRINA LEE         |
| <b>SIGNATURE:</b>                                   | /Katrina Lee/       |
| <b>DATE SIGNED:</b>                                 | 01/08/2024          |

**Total Attachments: 28**

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## DEED OF ASSIGNMENT

THIS DEED OF ASSIGNMENT (“**Assignment**”), EFFECTIVE AS OF August 3, 2022 IS MADE BY AND BETWEEN

Xperi Holding Corporation (hereinafter “**ASSIGNOR**”), a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, CA 95134

AND

Adeia Imaging LLC (formerly known as DOC MEMS Holding LLC) (hereinafter “**ASSIGNEE**”), a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, CA 95134

WHEREAS:

A **ASSIGNOR** is the sole owner in respect of the patents and patent applications listed in the attached Appendix (hereinafter “the **PATENTS**”); and

B **ASSIGNEE** is desirous of acquiring all of the worldwide right, title and interest in and to the **PATENTS**.

NOW, THEREFORE, for good and valuable consideration, by **ASSIGNEE** to **ASSIGNOR**, receipt of which is hereby acknowledged, **ASSIGNOR** has assigned and transferred, and does hereby assign and transfer to **ASSIGNEE** all of the worldwide right, title and interest in (i) the **PATENTS**, including all rights of priority; (ii) all reissues, divisionals, continuations, continuations-in-part, extensions, renewals, and reexaminations and foreign counterparts thereof, and other patents, patent applications, certificates of invention other governmental grants, including statutory invention registrations resulting from the **PATENTS**; (iii) all items in any of the foregoing categories, whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like, (iv) all rights to apply in any or all countries of the world for patents, certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any item in any of the foregoing categories, including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding, (v) all worldwide legal rights, whether or not filed, perfected, registered or recorded, that may exist under the laws of any jurisdiction to and under such **PATENTS**, including the right and power to assert, defend and recover title to and collect damages for any past, present or future infringement, misappropriation, impairment or unauthorized use of the **PATENTS**, the right and power to exclude others from practicing the **PATENTS**, and the right and power to seek temporary restraining orders, preliminary and permanent injunctions and other equitable relief for infringement or misappropriation of the **PATENTS** and (vi) all claims for royalties and other payments, accounting and information, and other secondary claims arising out of the past and current infringement, the same to be held and enjoyed by **ASSIGNEE** for its own use and enjoyment, and for the use and enjoyment of its successors, assigns and other legal representatives, to the end of the term or terms of said **PATENTS** granted or reissued or reexamined as fully and entirely as the same would have been held and enjoyed by **ASSIGNOR**, if this assignment had not been made. **ASSIGNOR** also hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents or certificates of invention which may be granted upon any of the **PATENTS** in the name of **ASSIGNEE** as the assignee to the entire interest therein.

IN WITNESS WHEREOF, **ASSIGNOR** has caused these presents to be signed by its duly appointed officer having full authority to convey its property.

And if the issue date and/or patent number of any of the **PATENTS** is unknown to **ASSIGNOR** and **ASSIGNEE** at the time this Assignment is executed, **ASSIGNOR** does hereby authorize its attorneys to insert on this Assignment the issue date and patent number of said any patent when known.

**ASSIGNOR** hereby declares that **ASSIGNEE** may take the steps for recordal of this assignment in the sole name of **ASSIGNEE**.

**ASSIGNOR** hereby undertakes that it shall, without further consideration, but at the expense of **BUYER**, execute all documents and do all such acts and things as **BUYER** may in its absolute discretion consider necessary or desirable to enable Letters Patent or any other form of protection to be issued in respect of any of said **PATENTS** and the inventions disclosed therein in any part



## APPENDIX

### Listed Transferred Assets

[See attached]

| Xperi Docket #   | Country Code | Patent Status | Application #     | Filing Date | Publication #  | Publication Date | Patent #       | Grant Date | Title                                                                                      |
|------------------|--------------|---------------|-------------------|-------------|----------------|------------------|----------------|------------|--------------------------------------------------------------------------------------------|
| 10002-0101-DE-01 | DE           | In Force      | 04763763.2        | 8/3/2004    | 1654865        | 5/10/2006        | 602004035426.0 | 11/23/2011 | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-EP-02 | EP           | Lapsed        | 04763763.2        | 8/3/2004    | 1654865A1      | 5/10/2006        | EP1654865B1    | 11/23/2011 | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-EP-03 | EP           | Lapsed        | 05750288.2        | 6/1/2005    | 1782618        | 5/9/2007         |                |            | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-EP-01 | EP           | Lapsed        | 10175879.5        | 9/8/2010    | 2264997        | 12/22/2010       |                |            | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-FR-01 | FR           | In Force      | 04763763.2        | 8/3/2004    | 1654865        | 5/10/2006        | 1654865        | 11/23/2011 | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-GB-01 | GB           | In Force      | 04763763.2        | 8/3/2004    | 1654865        | 5/10/2006        | 1654865        | 11/23/2011 | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-IE-01 | IE           | Lapsed        | 52005/0040        | 1/26/2005   | 20050040       | 2/22/2006        | 584150         | 2/22/2006  | RED EYE FILTER METHOD AND APPARATUS USING PRE-ACQUISITION INFORMATION                      |
| 10002-0101-JP-02 | JP           | In Force      | 2006-522314       | 8/3/2004    | 2007-503030    | 2/15/2007        | 4709147        | 3/25/2011  | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 10002-0101-JP-01 | JP           | In Force      | 2007-526252       | 6/1/2005    | 2008-510399    | 4/3/2008         | 4571190        | 8/20/2010  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-01 | US           | Lapsed        | 08/947,603        | 10/9/1997   |                |                  | 6,407,777      | 6/18/2002  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-02 | US           | Lapsed        | 10/170,511        | 6/12/2002   |                |                  | 7,042,505      | 5/9/2006   | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-03 | US           | Lapsed        | 10/635,862        | 8/5/2002    | 20040223063    | 11/11/2004       | 7,630,006      | 12/8/2009  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-04 | US           | Lapsed        | 10/772,767        | 2/14/2004   |                |                  | 7,352,394      | 4/1/2008   | IMAGE MODIFICATION BASED ON RED-EYE FILTER ANALYSIS                                        |
| 10002-0101-US-05 | US           | Lapsed        | 10/919,226        | 8/16/2004   | 20050041121    | 2/24/2005        | 7,738,015      | 6/15/2010  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-06 | US           | Lapsed        | 11/379,346        | 4/19/2006   |                |                  | 7,619,665      | 11/17/2009 | RED EYE FILTER FOR IN-CAMERA DIGITAL IMAGE PROCESSING WITHIN A FACE OF AN ACQUIRED SUBJECT |
| 10002-0101-US-07 | US           | Lapsed        | 11/690,834        | 3/25/2007   | 20070263104    | 11/15/2007       | 7,852,384      | 12/14/2010 | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-08 | US           | Lapsed        | 11/769,206        | 6/27/2007   | 20080002060    | 1/3/2008         | 7,474,341      | 1/6/2009   | PORTABLE DIGITAL CAMERA WITH RED EYE FILTER                                                |
| 10002-0101-US-09 | US           | Lapsed        | 12/035,416        | 2/21/2008   | 20080186389    | 8/7/2008         |                |            | IMAGE MODIFICATION BASED ON RED-EYE FILTER ANALYSIS                                        |
| 10002-0101-US-10 | US           | Lapsed        | 61/094,030        | 9/3/2008    |                |                  |                |            | OPTIMIZED PERFORMANCE AND PERFORMANCE FOR RED-EYE FILTER METHOD AND APPARATUS              |
| 10002-0101-US-11 | US           | Lapsed        | 61/094,034        | 9/3/2008    |                |                  |                |            | OPTIMIZED PERFORMANCE AND PERFORMANCE FOR RED-EYE FILTER METHOD AND APPARATUS              |
| 10002-0101-US-12 | US           | Lapsed        | 12/192,335        | 8/15/2008   | 20080298679    | 12/4/2008        | 7,847,840      | 12/7/2010  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-13 | US           | Lapsed        | 12/192,897        | 8/15/2008   | 20080316341    | 12/25/2008       | 7,804,531      | 9/28/2010  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-14 | US           | Lapsed        | 12/194,148        | 8/19/2008   | 20080027520    | 1/29/2009        | 7,746,385      | 6/29/2010  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-15 | US           | Lapsed        | 12/119,614        | 5/13/2008   | 20080211937    | 9/4/2008         | 7,787,022      | 8/31/2010  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-16 | US           | Lapsed        | 12/187,763        | 8/7/2008    | 20080292183    | 11/27/2008       | 7,847,839      | 12/7/2010  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-17 | US           | Lapsed        | 12/551,282        | 8/31/2009   | 20100053362    | 3/4/2010         | 9,412,007      | 8/9/2016   | PARTIAL FACE DETECTOR RED-EYE FILTER METHOD AND APPARATUS                                  |
| 10002-0101-US-18 | US           | Lapsed        | 12/551,312        | 8/31/2009   | 20100053367    | 3/4/2010         |                |            | PARTIAL FACE TRACKER FOR RED-EYE FILTER METHOD AND APPARATUS                               |
| 10002-0101-US-19 | US           | Lapsed        | 12/551,335        | 8/31/2009   | 20100053368    | 3/4/2010         | 8,520,093      | 8/27/2013  | FACE TRACKER AND PARTIAL FACE TRACKER FOR RED-EYE FILTER METHOD AND APPARATUS              |
| 10002-0101-US-20 | US           | Lapsed        | 12/611,387        | 11/3/2009   |                |                  | 7,916,190      | 3/29/2011  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-21 | US           | Lapsed        | 12/613,457        | 11/5/2009   | 20110058069    | 3/10/2011        | 8,537,251      | 9/17/2013  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-22 | US           | Lapsed        | 12/707,531        | 2/17/2010   | 20100295959    | 11/25/2010       | 7,757,828      | 7/5/2011   | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-23 | US           | Lapsed        | 12/815,396        | 6/14/2010   | 20110080499    | 4/7/2011         | 8,203,621      | 6/19/2012  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 10002-0101-US-24 | US           | Lapsed        | 12/889,215        | 9/23/2010   | 20110058071    | 3/10/2011        |                |            | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 10002-0101-US-25 | US           | Lapsed        | 12/941,995        | 11/8/2010   | 20110102643    | 5/5/2011         |                |            | PARTIAL FACE DETECTOR RED-EYE FILTER METHOD AND APPARATUS                                  |
| 10002-0101-US-26 | US           | Lapsed        | 12/958,130        | 12/1/2010   | 20110134271    | 6/9/2011         |                |            | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-27     | US           | Lapsed        | 12/957,633        | 12/1/2010   | 20110074975    | 3/31/2011        | 8,379,117      | 2/19/2013  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-28     | US           | Lapsed        | 12/957,594        | 12/1/2010   | 20110069186    | 3/24/2011        | 8,493,478      | 7/23/2013  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-29     | US           | Lapsed        | 13/026,303        | 2/14/2011   | 20110134287    | 6/9/2011         | 8,279,301      | 10/2/2012  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 2-0101-US-30     | US           | Lapsed        | 13/041,392        | 3/5/2011    |                |                  | 8,264,575      | 9/11/2012  | RED EYE FILTER METHOD AND APPARATUS                                                        |
| 2-0101-US-31     | US           | Lapsed        | 13/735,757        | 9/19/2011   | 20120038788    | 2/16/2012        |                |            | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-32     | US           | Lapsed        | 13/569,171        | 8/7/2012    | 20130033624    | 2/7/2013         | 8,493,466      | 7/23/2013  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 2-0101-US-33     | US           | Lapsed        | 13/656,738        | 10/22/2012  | 20130044243    | 2/21/2013        | 8,698,916      | 4/15/2014  | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 2-0101-US-34     | US           | Lapsed        | 13/769,812        | 2/18/2013   | 20130155298    | 6/20/2013        | 8,648,938      | 2/11/2014  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-35     | US           | Lapsed        | 13/771,001        | 2/19/2013   | 20130162869    | 6/27/2013        | 9,025,054      | 5/5/2015   | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-36     | US           | Lapsed        | 13/787,783        | 3/6/2013    | 20130188077    | 7/25/2013        | 8,957,993      | 2/17/2015  | DETECTING RED EYE FILTER AND APPARATUS USING META-DATA                                     |
| 2-0101-US-37     | US           | Lapsed        | 14/010,466        | 8/26/2013   |                |                  |                |            | FACE TRACKER AND PARTIAL FACE ANALYZER FOR RED-EYE FILTER METHOD AND APPARATUS             |
| 2-0101-US-38     | US           | Lapsed        | 14/218,369        | 3/18/2014   | 20140198238    | 7/17/2014        | 8,885,074      | 11/11/2014 | RED-EYE FILTER METHOD AND APPARATUS                                                        |
| 2-0101-US-39     | US           | Lapsed        | 15/232,538        | 8/9/2016    | 20170070649    | 3/9/2017         |                |            | PARTIAL FACE DETECTOR RED-EYE FILTER METHOD AND APPARATUS                                  |
| 2-0101-WO-01     | WO           | Lapsed        | PC1/EP2004/008706 | 8/3/2004    | WO2005015896A1 | 2/17/2005        |                |            | A METHOD AND SYSTEM OF FILTERING A RED-EYE PHENOMENON FROM A DIGITAL IMAGE                 |
| 2-0101-WO-02     | WO           | Lapsed        | PC1/EP2009/006361 | 9/2/2009    | WO2010025908A1 | 3/11/2010        |                |            | PARTIAL FACE DETECTOR RED-EYE FILTER METHOD AND APPARATUS                                  |
| 2-0101-WO-03     | WO           | Lapsed        | PC1/EP2005/005907 | 8/16/2004   | WO2006018056A1 | 2/23/2006        |                |            | METHOD AND APPARATUS FOR DETECTING AND CORRECTING RED-EYE EFFECT                           |
| 2-0102-JP-01     | JP           | Lapsed        | 2009-534560       | 10/31/2006  | 20100508571    | 3/18/2010        | 4865038        | 11/18/2011 | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                    |
| 2-0102-US-01     | US           | In Force      | 10/608,810        | 6/26/2003   | 20060204055    | 4/29/2009        | 7,574,016      | 8/11/2009  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                  |
| 2-0102-US-02     | US           | In Force      | 11/554,539        | 10/30/2006  | 20070110305    | 5/17/2007        | 7,844,076      | 11/30/2010 | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                    |
| 2-0102-US-03     | US           | In Force      | 12/198,533        | 8/26/2008   | 20100054533    | 3/4/2010         | 8,985,453      | 3/24/2015  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                  |
| 2-0102-US-04     | US           | In Force      | 12/198,621        | 8/26/2008   | 20100054549    | 3/4/2010         | 8,498,452      | 7/30/2013  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                  |
| 2-0102-US-05     | US           | In Force      | 12/206,617        | 9/8/2008    | 20090002514    | 1/1/2009         | 8,005,265      | 8/23/2011  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                  |

PATENT

REEL: 066237 FRAME: 0380

| Xperi Docket #    | Country Code | Patent Status | Application #     | Filing Date | Publication #  | Publication Date | Patent #         | Grant Date | Title                                                                                                         |
|-------------------|--------------|---------------|-------------------|-------------|----------------|------------------|------------------|------------|---------------------------------------------------------------------------------------------------------------|
| IO0002-0102-US-06 | US           | In Force      | 12/262,024        | 10/30/2008  | 20090087042    | 4/2/2009         | 7,809,162        | 10/5/2010  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-07 | US           | In Force      | 12/262,037        | 10/30/2008  | 20090087030    | 4/2/2009         | 7,809,162        | 10/5/2010  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-08 | US           | Lapsed        | 12/262,061        | 10/30/2008  | 20090052749    | 2/26/2009        | 7,848,549        | 12/15/2009 | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-09 | US           | In Force      | 12/262,071        | 10/30/2008  | 20090052750    | 2/26/2009        | 7,860,274        | 12/15/2009 | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-10 | US           | In Force      | 12/637,418        | 12/14/2009  | 20100092039    | 4/15/2010        | 7,855,043        | 12/14/2010 | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-11 | US           | In Force      | 12/881,182        | 9/14/2010   | 20110002545    | 1/6/2011         | 8,055,090        | 11/8/2011  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-12 | US           | In Force      | 12/890,185        | 9/24/2010   | 20110013043    | 1/20/2011        | 8,121,430        | 2/21/2012  | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-13 | US           | In Force      | 12/960,479        | 12/14/2010  | 20110096187    | 4/28/2011        | 8,224,108        | 7/17/2012  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-14 | US           | In Force      | 12/959,368        | 12/3/2010   | 20110075894    | 3/31/2011        | 8,131,016        | 3/6/2012   | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-15 | US           | In Force      | 12/959,376        | 12/3/2010   | 20110075895    | 3/31/2011        | 8,126,208        | 2/28/2012  | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-16 | US           | In Force      | 13/244,682        | 9/25/2011   | 20120120304    | 5/17/2012        | 8,369,586        | 2/5/2013   | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-17 | US           | In Force      | 13/244,671        | 9/25/2011   | 20120229694    | 9/13/2012        | 8,331,715        | 12/11/2012 | DIGITAL IMAGE PROCESSING USING FACE DETECTION INFORMATION                                                     |
| IO0002-0102-US-18 | US           | In Force      | 13/748,462        | 1/23/2013   | 20130236052    | 9/12/2013        | 8,908,932        | 12/9/2014  | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-19 | US           | Lapsed        | 13/968,406        | 8/15/2013   |                |                  |                  |            | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-20 | US           | In Force      | 14/563,972        | 12/8/2014   | 20160014333    | 1/14/2016        | 9,516,217        | 12/6/2016  | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-21 | US           | In Force      | 15/369,698        | 12/5/2016   | 20170085785    | 3/23/2017        | 9,712,743        | 7/18/2017  | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-US-22 | US           | Lapsed        | 15/649,295        | 7/13/2017   | 20170372108    | 12/28/2017       |                  |            | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0102-WO-01 | WO           | Lapsed        | PCT/US2006/060392 | 10/31/2006  | WO2008054422A2 | 5/8/2008         |                  |            | DIGITAL IMAGE PROCESSING USING FACE DETECTION AND SKIN TONE INFORMATION                                       |
| IO0002-0103-US-01 | US           | In Force      | 10/764,339        | 1/22/2004   |                |                  | 7,551,755        | 6/23/2009  | CLASSIFICATION AND ORGANIZATION OF CONSUMER DIGITAL IMAGES USING WORKFLOW, AND FACE DETECTION AND RECOGNITION |
| IO0002-0106-DE-01 | DE           | In Force      | 05792584.4        | 10/11/2005  | 1807805A1      | 7/18/2007        | DE602005039054.5 | 4/10/2013  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-EP-01 | EP           | Lapsed        | 05792584.4        | 10/11/2005  | 1807805        | 7/18/2007        | 1807805          | 4/10/2013  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-FR-01 | FR           | In Force      | 05792584.4        | 10/11/2005  | 1807805A1      | 7/18/2007        | EP1807805B1      | 4/10/2013  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-GB-01 | GB           | In Force      | 05792584.4        | 10/11/2005  | 1807805A1      | 7/18/2007        | EP1807805B1      | 4/10/2013  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-IE-01 | IE           | Lapsed        | 52005/0096        | 2/18/2005   | 20050096       | 2/8/2006         | 584135           | 2/8/2006   | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-JP-01 | JP           | In Force      | 2007-538293       | 10/11/2005  | 2008-518334    | 5/29/2008        | 4856086          | 11/4/2011  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-US-01 | US           | In Force      | 10/976,336        | 10/28/2004  | 20060093212    | 5/4/2006         | 7,536,036        | 5/19/2009  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-US-02 | US           | In Force      | 11/123,971        | 5/6/2005    | 20060093213    | 5/4/2006         | 7,436,998        | 10/14/2008 | QUALITY PRE AND POST FILTERING                                                                                |
| IO0002-0106-US-03 | US           | Lapsed        | 11/182,718        | 7/15/2005   | 20060093238    | 5/4/2006         |                  |            | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE USING FACE RECOGNITION                |
| IO0002-0106-US-04 | US           | In Force      | 11/233,513        | 9/21/2005   | 20060120599    | 6/8/2006         | 7,587,085        | 9/8/2009   | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-US-05 | US           | Lapsed        | 61/094,036        | 9/3/2008    |                |                  |                  |            | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-US-06 | US           | In Force      | 12/543,405        | 8/18/2009   | 20090304278    | 12/10/2009       | 7,953,250        | 5/31/2011  | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| IO0002-0106-US-07 | US           | In Force      | 12/551,258        | 8/31/2009   | 20100054592    | 3/4/2010         | 8,254,674        | 8/28/2012  | ANALYZING PARTIAL FACE REGIONS FOR RED-EYE DETECTION IN ACQUIRED DIGITAL IMAGES                               |
| IO0002-0106-US-08 | US           | In Force      | 12/834,901        | 7/13/2010   | 20110063465    | 3/17/2011        | 8,036,460        | 10/11/2011 | ANALYZING PARTIAL FACE REGIONS FOR RED-EYE DETECTION IN ACQUIRED DIGITAL IMAGES                               |
| 2-0106-US-09      | US           | Lapsed        | 13/103,085        | 5/8/2011    |                |                  |                  |            | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| 2-0106-US-10      | US           | In Force      | 13/244,658        | 9/25/2011   | 20120014600    | 1/19/2012        | 8,265,388        | 9/11/2012  | ANALYZING PARTIAL FACE REGIONS FOR RED-EYE DETECTION IN ACQUIRED DIGITAL IMAGES                               |
| 2-0106-WO-01      | WO           | Lapsed        | PCT/EP2005/011010 | 10/11/2005  | WO2006045441A1 | 5/4/2006         |                  |            | METHOD AND APPARATUS FOR RED-EYE DETECTION IN AN ACQUIRED DIGITAL IMAGE                                       |
| 2-0109-DE-01      | DE           | In Force      | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 602005004299.7   | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-EP-01      | EP           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322A1      | 5/2/2007         | EP1779322B1      | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-FI-01      | FI           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 1779322          | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-FR-01      | FR           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 1779322          | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-GB-01      | GB           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 1779322          | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-IE-01      | IE           | Lapsed        | 52005/0090        | 2/18/2005   | IE20050090A2   | 2/22/2006        | 584152           | 2/22/2006  | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-IE-02      | IE           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 1779322          | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-JP-01      | JP           | In Force      | 2007-539482       | 10/11/2005  | JP2008-520117A | 6/12/2008        | 4527152          | 6/11/2010  | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-SE-01      | SE           | Lapsed        | 05806351.2        | 10/11/2005  | 1779322        | 5/2/2007         | 1779322          | 1/9/2008   | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                 |
| 2-0109-US-01      | US           | Lapsed        | 10/985,657        | 11/10/2004  | 20060098990    | 5/11/2006        | 7,636,486        | 12/22/2009 | METHOD OF DETERMINING PSF USING MULTIPLE INSTANCES OF A NOMINALLY SIMILAR SCENE                               |

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| IO002-0109-US-02 | US           | In Force      | 11/566.180        | 12/11/2006  | 20070058073      | 3/15/2007        | 7,660,478        | 2/9/2010   | METHOD OF DETERMINING PSF USING MULTIPLE INSTANCES OF A NOMINALLY SIMILAR SCENE                                                                    |
| IO002-0109-US-03 | US           | Lapsed        | 12/702.092        | 2/8/2010    | 20100201826      | 8/12/2010        | 8,494,299        | 7/23/2013  | METHOD OF DETERMINING PSF USING MULTIPLE INSTANCES OF A NOMINALLY SIMILAR SCENE                                                                    |
| IO002-0109-US-04 | US           | In Force      | 12/956.904        | 11/30/2010  | 20110069206      | 3/24/2011        | 8,243,996        | 8/14/2012  | METHOD OF DETERMINING PSF USING MULTIPLE INSTANCES OF A NOMINALLY SIMILAR SCENE                                                                    |
| IO002-0109-US-05 | US           | In Force      | 12/956.904        | 11/30/2010  | 20110069206      | 3/24/2011        | 8,243,996        | 8/14/2012  | A DIGITAL IMAGE ACQUISITION SYSTEM HAVING MEANS FOR DETERMINING A CAMERA MOTION BLUR FUNCTION                                                      |
| IO002-0109-WO-01 | WO           | Lapsed        | PC1/EP2005/011011 | 11/10/2004  | WO2006050782A1   | 5/18/2006        |                  |            | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-CN-01 | CN           | In Force      | 200680034223.X    | 8/21/2006   | 101416219        | 4/22/2009        | ZL200680054223.X | 6/12/2013  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-DE-01 | DE           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 602006046128.3   | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-DK-01 | DK           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-EP-01 | EP           | Lapsed        | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-FI-01 | FI           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-FR-01 | FR           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-GB-01 | GB           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-IE-01 | IE           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-JP-01 | JP           | In Force      | 2008-554602       | 8/21/2006   | JP2009527156A    | 7/23/2009        | 5004972          | 6/1/2012   | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-NL-01 | NL           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-SE-01 | SE           | In Force      | 06791.605.6       | 8/21/2006   | 1984892          | 10/29/2008       | 1984892          | 7/29/2015  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-US-01 | US           | Lapsed        | 60/773.714        | 2/14/2006   |                  |                  |                  |            | DETECTION AND CORRECTION OF NON-RED FLASH EYE DEFECTS, DIGITAL IMAGE ACQUISITION DEVICE WITH BUILT IN DUST AND SENSOR MAPPING CAPABILITY, LENS CAP |
| IO002-0119-US-02 | US           | In Force      | 11/573.713        | 8/21/2006   | 20090273685      | 11/5/2009        | 7,868,922        | 1/11/2011  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-US-03 | US           | Lapsed        | 13/004.021        | 1/10/2011   | 20110102628      | 5/5/2011         |                  |            | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0119-WO-01 | WO           | Lapsed        | PC1/EP2006/008229 | 8/21/2006   | WO2007093199A2   | 8/23/2007        |                  |            | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                                                                                               |
| IO002-0121-CN-01 | CN           | Lapsed        | 200890000049.5    | 3/5/2008    | ZL200890000049.5 | 4/6/2011         | 201788344        | 4/6/2011   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-DE-01 | DE           | In Force      | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-EP-01 | EP           | Lapsed        | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-EP-02 | EP           | Lapsed        | 08731.403.5       | 3/5/2008    |                  |                  |                  |            | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-FI-01 | FI           | In Force      | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-FR-01 | FR           | In Force      | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-GB-01 | GB           | In Force      | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-IE-01 | IE           | Lapsed        | 52006/0611        | 8/16/2006   | 20060611         | 11/1/2006        | 584399           | 11/1/2006  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-IE-02 | IE           | In Force      | 06791.667.6       | 8/25/2006   | 1810246          | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-JP-01 | JP           | Lapsed        | 2008-540468       | 8/25/2006   | JP2009-519503A   | 5/27/2009        | 4257688          | 2/27/2009  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-JP-02 | JP           | Lapsed        | 2009-557850       | 3/5/2008    | JP2010520727A    | 6/10/2010        |                  |            | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-KR-01 | KR           | In Force      | 10-2009-0720721   | 3/5/2008    | 10-2009-0122275  | 11/26/2009       | 1049188          | 7/7/2011   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-SE-01 | SE           | In Force      | 06791.667.6       | 8/25/2006   | 1810246A1        | 7/25/2007        | 1810246          | 8/6/2008   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| IO002-0121-US-01 | US           | In Force      | 11/282.954        | 11/18/2005  | 20070116379      | 5/24/2007        | 7,689,009        | 3/30/2010  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-02     | US           | Lapsed        | 11/462.035        | 8/2/2006    | 20080240555      | 9/25/2008        | 7,920,723        | 4/5/2011   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-03     | US           | In Force      | 12/042.335        | 3/5/2008    | 20080232711      | 9/25/2008        | 7,970,182        | 6/28/2011  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-04     | US           | In Force      | 12/640.521        | 12/17/2009  | 20100182454      | 7/22/2010        | 7,869,628        | 1/11/2011  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-05     | US           | In Force      | 12/952.162        | 11/22/2010  | 20110069182      | 3/24/2011        | 7,970,183        | 6/28/2011  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-06     | US           | In Force      | 12/952.167        | 11/22/2010  | 20110090363      | 4/21/2011        | 7,970,184        | 6/28/2011  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-07     | US           | Lapsed        | 12/952.171        | 11/22/2010  | 20110069208      | 3/24/2011        | 7,953,252        | 5/31/2011  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-08     | US           | Lapsed        | 12/960.492        | 12/4/2010   | 20110115949      | 5/19/2011        | 8,160,308        | 4/17/2012  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-09     | US           | Lapsed        | 13/079.012        | 4/3/2011    | 20110262035      | 10/27/2011       | 8,126,217        | 2/28/2012  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-10     | US           | Lapsed        | 13/079.013        | 4/3/2011    | 20110262034      | 10/27/2011       | 8,175,342        | 5/8/2012   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-11     | US           | Lapsed        | 13/079.810        | 4/4/2011    | 20110262038      | 10/27/2011       | 8,131,021        | 3/6/2012   | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-12     | US           | Lapsed        | 13/103.842        | 5/9/2011    | 20110211095      | 9/4/2011         | 8,180,115        | 5/15/2012  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-13     | US           | In Force      | 13/103.842        | 5/30/2011   | 20110218135      | 9/22/2011        | 8,184,868        | 5/22/2012  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-US-14     | US           | Lapsed        | 13/118.552        | 5/30/2011   | 20110228134      | 9/22/2011        | 8,126,218        | 2/28/2012  | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-WO-01     | WO           | Lapsed        | PC1/EP2006/008358 | 8/25/2006   | WO2007005764A1   | 5/24/2007        |                  |            | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0121-WO-02     | WO           | Lapsed        | PC1/US2008/053864 | 3/5/2008    | 2008109644       | 9/12/2008        |                  |            | TWO STAGE DETECTION FOR PHOTOGRAPHIC EYE ARTIFACTS                                                                                                 |
| 2-0122-DE-01     | DE           | In Force      | 06753948.6        | 5/29/2006   | 1800259          | 6/27/2007        | 602006000400.1   | 1/2/2008   | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-DE-02     | DE           | In Force      | 07024773.9        | 5/29/2006   | 1918872          | 5/7/2008         | 602006008009.3   | 7/22/2009  | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-EP-01     | EP           | Lapsed        | 06753948.6        | 5/29/2006   | 1800259          | 6/27/2007        | EP180025981      | 1/2/2008   | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-EP-02     | EP           | Lapsed        | 07024773.9        | 5/29/2006   | 1918872A2        | 7/22/2009        | EP191887281      | 7/22/2009  | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-FI-01     | FI           | In Force      | 06753948.6        | 5/29/2006   | 1800259          | 6/27/2007        | 1800259          | 1/2/2008   | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-FR-01     | FR           | In Force      | 06753948.6        | 5/29/2006   | 1800259          | 6/27/2007        | 1800259          | 1/2/2008   | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |
| 2-0122-FR-02     | FR           | In Force      | 07024773.9        | 5/29/2006   | 1918872          | 5/7/2008         | 1918872          | 7/22/2009  | IMAGE SEGMENTATION METHOD AND SYSTEM                                                                                                               |

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|-------------------|--------------|---------------|-------------------|-------------|----------------|------------------|----------------|------------|---------------------------------------------------------------------------------|
| 10002-01222-GB-01 | GB           | In Force      | 06753948.6        | 5/29/2006   | 1800259        | 6/27/2007        | 1800259        | 7/22/2008  | IMAGE SEGMENTATION METHOD AND SYSTEM                                            |
| 10002-01222-GB-01 | GB           | In Force      | 07024773.9        | 5/29/2006   | 1818872        | 5/7/2008         | 1918872        | 7/22/2009  | IMAGE SEGMENTATION METHOD AND SYSTEM                                            |
| 10002-01222-IE-01 | IE           | In Force      | 06753948.6        | 5/29/2006   | 1800259        | 6/27/2007        | 1800259        | 7/22/2008  | IMAGE SEGMENTATION METHOD AND SYSTEM                                            |
| 10002-01222-IE-02 | IE           | Lapsed        | 520050822         | 12/8/2005   | 20050822       |                  | 584306         | 8/23/2006  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES WITH DIFFERENTIAL EXPOSURE |
| 10002-01222-JP-01 | JP           | Lapsed        | 2008-528358       | 5/29/2006   | JP2009-506688A | 2/12/2009        | 4234195        | 12/19/2008 | CALCULATIONS                                                                    |
| 10002-01222-SE-01 | SE           | In Force      | 06753948.6        | 5/29/2006   | 1800259        | 6/27/2007        | 1800259        | 7/22/2008  | IMAGE SEGMENTATION METHOD AND SYSTEM                                            |
| 10002-01222-US-01 | US           | Lapsed        | 11/217,788        | 8/30/2005   | 20060039690    | 2/23/2006        | 7,606,417      | 10/20/2009 | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES WITH DIFFERENTIAL EXPOSURE |
| 10002-01222-US-02 | US           | Lapsed        | 11/421,027        | 5/30/2006   | 20060285754    | 12/21/2006       | 7,680,342      | 3/16/2010  | INDOOR/OUTDOOR CLASSIFICATION IN DIGITAL IMAGES                                 |
| 10002-01222-US-03 | US           | In Force      | 12/562,833        | 9/18/2009   | 20100008577    | 1/14/2010        | 7,796,816      | 9/14/2010  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES WITH DIFFERENTIAL EXPOSURE |
| 10002-01222-US-04 | US           | In Force      | 12/772,006        | 2/24/2010   | 20100149371    | 6/17/2010        | 7,796,822      | 9/14/2010  | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                            |
| 10002-01222-US-05 | US           | In Force      | 12/881,029        | 9/13/2010   | 20110025859    | 2/3/2011         | 7,957,597      | 6/7/2011   | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES WITH DIFFERENTIAL EXPOSURE |
| 10002-01222-US-06 | US           | In Force      | 12/881,170        | 9/13/2010   | 20100328486    | 12/30/2010       | 7,912,285      | 3/22/2011  | CALCULATIONS                                                                    |
| 10002-01222-US-07 | US           | In Force      | 13/040,275        | 3/4/2011    | 20110157408    | 6/30/2011        | 8,175,385      | 5/8/2012   | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                            |
| 10002-01222-US-08 | US           | In Force      | 13/099,335        | 5/2/2011    | 20110268359    | 11/3/2011        | 8,170,350      | 5/1/2012   | FOREGROUND/BACKGROUND SEGMENTATION IN DIGITAL IMAGES                            |
| 10002-01222-WO-01 | WO           | Lapsed        | PCT/EP2006/005109 | 5/29/2006   | WO2007025578   | 8/3/2007         |                |            | IMAGE SEGMENTATION METHOD AND SYSTEM                                            |
| 10002-0128-DE-01  | DE           | In Force      | 06791655.1        | 8/25/2006   | 1812901        | 5/9/2007         | 602006007094.2 | 6/3/2009   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-EP-01  | EP           | Lapsed        | 06791655.1        | 8/25/2006   | 1812901A1      | 5/9/2007         | EP1812901B1    | 6/3/2009   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-FR-01  | FR           | In Force      | 06791655.1        | 8/25/2006   | 1812901        | 5/9/2007         | 1812901        | 6/3/2009   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-GB-01  | GB           | In Force      | 06791655.1        | 8/25/2006   | 1812901        | 5/9/2007         | 1812901        | 6/3/2009   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-JP-01  | JP           | In Force      | 2008-540467       | 8/25/2006   | JP2009-516441A | 4/16/2009        | 4627557        | 11/19/2010 | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-US-01  | US           | Lapsed        | 11/282,955        | 11/18/2005  | 20070116380    | 5/24/2007        | 7,599,577      | 10/6/2009  | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-US-02  | US           | In Force      | 12/558,859        | 9/14/2009   | 20100040284    | 2/18/2010        | 7,865,036      | 1/4/2011   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-US-03  | US           | In Force      | 12/960,487        | 12/4/2010   | 20110074985    | 3/31/2011        | 8,126,265      | 2/28/2012  | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-US-04  | US           | In Force      | 13/357,548        | 1/24/2012   | 20120120274    | 5/17/2012        | 8,422,780      | 4/16/2013  | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-US-05  | US           | In Force      | 13/658,775        | 10/23/2012  | 20130044236    | 2/21/2013        | 8,823,830      | 9/2/2014   | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0128-WO-01  | WO           | Lapsed        | PCT/EP2006/008342 | 8/25/2006   | WO2007057063A1 | 5/24/2007        |                |            | METHOD AND APPARATUS OF CORRECTING HYBRID FLASH ARTIFACTS IN DIGITAL IMAGES     |
| 10002-0142-CN-01  | CN           | In Force      | 200780013481.8    | 2/13/2007   | 101421748      | 4/29/2009        | 200780013481.8 | 9/4/2013   | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 10002-0142-EP-01  | EP           | Lapsed        | 07756947.3        | 2/13/2007   | 1987475        | 11/5/2008        |                |            | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 10002-0142-IE-01  | IE           | Lapsed        | 520060559         | 7/27/2006   | 20060559       | 11/1/2006        | 584402         | 11/1/2006  | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 10002-0142-JP-01  | JP           | Lapsed        | 2008-555463       | 2/13/2007   | JP2009-527061A | 7/23/2009        | 4643715        | 12/10/2010 | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 10002-0142-US-01  | US           | Lapsed        | 11/674,633        | 2/13/2007   | 20070189606    | 8/16/2007        | 7,336,821      | 2/26/2008  | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 2-0142-US-02      | US           | Lapsed        | 11/841,855        | 8/20/2007   | 20080049970    | 2/28/2008        | 8,184,900      | 5/22/2012  | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 2-0142-WO-01      | WO           | Lapsed        | PCT/US2007/062090 | 2/13/2007   | 2007095553     | 8/23/2007        |                |            | AUTOMATIC DETECTION AND CORRECTION OF NON-RED EYE FLASH DEFECTS                 |
| 2-0143-CN-01      | CN           | In Force      | 200680055962.0    | 8/22/2006   | 101512549      | 8/19/2009        | 1015125498     | 7/4/2012   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-DE-01      | DE           | In Force      | 07764695.8        | 6/18/2007   | 2052349        | 4/29/2009        | 602007002923.6 | 10/21/2009 | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-DE-02      | DE           | In Force      | 06802192.2        | 8/22/2006   | 2052347        | 4/29/2009        | 602006021349.2 | 4/13/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-EP-01      | EP           | Lapsed        | 06802192.2        | 8/22/2006   | 2052347A1      | 4/29/2009        | EP2052347B1    | 4/13/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-EP-02      | EP           | Lapsed        | 07764695.8        | 6/18/2007   | 2052349A1      | 4/29/2009        | EP2052349B1    | 10/21/2009 | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-EP-03      | EP           | Lapsed        | 10163739.5        | 5/25/2010   | 2256666        | 12/1/2010        |                |            | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-FR-01      | FR           | Lapsed        | 07764695.8        | 6/18/2007   | 2052349        | 4/29/2009        | 2052349        | 10/21/2009 | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-FR-02      | FR           | In Force      | 06802192.2        | 8/22/2006   | 2052347A1      | 4/29/2009        | 2052347        | 4/13/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-GB-01      | GB           | Lapsed        | 07764695.8        | 6/18/2007   | 2052349        | 4/29/2009        | 2052349        | 10/21/2009 | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-GB-02      | GB           | In Force      | 06802192.2        | 8/22/2006   | 2052347A1      | 4/29/2009        | 2052347        | 4/13/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-IE-01      | IE           | Lapsed        | 520060826         | 11/15/2006  | 20060826       | 6/27/2007        | 584624         | 6/27/2007  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-IE-02      | IE           | Lapsed        | 06802192.2        | 8/22/2006   | 2052347A1      | 4/29/2009        | 2052347        | 4/13/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-JP-01      | JP           | In Force      | 2009-524590       | 8/22/2006   | JP2010-500687A | 1/7/2010         | 4472781        | 3/12/2010  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-JP-02      | JP           | In Force      | 2009-524084       | 6/18/2007   | JP2010-500836A | 1/7/2010         | 5149293        | 12/7/2012  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-01      | US           | In Force      | 11/464,083        | 8/11/2006   |                |                  | 7,315,631      | 1/1/2008   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-02      | US           | In Force      | 11/753,397        | 5/24/2007   | 20080037838    | 2/14/2008        | 7,403,643      | 7/22/2008  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-03      | US           | In Force      | 11/765,307        | 6/19/2007   | 20080037827    | 2/14/2008        | 7,469,055      | 12/23/2008 | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-04      | US           | In Force      | 11/765,212        | 6/19/2007   | 20080037839    | 2/14/2008        | 7,460,694      | 12/2/2008  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-05      | US           | Lapsed        | 11/766,674        | 6/21/2007   | 20080037840    | 2/14/2008        | 7,460,695      | 12/2/2008  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |
| 2-0143-US-06      | US           | In Force      | 12/063,089        | 6/18/2007   | 20090263022    | 10/22/2009       | 8,055,920      | 11/8/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                   |

**PATENT**

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| 10002-0143-US-07 | US           | In Force      | 12/167,500        | 7/3/2008    | 20080267461        | 8,050,465      | 11/1/2011  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-08 | US           | In Force      | 12/333,221        | 12/11/2008  | 20090208056        | 7,864,990      | 1/4/2011   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-09 | US           | In Force      | 12/983,863        | 1/3/2011    | 20110129121        | 8,270,674      | 9/18/2012  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-10 | US           | In Force      | 13/234,149        | 9/15/2011   | 20120062761        | 8,422,739      | 4/16/2013  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-11 | US           | In Force      | 13/245,738        | 9/26/2011   | 20120070087        | 8,509,498      | 8/13/2013  | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-12 | US           | In Force      | 13/797,983        | 3/12/2013   | 20130195318        | 8,666,124      | 3/4/2014   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-13 | US           | In Force      | 13/797,989        | 3/12/2013   | 20130195319        | 8,744,145      | 6/3/2014   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-US-14 | US           | In Force      | 13/798,011        | 3/12/2013   | 20130195320        | 8,666,125      | 3/4/2014   | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-WO-01 | WO           | Lapsed        | PCT/US2006/032959 | 8/11/2006   | 2008018887         |                |            | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0143-WO-02 | WO           | Lapsed        | PCT/EP2007/005330 | 8/11/2006   | WO2008017343A1     |                |            | REAL-TIME FACE TRACKING IN A DIGITAL IMAGE ACQUISITION DEVICE                                  |
| 10002-0146-CN-01 | CN           | In Force      | 200780015914.3    | 5/3/2007    | 201443791          | 101443791      | 5/30/2012  | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-EP-01 | EP           | Lapsed        | 07797335.2        | 5/3/2007    | 2016530A2          |                |            | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-IE-01 | IE           | Lapsed        | S2006/0564        | 7/28/2006   | IE20060564A2       | S84400         | 11/1/2006  | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-IN-01 | IN           | Lapsed        | 6274/CHENP/2008   | 5/3/2007    |                    |                |            | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-JP-01 | JP           | Lapsed        | 2009-510085       | 5/3/2007    | JP2009-536417A     | 5087614        | 9/14/2012  | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-KR-01 | KR           | In Force      | 10-2008-7029351   | 5/3/2007    | KR10-2009-0007779A | 1266817        | 5/16/2013  | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-KR-02 | KR           | Lapsed        | 10-2012-7000843   | 3/5/2007    | 10-2012-0032524A   | 1277229        | 6/14/2013  | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0146-US-01 | US           | Lapsed        | 607746.363        | 5/3/2006    |                    |                |            | FOREGROUND / BACKGROUND SEPARATION                                                             |
| 10002-0146-US-02 | US           | In Force      | 11/744,020        | 5/3/2007    | 20070269108        | 8,363,908      | 1/29/2013  | FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                           |
| 10002-0146-US-03 | US           | In Force      | 12/879,953        | 9/10/2010   | 20100329549        | 8,358,841      | 1/22/2013  | FOREGROUND/BACKGROUND SEPARATION IN DIGITAL IMAGES                                             |
| 10002-0146-US-04 | US           | In Force      | 13/751,973        | 1/28/2013   | 20130208979        | 9,117,282      | 8/25/2015  | FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                           |
| 10002-0146-US-05 | US           | In Force      | 14/834,111        | 8/24/2015   | 20160078630        | 9,684,966      | 6/20/2017  | FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                           |
| 10002-0146-WO-01 | WO           | Lapsed        | PCT/US2007/068190 | 5/3/2007    | 2007131140         |                |            | IMPROVED FOREGROUND / BACKGROUND SEPARATION IN DIGITAL IMAGES                                  |
| 10002-0149-CN-01 | CN           | In Force      | 200680054358.6    | 8/3/2006    | 101427266          | 101427266      | 10/3/2012  | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-EP-01 | EP           | Lapsed        | 60789329.7        | 8/3/2006    | 1989663A1          |                |            | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-JP-01 | JP           | In Force      | 2008-556300       | 8/3/2006    | JP2009-527983A     | 4970469        | 4/13/2012  | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-US-01 | US           | Lapsed        | 607776.338        | 2/24/2006   |                    |                |            | HUMAN EYE DETECTOR                                                                             |
| 10002-0149-US-02 | US           | In Force      | 11/460,218        | 7/26/2006   | 20070201724        | 7,792,335      | 9/7/2010   | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-US-03 | US           | In Force      | 12/849,597        | 8/3/2010    | 20110033112        | 7,995,795      | 8/9/2011   | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-US-04 | US           | In Force      | 13/190,986        | 7/26/2011   | 20110280446        | 8,285,001      | 10/9/2012  | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0149-WO-01 | WO           | Lapsed        | PCT/US2006/030315 | 2/24/2006   | 2007097777         |                |            | METHOD AND APPARATUS FOR SELECTIVE DISQUALIFICATION OF DIGITAL IMAGES                          |
| 10002-0169-CN-01 | CN           | Lapsed        | 200890000048      | 3/5/2008    |                    |                |            | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 10002-0169-EP-01 | EP           | Lapsed        | 08731476.1        | 3/5/2008    | 2145288            |                |            | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 10002-0169-JP-01 | JP           | Lapsed        | 2009-552871       | 3/5/2008    | JP2010520567A      |                |            | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 10002-0169-KR-01 | KR           | Lapsed        | 2009-702609       | 3/5/2008    | KR10-2009-0118090  |                |            | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 10002-0169-US-01 | US           | Lapsed        | 60/892,882        | 3/5/2007    |                    | 1159830        | 6/19/2012  | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 2-0169-US-02     | US           | In Force      | 12/043,025        | 5/23/2011   | 20080219518        | 7,995,804      | 8/9/2011   | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 2-0169-US-03     | US           | In Force      | 13/113,913        | 5/23/2011   | 20110222730        | 8,233,674      | 7/31/2012  | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 2-0169-WO-01     | WO           | Lapsed        | PCT/US2008/055964 | 3/5/2007    | 2008109708         |                |            | RED EYE FALSE POSITIVE FILTERING USING FACE LOCATION AND ORIENTATION                           |
| 2-0196-CN-01     | CN           | Lapsed        | 200890000051.2    | 3/4/2008    |                    |                |            | FACE CATEGORIZATION AND ANNOTATION OF A MOBILE PHONE CONTACT LIST                              |
| 2-0196-EP-01     | EP           | Lapsed        | 08743677.0        | 3/4/2008    | 2123008A1          |                |            | FACE CATEGORIZATION AND ANNOTATION OF A MOBILE PHONE CONTACT LIST                              |
| 2-0196-US-01     | US           | Lapsed        | 60/893,114        | 3/5/2007    |                    |                |            | FACE CATEGORIZATION AND ANNOTATION OF A MOBILE PHONE CONTACT LIST                              |
| 2-0196-US-02     | US           | Lapsed        | 12/042,104        | 3/4/2008    | 20080220750        | 8,189,927      | 5/29/2012  | FACE CATEGORIZATION AND ANNOTATION OF A MOBILE PHONE CONTACT LIST                              |
| 2-0196-US-03     | US           | In Force      | 12/437,464        | 5/7/2009    | 20090238419        | 8,363,951      | 1/29/2013  | FACE RECOGNITION TRAINING METHOD AND APPARATUS                                                 |
| 2-0196-US-04     | US           | In Force      | 12/913,772        | 10/28/2010  | 20110058060        | 8,363,952      | 1/29/2013  | FACE RECOGNITION TRAINING METHOD AND APPARATUS                                                 |
| 2-0196-US-05     | US           | In Force      | 13/742,262        | 1/15/2013   | 20130194455        | 8,712,160      | 4/29/2014  | FACE RECOGNITION THROUGH FACE BUILDING FROM TWO OR MORE PARTIAL FACE IMAGES FROM THE SAME FACE |
| 2-0196-WO-01     | WO           | Lapsed        | PCT/US2008/055831 | 3/5/2007    | 2008109622         |                |            | FACE CATEGORIZATION AND ANNOTATION OF A MOBILE PHONE CONTACT LIST                              |
| 2-0204-CN-01     | CN           | Lapsed        | 200790100006.X    | 11/14/2007  |                    |                |            | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-DE-01     | DE           | In Force      | 07819840.5        | 11/14/2007  | 2160715            | 602007011994.4 | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-EP-01     | EP           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715A1          | EP2160715B1    | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-FI-01     | FI           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715A1          | EP2160715B1    | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-FR-01     | FR           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715            | 2160715        | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-GB-01     | GB           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715            | 2160715        | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-IE-01     | IE           | Lapsed        | S2008/0337        | 4/30/2008   | 20080337           | S84987         | 10/1/2008  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-JP-01     | JP           | Lapsed        | 2010-525204       | 11/14/2007  | JP2010-539614A     | 4643764        | 12/16/2010 | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-KR-01     | KR           | Lapsed        | 2010-7005800      | 11/14/2007  | 10-2010-0064369    |                |            | IMAGE PROCESSING METHOD AND APPARATUS                                                          |
| 2-0204-NL-01     | NL           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715            | 2160715        | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                          |

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| Xperi Docket #   | Country Code | Patent Status | Application #     | Filing Date | Publication #    | Publication Date | Patent #          | Grant Date | Title                                                                                             |
|------------------|--------------|---------------|-------------------|-------------|------------------|------------------|-------------------|------------|---------------------------------------------------------------------------------------------------|
| I0002-0204-US-01 | SE           | Lapsed        | 07819840.5        | 11/14/2007  | 2160715          | 5/3/2011         | 2160715           | 1/12/2011  | IMAGE PROCESSING METHOD AND APPARATUS                                                             |
| I0002-0204-US-01 | US           | Lapsed        | 60/893,116        | 3/5/2007    |                  |                  |                   |            | SLIDING ADAPTIVE METHOD USING BOTH A PREVIEW PICTURE AND A FULL RESOLUTION PICTURE                |
| I0002-0204-US-02 | US           | In Force      | 17/856,721        | 9/18/2007   | 20080219581      | 9/11/2008        | 8,417,055         | 4/9/2013   | IMAGE PROCESSING METHOD AND APPARATUS                                                             |
| I0002-0204-US-03 | US           | In Force      | 12/330,719        | 12/9/2008   | 20090167893      | 7/2/2009         | 8,264,576         | 9/11/2012  | RGBW SENSOR ARRAY                                                                                 |
| I0002-0204-US-04 | US           | In Force      | 12/901,577        | 10/11/2010  | 20110102638      | 5/5/2011         | 8,878,967         | 11/4/2014  | RGBW SENSOR ARRAY                                                                                 |
| I0002-0204-US-05 | US           | Lapsed        | 13/772,323        | 2/20/2013   | 20130236094      | 9/12/2013        | 8,649,627         | 2/11/2014  | IMAGE PROCESSING METHOD AND APPARATUS                                                             |
| I0002-0204-US-06 | US           | In Force      | 13/772,324        | 2/20/2013   | 20130229542      | 9/5/2013         | 8,737,766         | 5/27/2014  | IMAGE PROCESSING METHOD AND APPARATUS                                                             |
| I0002-0204-WO-01 | WO           | Lapsed        | PC1/EP2007/009939 | 11/14/2007  | WO2009036793     | 3/26/2009        |                   |            | RGBW SENSOR ARRAY                                                                                 |
| I0002-0204-WO-02 | WO           | Lapsed        | PC1/EP2009/008674 | 11/14/2007  | WO20110066381A1  | 6/17/2010        |                   |            | RGBW SENSOR ARRAY                                                                                 |
| I0002-0208-US-01 | US           | Lapsed        | 60/915,669        | 5/2/2007    |                  |                  |                   |            | METHOD OF DETECTING RED EYE IN A DIGITAL IMAGE                                                    |
| I0002-0208-US-02 | US           | In Force      | 11/936,085        | 11/7/2007   | 20080112599      | 5/15/2008        | 8,170,294         | 5/1/2012   | METHOD OF DETECTING RED EYE IN A DIGITAL IMAGE                                                    |
| I0002-0208-US-03 | US           | Lapsed        | 60/915,580        | 5/2/2007    |                  |                  |                   |            | METHOD OF DETECTING RED EYE IN A DIGITAL IMAGE                                                    |
| I0002-0211-US-01 | US           | Lapsed        | 60/945,558        | 6/21/2007   |                  |                  |                   |            | DIGITAL IMAGE ENHANCEMENT WITH REFERENCE IMAGES                                                   |
| I0002-0211-US-02 | US           | In Force      | 12/140,048        | 6/16/2008   | 20080317378      | 12/25/2008       | 8,682,097         | 3/25/2014  | DIGITAL IMAGE ENHANCEMENT WITH REFERENCE IMAGES                                                   |
| I0002-0211-US-03 | US           | In Force      | 12/142,773        | 6/20/2008   | 20080317379      | 12/25/2008       | 8,213,737         | 7/3/2012   | DIGITAL IMAGE ENHANCEMENT WITH REFERENCE IMAGES                                                   |
| I0002-0211-WO-01 | WO           | Lapsed        | PC1/US2008/067746 | 6/20/2008   | 2008157792       | 12/24/2008       |                   |            | DIGITAL IMAGE ENHANCEMENT WITH REFERENCE IMAGES                                                   |
| I0002-0212-US-01 | US           | In Force      | 11/859,164        | 9/21/2007   | 20090080796      | 3/26/2009        |                   |            | FLASH ARTIFACT EYE DEFECT CORRECTION IN BLURRED IMAGES USING ANISOTROPIC BLURRING                 |
| I0002-0212-WO-01 | WO           | Lapsed        | PC1/EP2008/004920 | 9/21/2007   | WO200903682A1    | 3/26/2009        | 8,180,173         | 5/15/2012  | DEFECT CORRECTION IN BLURRED IMAGES                                                               |
| I0002-0223-IE-01 | IE           | Lapsed        | 52007/0820        | 11/12/2007  | IE20070820A2     | 12/10/2008       | S85074            | 12/10/2008 | METHOD FOR IMPROVED RED EYE DETECTION IN ISO IMAGES                                               |
| I0002-0223-US-02 | US           | In Force      | 11/861,257        | 9/25/2007   | 20090080797      | 3/26/2009        | 8,503,818         | 8/6/2013   | EYE DEFECT DETECTION IN INTERNATIONAL STANDARDS ORGANIZATION IMAGES                               |
| I0002-0223-US-02 | US           | In Force      | 13/947,863        | 7/22/2013   | 20130329096      | 12/12/2013       | 8,849,062         | 9/30/2014  | EYE DEFECT DETECTION IN INTERNATIONAL STANDARDS ORGANIZATION IMAGES                               |
| I0002-0224-IE-01 | IE           | Lapsed        | 52008/0161        | 3/4/2008    | 20080161         | 9/17/2008        | S84977            | 9/17/2008  | FACE DETECTION IN MID-SHOT DIGITAL IMAGES                                                         |
| I0002-0224-US-01 | US           | In Force      | 12/026,484        | 2/5/2008    | 20090196466      | 8/6/2009         | 8,494,286         | 7/23/2013  | FACE DETECTION IN MID-SHOT DIGITAL IMAGES                                                         |
| I0002-0242-CN-01 | CN           | In Force      | 20090103029, X    | 1/30/2009   | 102017599        | 4/13/2011        | ZL200908103029, X | 9/3/2014   | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-DE-01 | DE           | In Force      | 9706058.6         | 1/30/2009   | 2165523          | 3/24/2010        | 602009001078.6    | 4/13/2011  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-DE-02 | DE           | In Force      | 10164430.0        | 1/30/2009   | 2227002          | 9/8/2010         | 2227002           | 6/29/2016  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-EP-01 | EP           | Lapsed        | 09706058.6        | 1/30/2009   | 2165523A2        | 3/24/2010        | EP2165523B1       | 4/13/2011  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-EP-02 | EP           | Lapsed        | 10164430.0        | 1/30/2009   | 2227002          | 9/8/2010         | 2227002           | 6/29/2016  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-FR-01 | FR           | In Force      | 09706058.6        | 1/30/2009   | 2165523          | 3/24/2010        | 2165523           | 4/13/2011  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-FR-02 | FR           | In Force      | 10164430.0        | 1/30/2009   | 2227002          | 9/8/2010         | 2227002           | 6/29/2016  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-GB-01 | GB           | In Force      | 09706058.6        | 1/30/2009   | 2165523          | 3/24/2010        | 2165523           | 4/13/2011  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-GB-02 | GB           | In Force      | 10164430.0        | 1/30/2009   | 2227002          | 9/8/2010         | 2227002           | 6/29/2016  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-JP-01 | JP           | In Force      | 2010-541073       | 1/30/2009   | JP2011509584A    | 3/24/2011        | 5140163           | 11/22/2012 | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-JP-02 | JP           | In Force      | 2012-252026       | 1/30/2009   | JP2013-062860A   | 4/4/2013         | 5530503           | 4/25/2014  | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-KR-01 | KR           | In Force      | 2010-7013935      | 1/30/2009   | KR2010-01112560A | 10/19/2010       | 1204046           | 11/16/2012 | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| I0002-0242-US-01 | US           | Lapsed        | 61/024,551        | 1/30/2008   |                  |                  |                   |            | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| 2-0242-US-02     | US           | In Force      | 12/362,399        | 1/29/2009   | 20090189998      | 7/30/2009        | 8,212,864         | 7/3/2012   | DEFECTS                                                                                           |
| 2-0242-US-03     | US           | In Force      | 13/306,972        | 11/29/2011  | 20120105687      | 5/3/2012         | 8,525,898         | 9/3/2013   | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| 2-0242-US-04     | US           | In Force      | 13/802,672        | 3/13/2013   | 20130194462      | 8/1/2013         | 9,137,425         | 9/15/2015  | DEFECTS                                                                                           |
| 2-0242-US-05     | US           | Lapsed        | 13/802,707        | 3/13/2013   | 20130194461      | 8/1/2013         |                   |            | DEFECTS                                                                                           |
| 2-0242-WO-01     | WO           | Lapsed        | PC1/EP2009/051081 | 1/30/2009   | WO2009095481A2   | 8/6/2009         |                   |            | METHODS AND APPARATUS FOR EYE GAZE MEASUREMENT                                                    |
| 2-0255-US-01     | US           | Lapsed        | 12/479,658        | 6/5/2009    |                  |                  |                   |            | LOW-LIGHT VIDEO FRAME ENHANCEMENT                                                                 |
| 2-0255-US-02     | US           | In Force      | 12/485,316        | 6/16/2009   | 20090303343      | 12/10/2009       | 8,199,222         | 6/12/2012  | LOW-LIGHT VIDEO FRAME ENHANCEMENT                                                                 |
| 2-0255-WO-01     | WO           | Lapsed        | PC1/EP2010/056999 | 6/16/2009   | WO2010145910A1   | 12/23/2010       |                   |            | LOW-LIGHT VIDEO FRAME ENHANCEMENT                                                                 |
| 2-0277-US-01     | US           | In Force      | 12/055,958        | 3/26/2008   | 20090244296      | 10/1/2009        | 7,855,737         | 12/21/2010 | METHOD OF MAKING A DIGITAL CAMERA IMAGE OF A SCENE INCLUDING THE CAMERA USER                      |
| 2-0277-US-02     | US           | In Force      | 12/941,605        | 11/8/2010   | 20110053654      | 3/3/2011         | 8,243,182         | 8/14/2012  | METHOD OF MAKING A DIGITAL CAMERA IMAGE OF A SCENE INCLUDING THE CAMERA USER                      |
| 2-0278-CN-01     | CN           | In Force      | 20090102866.0     | 1/20/2009   | 102007499        | 4/6/2011         | ZL200980102866.0  | 3/11/2015  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-JP-01     | JP           | In Force      | 2010-544617       | 1/20/2009   | JP2011-511977A   | 4/14/2011        | 5639478           | 10/31/2014 | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-KR-01     | KR           | In Force      | 10-2010-7016964   | 1/20/2009   | 10-2010-0116178  | 10/29/2010       | 10-1615254        | 4/19/2016  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-US-01     | US           | Lapsed        | 61/024,508        | 1/29/2008   |                  |                  |                   |            | METHODS AND APPARATUS FOR DETECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES AND APPLICATIONS THEREOF |
| 2-0278-US-02     | US           | In Force      | 12/354,707        | 1/15/2009   | 20090190803      | 7/30/2009        | 8,750,578         | 6/10/2014  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-US-03     | US           | In Force      | 14/300,150        | 6/9/2014    | 20140347514      | 11/27/2014       | 9,462,180         | 10/4/2016  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-US-04     | US           | In Force      | 15/284,280        | 10/3/2016   | 20170026567      | 1/26/2017        | 9,942,470         | 4/10/2018  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |
| 2-0278-US-05     | US           | In Force      | 15/948,848        | 4/9/2018    | 20180295279      | 10/11/2018       | 10,778,885        | 9/15/2020  | DEFECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                                    |

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| I0002-0278-US-06 | US           | Pending       | 17/020,535        | 9/14/2020   | 20210067686        | 3/4/2021         |                  |            | DETECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                            |
| I0002-0278-US-07 | US           | Pending       | 17/643,162        | 12/7/2021   | 20220103749        | 3/31/2022        |                  |            | DETECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                            |
| I0002-0278-WO-01 | WO           | Lapsed        | PCT/EP2009/000315 | 1/20/2009   | WO2009095168A1     | 8/6/2009         |                  |            | DETECTING FACIAL EXPRESSIONS IN DIGITAL IMAGES                                            |
| I0002-0282-US-01 | US           | Lapsed        | 61/120,289        | 12/5/2008   |                    |                  |                  |            | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0282-US-02 | US           | In Force      | 12/631,711        | 12/4/2009   | 20100141786        | 6/10/2010        | 8,687,078        | 4/1/2014   | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0282-US-03 | US           | In Force      | 12/631,733        | 12/4/2009   | 20100141787        | 6/10/2010        | 8,411,912        | 4/2/2013   | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0282-US-04 | US           | In Force      | 13/658,022        | 10/23/2012  | 20130044923        | 2/21/2013        | 8,977,011        | 3/10/2015  | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0282-US-05 | US           | In Force      | 13/787,848        | 3/7/2013    | 20130229545        | 9/5/2013         | 8,731,249        | 5/20/2014  | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0282-WO-01 | WO           | Lapsed        | PCT/EP2009/003603 | 12/5/2008   | WO2010063463A2     | 6/10/2010        |                  |            | FACE RECOGNITION USING FACE TRACKER CLASSIFIER DATA                                       |
| I0002-0293-CN-01 | CN           | In Force      | 200980131123.6    | 8/11/2009   | 102119361          | 7/6/2011         | 41200980131123.6 | 12/10/2014 | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-DE-01 | DE           | In Force      | 09777797.3        | 8/11/2009   | DE602009006658     | 5/25/2011        | 602009006658     | 4/25/2012  | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-EP-01 | EP           | Lapsed        | 09777797.3        | 8/11/2009   | 2324391A1          | 5/25/2011        | EP2324391A1      | 4/25/2012  | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-FR-01 | FR           | In Force      | 09777797.3        | 8/11/2009   | 2324391A1          | 5/25/2011        | 2324391          | 4/25/2012  | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-GB-01 | GB           | In Force      | 09777797.3        | 8/11/2009   | 2324391A1          | 5/25/2011        | 2324391          | 4/25/2012  | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-JP-01 | JP           | In Force      | 2011-522426       | 8/11/2009   | JP2011-530911A     | 12/22/2011       | 5530440          | 4/25/2014  | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-KR-01 | KR           | In Force      | 10-2011-7002212   | 8/11/2009   | KR10-2011-0058773A | 6/1/2011         | 1493064          | 2/6/2015   | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-US-01 | US           | In Force      | 12/191,304        | 8/14/2008   | 20100039520        | 2/18/2010        | 8,081,254        | 12/20/2011 | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-US-02 | US           | Lapsed        | 13/164,685        | 6/20/2011   | 20110304748        | 12/15/2011       | 8,334,926        | 12/18/2012 | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-US-03 | US           | In Force      | 13/656,737        | 10/21/2012  | 20130044199        | 2/21/2013        | 8,743,274        | 6/3/2014   | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0293-WO-01 | WO           | Lapsed        | PCT/EP2009/005809 | 8/14/2008   | WO2010017953A1     | 2/18/2010        |                  |            | IN-CAMERA BASED METHOD OF DETECTING DEFECT EYE WITH HIGH ACCURACY                         |
| I0002-0300-US-01 | US           | In Force      | 12/479,593        | 6/5/2009    | 20090303342        | 12/10/2009       | 7,916,897        | 3/29/2011  | FACE TRACKING FOR CONTROLLING IMAGING PARAMETERS                                          |
| I0002-0300-US-02 | US           | In Force      | 12/814,245        | 6/11/2010   | 20110026780        | 2/3/2011         | 8,385,610        | 2/26/2013  | FACE TRACKING FOR CONTROLLING IMAGING PARAMETERS                                          |
| I0002-0300-US-03 | US           | In Force      | 13/771,061        | 2/19/2013   | 20130223698        | 8/29/2013        | 8,934,680        | 1/13/2015  | FACE TRACKING FOR CONTROLLING IMAGING PARAMETERS                                          |
| I0002-0300-US-04 | US           | In Force      | 14/561,905        | 12/5/2014   | 20150092078        | 4/2/2015         | 9,398,209        | 7/19/2016  | FACE TRACKING FOR CONTROLLING IMAGING PARAMETERS                                          |
| I0002-0300-US-05 | US           | In Force      | 15/211,975        | 7/15/2016   | 20160330369        | 11/10/2016       | 9,681,040        | 6/13/2017  | FACE TRACKING FOR CONTROLLING IMAGING PARAMETERS                                          |
| I0002-0314-JP-01 | JP           | In Force      | 2012-512405       | 5/28/2010   | JP2012528506A      | 11/12/2012       | 5456159          | 1/17/2014  | METHODS AND APPARATUSES FOR FOREGROUND, TOP-OF-THE-HEAD SEPARATION FROM BACKGROUND        |
| I0002-0314-US-01 | US           | Lapsed        | 61/182,625        | 5/29/2009   |                    |                  |                  |            | METHODS AND APPARATUSES FOR FOREGROUND, TOP-OF-THE-HEAD SEPARATION FROM BACKGROUND        |
| I0002-0314-US-02 | US           | In Force      | 12/790,594        | 5/28/2010   | 20110050938        | 3/3/2011         | 8,633,999        | 1/21/2014  | METHODS AND APPARATUSES FOR FOREGROUND, TOP-OF-THE-HEAD SEPARATION FROM BACKGROUND        |
| I0002-0314-WO-01 | WO           | Lapsed        | PCT/EP2010/057492 | 5/29/2009   | WO2010136593A2     | 12/2/2010        |                  |            | METHODS AND APPARATUSES FOR FOREGROUND, TOP-OF-THE-HEAD SEPARATION FROM BACKGROUND        |
| I0002-0317-JP-01 | JP           | Lapsed        | 2012-516781       | 6/29/2010   | 2012-530994        | 12/16/2012       |                  |            | METHODS AND APPARATUSES FOR HALF-FACE DETECTION                                           |
| I0002-0317-US-01 | US           | Lapsed        | 61/221,455        | 6/29/2009   |                    |                  |                  |            | METHODS AND APPARATUSES FOR HALF-FACE DETECTION                                           |
| I0002-0317-US-02 | US           | In Force      | 12/825,280        | 6/28/2010   | 20110158547        | 6/30/2011        | 8,605,955        | 12/10/2013 | METHODS AND APPARATUSES FOR HALF-FACE DETECTION                                           |
| 2-0317-WO-01     | WO           | Lapsed        | PCT/EP2010/059228 | 6/29/2009   | WO20101000841A1    | 1/6/2011         |                  |            | METHODS AND APPARATUSES FOR HALF-FACE DETECTION                                           |
| 2-0318-CN-01     | CN           | Lapsed        | 200980117715.2    | 7/28/2009   | 102027505          | 4/20/2011        |                  |            | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-CN-02     | CN           | Lapsed        | 20170079433.4     | 7/28/2009   | 106919911          | 7/4/2017         |                  |            | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-EP-01     | EP           | Lapsed        | 09777489.7        | 7/28/2009   | 2277141            | 1/26/2011        |                  |            | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-JP-01     | JP           | In Force      | 2011-520374       | 7/28/2009   | JP2011529649A      | 12/8/2011        | 5547730          | 5/23/2014  | AUTOMATIC FACE BEAUTIFICATION USING FACE DETECTION                                        |
| 2-0318-KR-01     | KR           | Lapsed        | 2010-7025740      | 7/28/2009   | KR1020110033980    | 4/4/2011         | 1446975          | 9/26/2014  | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-US-01     | US           | Lapsed        | 61/084,942        | 7/30/2008   |                    |                  |                  |            | AUTOMATIC FACE BEAUTIFICATION USING FACE DETECTION                                        |
| 2-0318-US-02     | US           | In Force      | 12/512,796        | 7/30/2009   | 20100026831        | 2/4/2010         | 8,345,114        | 1/1/2013   | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-US-03     | US           | In Force      | 13/732,357        | 12/31/2012  | 20130188073        | 7/25/2013        | 8,902,326        | 12/2/2014  | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0318-WO-01     | WO           | Lapsed        | PCT/EP2009/005461 | 7/28/2009   | WO2010012448A2     | 2/4/2010         |                  |            | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                               |
| 2-0351-US-01     | US           | In Force      | 12/572,930        | 10/2/2009   | 20110081052        | 4/7/2011         | 8,379,917        | 2/19/2013  | FACE RECOGNITION PERFORMANCE USING ADDITIONAL IMAGE FEATURES                              |
| 2-0351-US-02     | US           | Lapsed        | 13/753,426        | 1/29/2013   | 20130142391        | 6/6/2013         |                  |            | FACE RECOGNITION PERFORMANCE USING ADDITIONAL IMAGE FEATURES                              |
| 2-0351-US-03     | US           | In Force      | 14/562,366        | 12/5/2014   | 20150086076        | 3/26/2015        | 9,323,979        | 4/26/2016  | FACE RECOGNITION PERFORMANCE USING ADDITIONAL IMAGE FEATURES                              |
| 2-0351-US-04     | US           | In Force      | 15/137,930        | 4/25/2016   | 20160314346        | 10/27/2016       | 10,032,068       | 7/24/2018  | METHOD OF MAKING A DIGITAL CAMERA IMAGE OF A FIRST SCENE WITH A SUPERIMPOSED SECOND SCENE |
| 2-0351-WO-01     | WO           | Lapsed        | PCT/EP2010/063293 | 10/2/2009   | WO2011039040A1     | 4/7/2011         |                  |            | IMPROVING FACE RECOGNITION PERFORMANCE USING ADDITIONAL IMAGE FEATURES                    |
| 2-0357-US-01     | US           | In Force      | 13/035,907        | 2/25/2011   | 20120121898        | 8/30/2012        | 8,835,777        | 9/16/2014  | AUTOMATIC DETECTION OF VERTICAL GAZE USING AN EMBEDDED IMAGING DEVICE                     |
| 2-0357-US-02     | US           | Lapsed        | 13/219,569        | 8/26/2011   | 20120219180        | 8/30/2012        |                  |            | AUTOMATIC DETECTION OF VERTICAL GAZE USING AN EMBEDDED IMAGING DEVICE                     |
| 2-0358-US-01     | US           | In Force      | 12/827,868        | 6/30/2010   | 20110002506        | 1/6/2011         | 8,520,089        | 8/27/2013  | EYE BEAUTIFICATION                                                                        |
| 2-0358-US-02     | US           | In Force      | 13/969,558        | 8/17/2013   | 20130329079        | 12/12/2013       | 9,053,524        | 6/9/2015   | EYE BEAUTIFICATION UNDER INACCURATE LOCALIZATION                                          |
| 2-0358-US-03     | US           | In Force      | 14/733,873        | 6/8/2015    | 20150269712        | 9/24/2015        | 9,691,136        | 6/27/2017  | EYE BEAUTIFICATION UNDER INACCURATE LOCALIZATION                                          |
| 2-0358-US-04     | US           | In Force      | 15/628,997        | 6/21/2017   | 20170325135        | 12/7/2017        | 10,304,166       | 5/28/2019  | EYE BEAUTIFICATION UNDER INACCURATE LOCALIZATION                                          |

**PATENT**

**REEL: 066237 FRAME: 0386**

| Xperi Docket #   | Country Code | Patent Status | Application #    | Filing Date | Publication #   | Publication Date | Patent #          | Grant Date | Title                                                                                         |
|------------------|--------------|---------------|------------------|-------------|-----------------|------------------|-------------------|------------|-----------------------------------------------------------------------------------------------|
| I0002-0358-WO-01 | WO           | Lapsed        | PT/EP2011/060013 | 6/30/2010   | WO2012000800A1  | 8/25/2011        | 8,698,924         | 4/15/2014  | EYE BEAUTIFICATION                                                                            |
| I0002-0360-US-01 | US           | In Force      | 12/941,983       | 11/18/2010  | 20110205381     | 8/25/2011        | 8,698,924         | 4/15/2014  | ONE MAPPING FOR LOW-LIGHT VIDEO FRAME ENHANCEMENT                                             |
| I0002-0360-US-02 | US           | In Force      | 14/012,806       | 8/28/2013   | 20130342738     | 12/26/2013       | 8,890,983         | 11/18/2014 | ONE MAPPING FOR LOW-LIGHT VIDEO FRAME ENHANCEMENT                                             |
| I0002-0360-US-03 | US           | In Force      | 14/535,036       | 11/16/2014  | 20150062387     | 3/5/2015         | 9,094,648         | 7/28/2015  | ONE MAPPING FOR LOW-LIGHT VIDEO FRAME ENHANCEMENT                                             |
| I0002-0360-US-04 | US           | In Force      | 14/810,297       | 7/27/2015   | 20150334283     | 11/19/2015       | 9,307,212         | 4/5/2016   | ONE MAPPING FOR LOW-LIGHT VIDEO FRAME ENHANCEMENT                                             |
| I0002-0361-CN-01 | CN           | In Force      | 201180046708.5   | 9/28/2011   | 103155537       | 6/12/2013        | ZL201180046708.5  | 8/10/2016  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-DE-01 | DE           | In Force      | 11/647,123       | 9/28/2011   | 2622840         | 8/7/2013         | 2622840           | 7/19/2017  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-EP-01 | EP           | Lapsed        | 11/647,123       | 9/28/2011   | 2622840         | 8/7/2013         | 2622840           | 7/19/2017  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-FR-01 | FR           | In Force      | 11/647,123       | 9/28/2011   | 2622840         | 8/7/2013         | 2622840           | 7/19/2017  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-GB-01 | GB           | In Force      | 11/647,123       | 9/28/2011   | 2622840         | 8/7/2013         | 2622840           | 7/19/2017  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-JP-01 | JP           | In Force      | 2013-529676      | 9/28/2011   | 11-2013-542461  | 11/21/2013       | 6027005           | 10/21/2016 | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-KR-01 | KR           | Lapsed        | 10-2013-7010457  | 9/28/2011   | 13-0112036      | 10/11/2013       | 10-1783847        | 9/26/2017  | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-US-01 | US           | Lapsed        | 61/387,449       | 9/28/2010   | 20120075492     | 3/29/2012        | 8,970,770         | 3/3/2015   | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-US-02 | US           | In Force      | 12/72/959,320    | 12/2/2010   | WO2012041892A1  | 4/5/2012         |                   |            | CONTINUOUS AUTO-FOCUS BASED ON FACE DETECTION AND TRACKING                                    |
| I0002-0361-WO-01 | WO           | Lapsed        | PT/EP2011/066835 | 9/28/2010   | WO2012041892A1  | 4/5/2012         | ZL201180038838.4  | 10/24/2017 | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-CN-01 | CN           | In Force      | 201180038838.4   | 11/11/2011  | 103052960       | 4/17/2013        | 2548154           | 10/21/2015 | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-DE-01 | DE           | In Force      | 11/790572.9      | 11/11/2011  | 2548154         | 1/23/2013        | 602011039852.0    | 7/19/2017  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-DE-02 | DE           | In Force      | 15189292.4       | 11/11/2011  | 3007104         | 10/25/2017       | 3236391           | 10/9/2019  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-DE-03 | DE           | In Force      | 17169218.9       | 11/11/2011  | 3236391         | 1/23/2013        | 2548154           | 10/21/2015 | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-EP-01 | EP           | Lapsed        | 11/790572.9      | 11/11/2011  | 2548154         | 4/13/2016        | 3007104           | 7/19/2017  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-EP-02 | EP           | Lapsed        | 15189292.4       | 11/11/2011  | 3007104         | 10/25/2017       | 3236391           | 10/9/2019  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-EP-03 | EP           | Lapsed        | 17169218.9       | 11/11/2011  | 3236391         | 1/23/2013        | 2548154           | 10/21/2015 | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-FR-01 | FR           | Lapsed        | 15189292.4       | 11/11/2011  | 3236391         | 10/25/2017       | 3007104           | 7/19/2017  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-FR-02 | FR           | Lapsed        | 17169218.9       | 11/11/2011  | 3236391         | 10/25/2017       | 3236391           | 10/9/2019  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-GB-01 | GB           | Lapsed        | 11/790572.9      | 11/11/2011  | 2548154         | 1/23/2013        | 2548154           | 10/21/2015 | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-GB-02 | GB           | Lapsed        | 15189292.4       | 11/11/2011  | 3007104         | 10/25/2017       | 3007104           | 7/19/2017  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-GB-03 | GB           | In Force      | 17169218.9       | 11/11/2011  | 3236391         | 10/25/2017       | 3236391           | 10/9/2019  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-JP-01 | JP           | In Force      | 2013-538205      | 11/11/2011  | 2014050915      | 3/6/2014         | 5530568           | 4/25/2014  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-JP-02 | JP           | In Force      | 2013-121658      | 11/11/2011  | 2013-242571     | 12/5/2013        | 6081297           | 1/27/2017  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-KR-01 | KR           | In Force      | 10-2013-7006742  | 11/11/2011  | 10-2013-0139243 | 12/20/2013       | 10-1870853        | 6/19/2018  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-NL-03 | NL           | In Force      | 17169218.9       | 11/11/2011  | 3236391         | 10/25/2017       | 3236391           | 10/9/2019  | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0363-US-01 | US           | In Force      | 12/944,701       | 11/11/2010  | 20120120283     | 5/17/2012        | 8,648,959         | 2/11/2014  | RAPID AUTO-FOCUS USING CLASSIFIER CHAINS, MEMS AND/OR MULTIPLE OBJECT FOCUSING                |
| I0002-0363-US-02 | US           | In Force      | 14/174,821       | 2/6/2014    | 20140193088     | 7/10/2014        | 8,797,448         | 8/5/2014   | RAPID AUTO-FOCUS USING CLASSIFIER CHAINS, MEMS AND/OR MULTIPLE OBJECT FOCUSING                |
| I0002-0363-WO-01 | WO           | Lapsed        | PT/EP2011/069904 | 11/11/2011  | WO2012062893A2  | 5/18/2012        |                   |            | OBJECT DETECTION AND RECOGNITION UNDER OUT OF FOCUS CONDITIONS                                |
| I0002-0368-CN-01 | CN           | In Force      | 201180038857.7   | 11/29/2011  | 103081455       | 5/1/2013         | ZL201180038857.7  | 3/8/2017   | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-CN-02 | CN           | In Force      | 2017010179765.X  | 11/29/2011  | 107105157       | 8/29/2017        | ZL2017010179765.X | 2/14/2020  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-DE-01 | DE           | In Force      | 11/799254.5      | 11/29/2011  | 2548368A1       | 1/23/2013        | 602011003163.5    | 9/18/2013  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-EP-01 | EP           | Lapsed        | 11/799254.5      | 11/29/2011  | 2548368A1       | 1/23/2013        | EP254836881       | 9/18/2013  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-FR-01 | FR           | Lapsed        | 11/799254.5      | 11/29/2011  | 2548368A1       | 1/23/2013        | 2548368           | 9/18/2013  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-GB-01 | GB           | Lapsed        | 11/799254.5      | 11/29/2011  | 2548368A1       | 1/23/2013        | 2548368           | 9/18/2013  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-JP-01 | JP           | In Force      | 2013-540414      | 11/29/2011  | 20140506026     | 3/6/2014         | 5547854           | 5/23/2014  | PORTRAIT IMAGE CREATION FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                    |
| I0002-0368-KR-01 | KR           | In Force      | 10-2013-7003151  | 11/29/2011  | 10-2014-0000192 | 1/2/2014         | 10-1845318        | 3/29/2018  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-US-01 | US           | Lapsed        | 61/417,737       | 11/29/2010  |                 |                  |                   |            | PORTRAIT IMAGE CREATION FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                    |
| I0002-0368-US-02 | US           | In Force      | 13/306,568       | 11/29/2011  | 20120133746     | 5/31/2012        | 9,118,833         | 8/25/2015  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-US-03 | US           | In Force      | 14/834,067       | 8/24/2015   | 20150365588     | 12/17/2015       | 9,456,128         | 9/27/2016  | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-US-04 | US           | In Force      | 15/275,971       | 9/26/2016   | 20170111571     | 4/20/2017        | 10,110,804        | 10/23/2018 | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0368-WO-01 | WO           | Lapsed        | PT/EP2011/071233 | 11/29/2011  | WO2012072606A1  | 6/7/2012         |                   |            | PORTRAIT IMAGE SYNTHESIS FROM MULTIPLE IMAGES CAPTURED ON A HANDHELD DEVICE                   |
| I0002-0369-US-01 | US           | In Force      | 13/077,891       | 3/31/2011   | 20120249841     | 10/4/2012        | 8,860,816         | 10/14/2014 | SCENE ENHANCEMENTS IN OFF-CENTER PERIPHERAL REGIONS FOR NONLINEAR LENS GEOMETRIES             |
| I0002-0370-US-01 | US           | In Force      | 13/234,139       | 9/15/2011   | 20130070125     | 3/21/2013        | 8,493,459         | 7/23/2013  | REGISTRATION OF DISTORTED IMAGES                                                              |
| I0002-0370-US-03 | US           | Lapsed        | 13/947,579       | 7/22/2013   | 20140066509     | 3/27/2014        |                   |            | REGISTRATION OF DISTORTED IMAGES                                                              |
| I0002-0371-US-01 | US           | In Force      | 13/078,970       | 4/2/2011    | 20120249725     | 10/4/2012        | 8,723,959         | 5/13/2014  | FACE AND OTHER OBJECT TRACKING IN OFF-CENTER PERIPHERAL REGIONS FOR NONLINEAR LENS GEOMETRIES |
| I0002-0372-US-01 | US           | In Force      | 13/084,340       | 4/11/2011   | 20120249727     | 10/4/2012        | 8,896,703         | 11/25/2014 | SUPERRESOLUTION ENHANCEMENT OF PERIPHERAL REGION'S NONLINEAR LENS GEOMETRIES                  |
| I0002-0377-DE-01 | DE           | In Force      | 12712727.2       | 2/17/2012   | 2577955         | 4/10/2013        | 2577955           | 7/30/2014  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES     |
| I0002-0377-EP-01 | EP           | Lapsed        | 12712727.2       | 2/17/2012   | 2577955         | 4/10/2013        | 2577955           | 7/30/2014  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES     |

| Xperi Docket #   | Country Code | Patent Status | Application #     | Filing Date | Publication #         | Publication Date | Patent #         | Grant Date | Title                                                                                     |
|------------------|--------------|---------------|-------------------|-------------|-----------------------|------------------|------------------|------------|-------------------------------------------------------------------------------------------|
| I0002-0377-FR-01 | FR           | Lapsed        | 12712727.2        | 2/17/2012   | 2577955               | 4/10/2013        | 2577955          | 7/30/2014  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0377-GB-01 | GB           | Lapsed        | 12712727.2        | 2/17/2012   | 2577955               | 4/10/2013        | 2577955          | 7/30/2014  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0377-US-01 | US           | Lapsed        | 61/444,565        | 2/18/2011   |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0377-US-02 | US           | In Force      | 13/984,487        | 2/17/2012   | 20130314568           | 11/28/2013       | 9,019,402        | 4/28/2015  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0377-US-03 | US           | Lapsed        | 14/698,742        | 4/28/2015   |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0377-WO-01 | WO           | Lapsed        | PCT/IB2012/000381 | 2/18/2011   | WO/2012/110894        | 8/23/2012        |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-IE-01 | IE           | Lapsed        | S2012/0509        | 11/27/2012  | IE20120509A2          |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-US-01 | US           | Lapsed        | 61/748,070        | 12/31/2012  |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-US-02 | US           | In Force      | 14/646,368        | 11/21/2013  | 20150312478           | 10/29/2015       | 9,736,370        | 8/15/2017  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-US-03 | US           | In Force      | 15/672,743        | 8/9/2017    | 20180063430           | 3/1/2018         | 10,122,919       | 11/6/2018  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-US-04 | US           | In Force      | 16/176,538        | 10/31/2018  | 20190141239           | 5/9/2019         | 11,070,723       | 7/20/2021  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-US-05 | US           | Pending       | 17/356,365        | 6/23/2021   | 20210409598           | 12/30/2021       |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0386-WO-01 | WO           | Lapsed        | PCT/EP2013/074423 | 11/21/2013  | WO2014082921          | 6/5/2014         |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-DE-01 | DE           | Pending       | 112015001656.2    | 3/27/2015   | DE 11 2015 001 656 15 | 12/29/2016       |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-IN-01 | IN           | Pending       | 201617036942      | 3/27/2015   |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-US-01 | US           | Lapsed        | 61/975,262        | 4/4/2014    |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-US-02 | US           | In Force      | 14/506,150        | 10/3/2014   | 20150286854           | 10/8/2015        | 9,239,957        | 1/19/2016  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-US-03 | US           | In Force      | 15/301,937        | 3/27/2015   | 20170186138           | 6/29/2017        | 10,452,910       | 10/22/2019 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-US-04 | US           | In Force      | 16/656,303        | 10/17/2019  | 20200050849           | 2/13/2020        | 10,769,435       | 9/8/2020   | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0395-WO-01 | WO           | Lapsed        | PCT/EP2015/056815 | 3/27/2015   | WO2015150292          | 10/8/2015        |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-CN-01 | CN           | In Force      | 201580051252.X    | 7/13/2015   | 107111009             | 8/29/2017        | 41201580051252.X | 11/8/2019  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-DE-01 | DE           | In Force      | 15741138.0        | 7/13/2015   |                       |                  | 3001867          | 6/21/2017  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-EP-01 | EP           | Lapsed        | 15741138.0        | 7/13/2015   | 3001867               | 4/6/2016         | 3001867          | 6/21/2017  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-FR-01 | FR           | In Force      | 15741138.0        | 7/13/2015   |                       |                  | 3001867          | 6/21/2017  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-GB-01 | GB           | In Force      | 15741138.0        | 7/13/2015   |                       |                  | 3001867          | 6/21/2017  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-KR-01 | KR           | In Force      | 10-2017-7004881   | 7/13/2015   | 10-2017-0031775       | 3/21/2017        | 10-1834393       | 2/26/2018  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-US-01 | US           | Lapsed        | 62/035,272        | 8/8/2014    |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| I0002-0397-US-02 | US           | Lapsed        | 62/126,270        | 2/27/2015   |                       |                  |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0397-US-03     | US           | In Force      | 14/821,156        | 8/7/2015    | 20160044253           | 2/11/2016        | 10,051,208       | 8/14/2018  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0397-US-04     | US           | In Force      | 14/962,909        | 12/8/2015   | 20160092731           | 3/31/2016        | 10,152,631       | 12/11/2018 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0397-WO-01     | WO           | Lapsed        | PCT/EP2015/065998 | 7/13/2015   | WO2016020147          | 2/11/2016        |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0401-US-01     | US           | In Force      | 10/608,887        | 6/26/2003   | 20060203107           | 9/14/2006        | 7,616,233        | 11/10/2009 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0401-US-02     | US           | Lapsed        | 12/582,415        | 10/20/2009  | 20100039525           | 2/18/2010        |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0401-US-03     | US           | Lapsed        | 12/582,642        | 10/20/2009  | 20100271499           | 10/28/2010       |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0402-US-01     | US           | In Force      | 10/608,888        | 6/26/2003   | 20060203108           | 9/14/2006        | 7,362,368        | 4/22/2008  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0402-US-02     | US           | Lapsed        | 11/941,956        | 11/18/2007  | 20080143854           | 6/19/2008        |                  |            | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0402-US-01     | US           | In Force      | 10/608,811        | 6/26/2003   | 20060203108           | 9/14/2006        | 7,471,846        | 12/30/2008 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-02     | US           | In Force      | 11/773,855        | 7/5/2007    | 20090102949           | 4/23/2009        | 7,693,311        | 4/6/2010   | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-03     | US           | In Force      | 11/773,815        | 7/5/2007    | 20080043122           | 2/21/2008        | 7,702,136        | 4/20/2010  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-04     | US           | In Force      | 12/753,910        | 4/5/2010    | 20100188530           | 7/29/2010        | 7,822,235        | 10/26/2010 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-05     | US           | In Force      | 12/753,907        | 4/5/2010    | 20100188525           | 7/29/2010        | 7,822,234        | 10/26/2010 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-06     | US           | In Force      | 12/892,937        | 9/29/2010   | 20110013044           | 1/20/2011        | 8,160,312        | 4/17/2012  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0403-US-07     | US           | In Force      | 12/892,935        | 9/29/2010   | 20110025886           | 2/3/2011         | 8,155,401        | 4/10/2012  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0404-US-01     | US           | Lapsed        | 10/608,772        | 6/26/2003   |                       |                  | 7,440,593        | 10/21/2008 | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |
| 2-0404-US-02     | US           | In Force      | 11/024,046        | 12/27/2004  | 20060204110           | 9/14/2006        | 7,565,030        | 7/21/2009  | DYNAMIC RANGE EXTENSION BY COMBINING DIFFERENTLY EXPOSED HAND-HELD DEVICE-ACQUIRED IMAGES |

**PATENT**

**REEL: 066237 FRAME: 0388**

| Xperi Docket #   | Country Code | Patent Status | Application #    | Filing Date | Publication #  | Publication Date | Patent #   | Grant Date | Title                                                                                                                           |
|------------------|--------------|---------------|------------------|-------------|----------------|------------------|------------|------------|---------------------------------------------------------------------------------------------------------------------------------|
| 10002-0404-US-03 | US           | In Force      | 11/765,967       | 6/20/2007   | 20080013800    | 1/17/2008        | 7,630,527  | 12/8/2009  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0404-US-04 | US           | In Force      | 11/765,899       | 6/20/2007   | 20080013799    | 1/17/2008        | 7,912,245  | 3/22/2011  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0404-US-05 | US           | In Force      | 12/482,305       | 6/10/2009   | 20090245693    | 10/1/2009        | 7,844,135  | 11/30/2010 | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-06 | US           | In Force      | 12/629,450       | 12/2/2009   | 20100165150    | 7/17/2010        | 8,265,399  | 9/11/2012  | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-07 | US           | In Force      | 12/637,664       | 12/14/2009  | 20100220899    | 9/2/2010         | 7,986,811  | 7/26/2011  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0404-US-08 | US           | In Force      | 12/949,751       | 11/18/2010  | 20110064329    | 3/17/2011        | 8,081,844  | 12/20/2011 | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-09 | US           | In Force      | 13/118,572       | 5/30/2011   | 20120075504    | 3/29/2012        | 8,498,446  | 7/30/2013  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0404-US-10 | US           | In Force      | 13/330,480       | 12/19/2011  | 20120155709    | 6/21/2012        | 8,391,645  | 3/5/2013   | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-11 | US           | Lapsed        | 13/778,128       | 2/27/2013   | 20130169821    | 7/4/2013         |            |            | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-12 | US           | In Force      | 13/953,717       | 7/29/2013   | 20140036109    | 2/6/2014         | 8,989,443  | 3/24/2015  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0404-US-13 | US           | In Force      | 13/953,733       | 7/29/2013   | 20130314525    | 11/28/2013       | 9,008,374  | 4/14/2015  | DETECTING ORIENTATION OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                                                        |
| 10002-0404-US-14 | US           | In Force      | 13/953,740       | 7/29/2013   | 20130315488    | 11/28/2013       | 8,761,449  | 6/24/2014  | METHOD OF IMPROVING ORIENTATION AND COLOR BALANCE OF DIGITAL IMAGES USING FACE DETECTION INFORMATION                            |
| 10002-0407-US-01 | US           | In Force      | 10/608,819       | 6/26/2003   | 20060204057    | 9/14/2006        | 7,269,292  | 9/11/2007  | DIGITAL IMAGE ADJUSTABLE COMPRESSION AND RESOLUTION USING FACE DETECTION INFORMATION                                            |
| 10002-0407-US-02 | US           | Lapsed        | 11/773,868       | 7/5/2007    | 20080019565    | 1/24/2008        | 7,466,866  | 12/16/2008 | DIGITAL IMAGE ADJUSTABLE COMPRESSION AND RESOLUTION USING FACE DETECTION INFORMATION                                            |
| 10002-0407-US-03 | US           | In Force      | 12/331,334       | 12/9/2008   | 20090141144    | 6/4/2009         | 7,684,630  | 3/23/2010  | DIGITAL IMAGE ADJUSTABLE COMPRESSION AND RESOLUTION USING FACE DETECTION INFORMATION                                            |
| 10002-0407-US-04 | US           | In Force      | 12/719,620       | 3/8/2010    | 20100165140    | 7/1/2010         | 8,326,066  | 12/4/2012  | DIGITAL IMAGE ADJUSTABLE COMPRESSION AND RESOLUTION USING FACE DETECTION INFORMATION                                            |
| 10002-0408-US-01 | US           | In Force      | 10/608,824       | 6/26/2003   | 20060215924    | 9/28/2006        | 7,315,630  | 1/1/2008   | PERFECTING OF DIGITAL IMAGE RENDERING PARAMETERS WITHIN RENDERING DEVICES USING FACE DETECTION                                  |
| 10002-0409-US-01 | US           | In Force      | 10/764,336       | 1/22/2004   |                |                  | 7,558,408  | 7/7/2009   | CLASSIFICATION SYSTEM FOR CONSUMER DIGITAL IMAGES USING WORKFLOW AND USER INTERFACE MODULES, AND FACE DETECTION AND RECOGNITION |
| 10002-0410-US-01 | US           | In Force      | 10/764,335       | 1/22/2004   |                |                  | 7,587,068  | 9/8/2009   | CLASSIFICATION DATABASE FOR CONSUMER DIGITAL IMAGES                                                                             |
| 10002-0410-US-02 | US           | In Force      | 12/554,258       | 9/4/2009    | 20100066822    | 3/18/2010        | 8,553,949  | 10/8/2013  | CLASSIFICATION AND ORGANIZATION OF CONSUMER DIGITAL IMAGES USING WORKFLOW, AND FACE DETECTION AND RECOGNITION                   |
| 10002-0410-US-03 | US           | In Force      | 13/563,730       | 7/31/2012   | 20130050460    | 2/28/2013        | 8,897,504  | 11/25/2014 | CLASSIFICATION AND ORGANIZATION OF CONSUMER DIGITAL IMAGES USING WORKFLOW, AND FACE DETECTION AND RECOGNITION                   |
| 10002-0410-US-04 | US           | In Force      | 14/542,261       | 11/14/2014  | 20150067600    | 3/5/2015         | 9,779,287  | 10/3/2017  | CLASSIFICATION AND ORGANIZATION OF CONSUMER DIGITAL IMAGES USING WORKFLOW, AND FACE DETECTION AND RECOGNITION                   |
| 10002-0410-US-05 | US           | In Force      | 15/721,387       | 9/29/2017   | 20180025218    | 1/25/2018        | 10,346,677 | 7/9/2019   | DETECTION AND RECOGNITION                                                                                                       |
| 2-0411-US-01     | US           | In Force      | 10/764,274       | 1/22/2004   |                |                  | 7,555,148  | 6/30/2009  | CLASSIFICATION SYSTEM FOR CONSUMER DIGITAL IMAGES USING WORKFLOW, FACE DETECTION, NORMALIZATION, AND FACE RECOGNITION           |
| 2-0412-US-01     | US           | In Force      | 10/763,801       | 1/22/2004   |                |                  | 7,564,994  | 7/21/2009  | CLASSIFICATION SYSTEM FOR CONSUMER DIGITAL IMAGES USING AUTOMATIC WORKFLOW AND FACE DETECTION AND RECOGNITION                   |
| 2-0412-US-02     | US           | In Force      | 12/506,124       | 7/20/2009   | 20100014721    | 1/21/2010        | 8,199,979  | 6/12/2012  | CLASSIFICATION SYSTEM FOR CONSUMER DIGITAL IMAGES USING AUTOMATIC WORKFLOW AND FACE DETECTION AND RECOGNITION                   |
| 2-0416-IE-01     | IE           | Lapsed        | 52005/0282       | 5/6/2005    | 20050282       | 12/14/2005       | S84112     | 12/29/2005 | DIGITAL CAMERA WITH BUILT-IN LENS CALIBRATION TABLE                                                                             |
| 2-0416-US-01     | US           | Lapsed        | 10/676,820       | 9/30/2003   | 20050078173    | 4/14/2005        | 7,676,110  | 3/9/2010   | DETERMINATION OF NEED TO SERVICE A CAMERA BASED ON DETECTION OF BLEMISHES IN DIGITAL IMAGES                                     |
| 2-0416-US-02     | US           | In Force      | 10/842,244       | 5/10/2004   | 20050068452    | 3/31/2005        | 7,590,305  | 9/15/2009  | DIGITAL CAMERA WITH BUILT-IN LENS CALIBRATION TABLE                                                                             |
| 2-0421-US-03     | US           | Lapsed        | 12/558,227       | 9/11/2009   | 20100231727    | 9/16/2010        |            |            | DIGITAL CAMERA WITH BUILT-IN LENS CALIBRATION TABLE                                                                             |
| 2-0416-US-04     | US           | Lapsed        | 12/710,271       | 2/22/2010   | 20100321537    | 12/23/2010       | 8,369,650  | 2/5/2013   | IMAGE DEFECT MAP CREATION USING BATCHES OF DIGITAL IMAGES                                                                       |
| 2-0416-US-05     | US           | Lapsed        | 12/661,033       | 3/8/2010    | 20100259622    | 10/14/2010       |            |            | DETERMINATION OF NEED TO SERVICE A CAMERA BASED ON DETECTION OF BLEMISHES IN DIGITAL IMAGES                                     |
| 2-0416-US-06     | US           | In Force      | 13/748,584       | 1/23/2013   | 20130208995    | 8/15/2013        | 8,879,869  | 11/4/2014  | IMAGE DEFECT MAP CREATION USING BATCHES OF DIGITAL IMAGES                                                                       |
| 2-0416-WO-01     | WO           | Lapsed        | PC/EP2005/005033 | 9/30/2005   | WO2005109853A1 | 11/17/2005       |            |            | DIGITAL CAMERA WITH BUILT-IN LENS CALIBRATION TABLE                                                                             |
| 2-0421-US-01     | US           | Lapsed        | 10/986,562       | 11/10/2004  | 20060098891    | 5/11/2006        | 7,635,889  | 12/29/2009 | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |
| 2-0421-US-02     | US           | In Force      | 12/199,710       | 8/27/2008   | 20080316321    | 12/25/2008       | 7,697,778  | 4/13/2010  | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |
| 2-0421-US-03     | US           | Lapsed        | 12/755,338       | 4/6/2010    | 20100328472    | 12/30/2010       | 8,494,300  | 7/23/2010  | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |
| 2-0421-US-04     | US           | In Force      | 13/088,410       | 4/17/2011   | 20110193989    | 8/11/2011        | 8,270,751  | 9/18/2012  | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |
| 2-0421-US-05     | US           | In Force      | 13/088,411       | 4/17/2011   | 20110199493    | 8/18/2011        | 8,285,067  | 10/9/2012  | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |
| 2-0421-US-06     | US           | Lapsed        | 13/948,135       | 7/22/2013   | 20140022444    | 1/23/2014        |            |            | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                    |

**PATENT**

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| Xperi Docket #   | Country Code | Patent Status | Application #    | Filing Date | Publication #  | Publication Date | Patent #         | Grant Date | Title                                                                                                                                     |
|------------------|--------------|---------------|------------------|-------------|----------------|------------------|------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 10002-0421-US-01 | US           | Lapsed        | 13/948,137       | 7/22/2013   | 20140022403    | 1/23/2014        |                  |            | METHOD OF NOTIFYING USERS REGARDING MOTION ARTIFACTS BASED ON IMAGE ANALYSIS                                                              |
| 10002-0422-US-01 | US           | In Force      | 11/460,225       | 7/26/2006   | 20070201725    | 8/30/2007        | 7,804,983        | 9/28/2010  | DIGITAL IMAGE ACQUISITION CONTROL AND CORRECTION METHOD AND APPARATUS                                                                     |
| 10002-0423-US-02 | US           | In Force      | 12/851,333       | 8/5/2010    | 20110058058    | 3/10/2011        | 8,005,268        | 8/23/2011  | DIGITAL IMAGE ACQUISITION CONTROL AND CORRECTION METHOD AND APPARATUS                                                                     |
| 10002-0423-US-03 | US           | In Force      | 13/191,239       | 7/26/2011   | 20110279700    | 11/17/2011       | 8,265,348        | 9/11/2012  | DIGITAL IMAGE ACQUISITION CONTROL AND CORRECTION METHOD AND APPARATUS                                                                     |
| 10002-0431-US-01 | US           | In Force      | 12/140,950       | 6/17/2008   | 20090003708    | 1/1/2009         | 9,129,381        | 9/8/2015   | MODIFICATION OF POST-VIEWING PARAMETERS FOR DIGITAL IMAGES USING IMAGE REGION OR FEATURE INFORMATION                                      |
| 10002-0431-US-02 | US           | In Force      | 14/846,390       | 9/4/2015    | 20160065861    | 3/3/2016         | 9,692,964        | 6/27/2017  | MODIFICATION OF POST-VIEWING PARAMETERS FOR DIGITAL IMAGES USING IMAGE REGION OR FEATURE INFORMATION                                      |
| 10002-0431-US-03 | US           | Lapsed        | 15/633,328       | 6/26/2017   | 20180013950    | 1/11/2018        |                  |            | FEATURE INFORMATION                                                                                                                       |
| 10002-0432-US-01 | US           | In Force      | 12/141,042       | 6/17/2008   | 20090003652    | 1/17/2009        | 7,620,218        | 11/17/2009 | REAL-TIME FACE TRACKING WITH REFERENCE IMAGES                                                                                             |
| 10002-0432-US-02 | US           | In Force      | 12/619,587       | 11/16/2009  | 20100060727    | 3/1/2010         | 8,509,496        | 8/13/2013  | REAL-TIME FACE TRACKING WITH REFERENCE IMAGES                                                                                             |
| 10002-0432-US-03 | US           | In Force      | 13/964,632       | 8/12/2013   | 20130329955    | 12/12/2013       | 8,861,806        | 10/14/2014 | REAL-TIME FACE TRACKING WITH REFERENCE IMAGES                                                                                             |
| 10002-0433-US-01 | US           | In Force      | 12/142,134       | 6/19/2008   | 20080317339    | 12/25/2008       | 8,320,641        | 11/27/2012 | METHOD AND APPARATUS FOR RED-EYE DETECTION USING PREVIEW OR OTHER REFERENCE IMAGES                                                        |
| 10002-0433-US-02 | US           | In Force      | 12/947,731       | 11/16/2010  | 20110122297    | 5/26/2011        | 7,953,251        | 5/31/2011  | METHOD AND APPARATUS FOR DETECTION AND CORRECTION OF MULTIPLE IMAGE DEFECTS WITHIN DIGITAL IMAGES USING PREVIEW OR OTHER REFERENCE IMAGES |
| 10002-0433-US-03 | US           | In Force      | 13/113,648       | 5/23/2011   | 20110221936    | 9/15/2011        | 8,135,184        | 3/13/2012  | METHOD AND APPARATUS FOR DETECTION AND CORRECTION OF MULTIPLE IMAGE DEFECTS WITHIN DIGITAL IMAGES USING PREVIEW OR OTHER REFERENCE IMAGES |
| 10002-0435-US-01 | US           | In Force      | 12/512,819       | 7/30/2009   | 20100026832    | 2/4/2010         | 8,384,793        | 2/26/2013  | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                                                                               |
| 10002-0435-US-02 | US           | In Force      | 13/776,694       | 2/25/2013   | 20130229549    | 9/5/2013         | 8,681,241        | 3/25/2014  | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                                                                               |
| 10002-0436-US-01 | US           | In Force      | 12/512,843       | 7/30/2009   | 20100026833    | 2/4/2010         | 9,007,480        | 4/14/2015  | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                                                                               |
| 10002-0436-US-02 | US           | Lapsed        | 14/685,397       | 4/13/2015   | 20150358535    | 12/10/2015       |                  |            | AUTOMATIC FACE AND SKIN BEAUTIFICATION USING FACE DETECTION                                                                               |
| 10002-0437-US-01 | US           | In Force      | 12/636,618       | 12/11/2009  | 20110141300    | 6/16/2011        | 8,294,748        | 10/23/2012 | PANORAMA IMAGING USING A BLENDING MAP                                                                                                     |
| 10002-0438-CN-01 | CN           | In Force      | 201180051076.1   | 9/9/2011    | 103168315      | 6/19/2013        | ZL201180051076.1 | 1/20/2016  | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-CN-02 | CN           | Lapsed        | 11/101103011.8   | 9/9/2011    |                |                  |                  |            | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-GB-01 | GB           | In Force      | 1305502.5        | 9/9/2011    | GB2498284A     | 7/10/2013        | 2498284          | 5/24/2017  | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-JP-01 | JP           | In Force      | 2013-527698      | 9/9/2011    | 2013-541884    | 11/14/2013       | 5969992          | 7/15/2016  | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-KR-01 | KR           | In Force      | 10-2013-7008981  | 9/9/2011    | 20130103527    | 9/23/2013        | 10-1711036       | 2/22/2017  | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-US-01 | US           | Lapsed        | 12/636,629       | 12/11/2009  | 20110141229    | 6/16/2011        |                  |            | PANORAMA IMAGING USING SUPER-RESOLUTION                                                                                                   |
| 10002-0438-US-02 | US           | In Force      | 12/879,003       | 9/9/2010    | 20110141227    | 6/16/2011        | 10,080,006       | 9/18/2018  | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-US-03 | US           | Lapsed        | 16/132,044       | 9/14/2018   | 20190089941    | 3/21/2019        | 11,115,638       | 9/7/2021   | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0438-WO-01 | WO           | Lapsed        | PT/182011/002715 | 9/9/2010    | WO2012032412A2 | 3/15/2012        |                  |            | STEREOSCOPIC (3D) PANORAMA CREATION ON HANDHELD DEVICE                                                                                    |
| 10002-0448-US-01 | US           | In Force      | 13/077,936       | 3/31/2011   | 20120250937    | 10/4/2012        | 8,947,501        | 2/3/2015   | SCENE ENHANCEMENTS IN OFF-CENTER PERIPHERAL REGIONS FOR NONLINEAR LENS GEOMETRIES                                                         |
| 10002-0449-US-01 | US           | In Force      | 13/234,146       | 9/15/2011   | 20130070126    | 3/21/2013        | 8,493,460        | 7/23/2013  | REGISTRATION OF DIFFERENTIALLY SCALED IMAGES                                                                                              |
| 10002-0451-US-01 | US           | In Force      | 13/078,971       | 4/2/2011    | 20120249726    | 10/4/2012        | 8,982,180        | 3/17/2015  | FACE AND OTHER OBJECT DETECTION AND TRACKING IN OFF-CENTER PERIPHERAL REGIONS FOR NONLINEAR LENS GEOMETRIES                               |
| 2-0452-CN-01     | CN           | Lapsed        | 201680024259.7   | 2/4/2016    | 107924042      | 4/17/2018        |                  |            | AN OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                         |
| 2-0452-EP-01     | EP           | Lapsed        | 16702939.6       | 2/4/2016    | 3262451        | 1/3/2018         |                  |            | AN OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                         |
| 2-0452-EP-02     | EP           | Pending       | 19206816.1       | 2/4/2016    | 3623857        | 3/18/2020        |                  |            | AN OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                         |
| 2-0452-US-01     | US           | Lapsed        | 62/126,247       | 2/27/2015   |                |                  |                  |            | OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                            |
| 2-0452-US-02     | US           | In Force      | 15/053,863       | 2/25/2016   | 20160253559    | 9/1/2016         | 10,467,469       | 11/5/2019  | OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                            |
| 2-0452-WO-01     | WO           | Lapsed        | PT/EP2016/052395 | 2/4/2016    | 2016134942     | 9/1/2016         |                  |            | AN OPTICAL SYSTEM FOR AN IMAGE ACQUISITION DEVICE                                                                                         |
| 2-0453-CH-01     | CH           | In Force      | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-DE-01     | DE           | In Force      | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 602005007735.9   | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-EP-01     | EP           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-ES-01     | ES           | In Force      | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 2306153          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-FI-01     | FI           | In Force      | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-FR-01     | FR           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-GB-01     | GB           | Lapsed        | 200412175        | 6/1/2004    |                | 2/14/2007        | 200412175        | 6/30/2004  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-GB-02     | GB           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-IN-01     | IN           | Lapsed        | 7043/DELNP/2006  | 6/1/2005    |                | 8/31/2007        |                  |            | A METHOD OF IDENTIFYING A CHARACTERISTIC OF AN IMAGE                                                                                      |
| 2-0453-IT-01     | IT           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-NL-01     | NL           | In Force      | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-PL-01     | PL           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-SE-01     | SE           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-TK-01     | TK           | Lapsed        | 05747352.2       | 6/1/2005    | 1751695        | 2/14/2007        | 1751695          | 6/25/2008  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-US-01     | US           | In Force      | 11/596,655       | 6/1/2005    | 20080187183    | 8/7/2008         | 7,650,020        | 1/19/2010  | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |
| 2-0453-WO-01     | WO           | Lapsed        | PT/GB2005/002156 | 6/1/2005    | 2005119581     | 12/15/2005       |                  |            | IDENTIFICATION OF IMAGE CHARACTERISTICS                                                                                                   |

**PATENT**

**REEL: 066237 FRAME: 0390**



| Xperi Docket #    | Country Code | Patent Status | Application #     | Filing Date | Publication #   | Publication Date | Patent #         | Grant Date | Title                                                                                       |
|-------------------|--------------|---------------|-------------------|-------------|-----------------|------------------|------------------|------------|---------------------------------------------------------------------------------------------|
| IO0002-0454-US-01 | US           | In Force      | 11/363,500        | 2/27/2006   | 20070201728     | 8/30/2007        | 7,844,084        | 11/30/2010 | ROTATION COMPENSATED IRIS COMPARISON                                                        |
| IO0002-0474-US-01 | US           | In Force      | 15/048,149        | 2/19/2016   | 20170244881     | 8/24/2017        | 9,743,001        | 8/22/2017  | METHOD OF STABILIZING A SEQUENCE OF IMAGES                                                  |
| IO0002-0477-CN-01 | CN           | In Force      | 201780037476.4    | 6/2/2017    | 109477962       | 3/15/2019        | ZL201780037476.4 | 1/21/2022  | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-DE-01 | DE           | In Force      | 17727577.3        | 6/2/2017    | 3430464         | 1/23/2019        | 3430464          | 1/1/2020   | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-EP-01 | EP           | Lapsed        | 17727577.3        | 6/2/2017    | 3430464         | 1/23/2019        | 3430464          | 1/1/2020   | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-FR-01 | FR           | In Force      | 17727577.3        | 6/2/2017    | 3430464         | 1/23/2019        | 3430464          | 1/1/2020   | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-GB-01 | GB           | In Force      | 17727577.3        | 6/2/2017    | 3430464         | 1/23/2019        | 3430464          | 1/1/2020   | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-IN-01 | IN           | Lapsed        | 201917001200      | 6/2/2017    |                 |                  |                  |            | IRIS IMAGE ACQUISITION SYSTEM                                                               |
| IO0002-0477-KR-01 | KR           | Lapsed        | 10-2019-7001465   | 6/2/2017    |                 |                  |                  |            | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-NL-01 | NL           | In Force      | 17727577.3        | 6/2/2017    | 3430464         | 1/23/2019        | 3430464          | 1/1/2020   | AN IRIS IMAGE ACQUISITION SYSTEM                                                            |
| IO0002-0477-US-01 | US           | In Force      | 15/186,283        | 6/17/2016   | 20170366761     | 12/21/2017       | 10,212,366       | 2/19/2019  | IRIS IMAGE ACQUISITION SYSTEM                                                               |
| IO0002-0477-WO-01 | WO           | Lapsed        | PC1/EP2017/063435 | 6/2/2017    | 2017215952      | 12/21/2017       |                  |            | IRIS IMAGE ACQUISITION SYSTEM                                                               |
| IO0002-0478-US-01 | US           | Lapsed        | 62/249,798        | 11/2/2015   | 20170124394     | 5/4/2017         | 10,176,377       | 1/8/2019   | IRIS LIVENESS DETECTION FOR NEXT GENERATION SMARTPHONE BIOMETRICS                           |
| IO0002-0478-US-02 | US           | In Force      | 15/340,926        | 11/1/2016   | 20190138807     | 5/9/2019         | 10810423         | 10/20/2020 | IRIS LIVENESS DETECTION FOR MOBILE DEVICES                                                  |
| IO0002-0478-US-03 | US           | In Force      | 16/240,120        | 1/4/2019    | 20190138807     | 5/9/2019         | 10810423         | 10/20/2020 | IRIS LIVENESS DETECTION FOR MOBILE DEVICES                                                  |
| IO0002-0478-US-04 | US           | In Force      | 17/073,247        | 10/16/2020  | 20210034864     | 2/4/2021         | 11,288,504       | 3/29/2022  | IRIS LIVENESS DETECTION FOR MOBILE DEVICES                                                  |
| IO0002-0478-US-05 | US           | Pending       | 17/704,822        | 3/25/2022   |                 |                  |                  |            | IRIS LIVENESS DETECTION FOR MOBILE DEVICES                                                  |
| IO0002-0526-US-01 | US           | In Force      | 12/774,486        | 5/5/2010    | 20110273593     | 11/10/2011       | 8,482,636        | 7/9/2013   | DIGITAL ZOOM ON BAYER                                                                       |
| IO0002-0526-WO-01 | WO           | Lapsed        | PC1/EP2011/057154 | 5/5/2010    | WO2011138376A1  | 5/4/2011         |                  |            | DIGITAL ZOOM ON BAYER                                                                       |
| IO0002-0548-US-01 | US           | In Force      | 12/905,367        | 10/15/2010  | 20120093419     | 4/19/2012        | 8,687,894        | 4/1/2014   | CONTINUOUS EDGE AND DETAIL MAPPING USING A WEIGHTED MONOTONY MEASUREMENT                    |
| IO0002-0548-WO-01 | WO           | Lapsed        | PC1/EP2011/067942 | 10/15/2010  | WO2012049275    |                  |                  |            | CONTINUOUS EDGE AND DETAIL MAPPING USING A WEIGHTED MONOTONY MEASUREMENT                    |
| IO0006-0001-CN-01 | CN           | In Force      | 200980117890.1    | 5/20/2009   | 102037717       | 4/27/2011        | ZL200980117890.1 | 11/6/2013  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-CN-02 | CN           | In Force      | 201310438869.X    | 5/20/2009   | 103501416       | 1/8/2014         | ZL201310438869.X | 4/12/2017  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-DE-02 | DE           | In Force      | 18151530.5        | 5/20/2009   | 3328048         | 5/30/2018        | 3328048          | 4/21/2021  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-EP-01 | EP           | Lapsed        | 09763194.9        | 5/20/2009   | 2289235         | 3/2/2011         |                  |            | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-EP-02 | EP           | Lapsed        | 18151530.5        | 5/20/2009   | 3328048         | 5/30/2018        | 3328048          | 4/21/2021  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-EP-03 | EP           | Pending       | 21169308.0        | 5/20/2009   | 3876510         | 9/8/2021         |                  |            | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| IO0006-0001-FR-02 | FR           | In Force      | 18151530.5        | 5/20/2009   | 3328048         | 5/30/2018        | 3328048          | 4/21/2021  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-GB-02      | GB           | In Force      | 18151530.5        | 5/20/2009   | 3328048         | 5/30/2018        | 3328048          | 4/21/2021  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-JP-01      | JP           | Lapsed        | 2011510681        | 5/20/2009   | 2011-523538     | 8/11/2011        |                  |            | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-JP-02      | JP           | In Force      | 2014264372        | 5/20/2009   |                 | 9/7/2016         | 5989076          | 8/19/2016  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-JP-03      | JP           | In Force      | 2016-121809       | 5/20/2009   | 2016-197878     | 11/24/2016       | 6122184          | 4/7/2017   | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-JP-04      | JP           | In Force      | 2017-062561       | 5/20/2009   | 2017-163550     | 9/14/2017        | 6546613          | 6/28/2019  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-JP-05      | JP           | In Force      | 2019-115436       | 5/20/2009   | 2019-220957     | 12/26/2019       | 6767543          | 9/23/2020  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-KR-01      | KR           | In Force      | 10-2010-7028308   | 5/20/2009   | 20110010784     | 2/7/2011         | 10-1588877       | 1/20/2016  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-KR-02      | KR           | In Force      | 10-2016-7001433   | 5/20/2009   | 20160013263     | 2/3/2016         | 10-1733443       | 4/28/2017  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-KR-03      | KR           | In Force      | 10-2017-7011490   | 5/20/2009   | 10-2017-0051526 | 5/11/2017        | 10-1843994       | 3/26/2018  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-NL-02      | NL           | In Force      | 18151530.5        | 5/20/2009   | 3328048         | 5/30/2018        | 3328048          | 4/21/2021  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |
| 6-0001-SG-01      | SG           | In Force      | 2010079085        | 5/20/2009   |                 |                  | 166239           | 2/28/2011  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS |

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| Xperi Docket #   | Country Code | Patent Status | Application # | Filing Date | Publication # | Publication Date | Patent #   | Grant Date | Title                                                                                                                                              |
|------------------|--------------|---------------|---------------|-------------|---------------|------------------|------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 10006-0001-US-02 | US           | In Force      | 12/935,504    | 5/20/2009   | 20110069189   | 3/24/2011        | 8,902,321  | 12/2/2014  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS                                                        |
| 10006-0001-US-03 | US           | In Force      | 14/447,477    | 7/30/2014   | 20140333787   | 11/13/2014       | 8,896,719  | 11/25/2014 | SYSTEMS AND METHODS FOR PARALLAX MEASUREMENT USING CAMERA ARRAYS INCORPORATING 3 X 3 CAMERA CONFIGURATIONS                                         |
| 10006-0001-US-04 | US           | In Force      | 14/447,485    | 7/30/2014   | 20140333731   | 11/13/2014       | 9,041,823  | 5/26/2015  | SYSTEMS AND METHODS FOR PERFORMING POST CAPTURE REFOCUS USING IMAGES CAPTURED BY CAMERA ARRAYS                                                     |
| 10006-0001-US-05 | US           | In Force      | 14/447,494    | 7/30/2014   | 20140340539   | 11/20/2014       | 9,049,390  | 6/2/2015   | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY ARRAYS INCLUDING POLYCHROMATIC CAMERAS                                                              |
| 10006-0001-US-06 | US           | In Force      | 14/447,508    | 7/30/2014   | 20140333764   | 11/13/2014       | 9,060,120  | 6/16/2015  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING IMAGES CAPTURED BY CAMERA ARRAYS                                                               |
| 10006-0001-US-07 | US           | In Force      | 14/459,293    | 8/13/2014   | 20140354855   | 12/4/2014        | 9,049,367  | 6/2/2015   | SYSTEMS AND METHODS FOR SYNTHESIZING HIGHER RESOLUTION IMAGES USING IMAGES CAPTURED BY CAMERA ARRAYS                                               |
| 10006-0001-US-08 | US           | In Force      | 14/459,296    | 8/13/2014   | 20140354844   | 12/4/2014        | 8,885,059  | 11/11/2014 | SYSTEMS AND METHODS FOR MEASURING DEPTH USING IMAGES CAPTURED BY CAMERA ARRAYS                                                                     |
| 10006-0001-US-09 | US           | In Force      | 14/475,449    | 9/2/2014    | 20140368683   | 12/18/2014       | 9,060,124  | 6/16/2015  | CAPTURING AND PROCESSING OF IMAGES USING NON-MONOLITHIC CAMERA ARRAYS                                                                              |
| 10006-0001-US-10 | US           | In Force      | 14/475,466    | 9/2/2014    | 20140368662   | 12/18/2014       | 9,049,391  | 6/2/2015   | CAPTURING AND PROCESSING OF NEAR-IR IMAGES INCLUDING OCCLUSIONS USING CAMERA ARRAYS INCORPORATING NEAR-IR LIGHT SOURCES                            |
| 10006-0001-US-11 | US           | In Force      | 14/475,473    | 9/2/2014    | 20140368684   | 12/18/2014       | 9,060,142  | 6/16/2015  | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCLUDING HETEROGENEOUS OPTICS                                                        |
| 10006-0001-US-12 | US           | In Force      | 14/475,477    | 9/2/2014    | 20140368685   | 12/18/2014       | 9,041,829  | 5/26/2015  | CAPTURING AND PROCESSING OF HIGH DYNAMIC RANGE IMAGES USING CAMERA ARRAYS                                                                          |
| 10006-0001-US-13 | US           | In Force      | 14/497,159    | 9/25/2014   | 20150009362   | 1/8/2015         | 9,060,121  | 6/16/2015  | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCLUDING CAMERAS DEDICATED TO SAMPLING LUMA AND CAMERAS DEDICATED TO SAMPLING CHROMA |
| 10006-0001-US-14 | US           | In Force      | 14/497,171    | 9/25/2014   | 20150009353   | 1/8/2015         | 9,055,213  | 6/9/2015   | SYSTEMS AND METHODS FOR MEASURING DEPTH USING IMAGES CAPTURED BY MONOLITHIC CAMERA ARRAYS INCLUDING AT LEAST ONE BAYER CAMERA                      |
| 10006-0001-US-15 | US           | In Force      | 14/497,180    | 9/25/2014   | 20150009354   | 1/8/2015         | 9,077,893  | 7/7/2015   | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY NON-GRID CAMERA ARRAYS                                                                              |
| 10006-0001-US-16 | US           | In Force      | 14/704,909    | 5/5/2015    | 20150235371   | 8/20/2015        | 9,235,898  | 1/12/2016  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING LIGHT FOCUSED ON AN IMAGE SENSOR BY A LENS ELEMENT ARRAY                                       |
| 10006-0001-US-17 | US           | In Force      | 14/988,670    | 1/5/2016    | 20160267665   | 9/15/2016        | 9,576,369  | 2/21/2017  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING IMAGES CAPTURED BY CAMERA ARRAYS INCORPORATING CAMERAS HAVING DIFFERENT FIELDS OF VIEW         |
| 10006-0001-US-18 | US           | In Force      | 15/095,930    | 4/11/2016   | 20160227195   | 8/4/2016         | 9,485,496  | 11/1/2016  | SYSTEMS AND METHODS FOR MEASURING DEPTH USING IMAGES CAPTURED BY A CAMERA ARRAY INCLUDING CAMERAS SURROUNDING A CENTRAL CAMERA                     |
| 10006-0001-US-19 | US           | In Force      | 15/242,598    | 8/22/2016   | 20170006233   | 1/5/2017         | 9,712,759  | 7/18/2017  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING A CAMERA ARRAYS INCORPORATING MONOCHROME AND COLOR CAMERAS                                     |
| 10006-0001-US-20 | US           | In Force      | 15/651,877    | 7/17/2017   | 20180007284   | 1/4/2018         | 10,027,901 | 7/17/2018  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING A CAMERA ARRAYS INCORPORATING MONOCHROME AND COLOR CAMERAS                                     |
| 10006-0002-CA-01 | CA           | Lapsed        | 2821965       | 12/14/2011  |               |                  |            |            | SYSTEM AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                        |
| 6-0002-DE-01     | DE           | In Force      | 11848308.0    | 12/14/2011  | 2652678       | 10/23/2013       | 2652678    | 9/20/2017  | SYSTEM AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                        |
| 6-0002-EP-01     | EP           | Lapsed        | 11848308.0    | 12/14/2011  | 2652678       | 10/23/2013       | 2652678    | 9/20/2017  | SYSTEM AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                        |
| 6-0002-FR-01     | FR           | Lapsed        | 11848308.0    | 12/14/2011  | 2652678       | 10/23/2013       | 2652678    | 9/20/2017  | SYSTEM AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                        |
| 6-0002-GB-01     | GB           | Lapsed        | 11848308.0    | 12/14/2011  | 2652678       | 10/23/2013       | 2652678    | 9/20/2017  | SYSTEM AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                        |
| 6-0002-SG-01     | SG           | Lapsed        | 2013045703    | 12/14/2011  |               |                  | 191151     | 3/3/2015   | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING SUPER-RESOLUTION PROCESSES                                                       |
| 6-0002-US-01     | US           | In Force      | 12/967,807    | 12/14/2010  | 20120147205   | 6/14/2012        | 8,878,950  | 11/4/2014  | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGES CAPTURED BY AN ARRAY OF INDEPENDENTLY CONTROLLABLE IMAGERS                |
| 6-0002-US-02     | US           | In Force      | 14/519,659    | 10/21/2014  | 20150036014   | 2/5/2015         | 9,361,662  | 6/7/2016   | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING A SET OF GEOMETRICALLY REGISTERED IMAGES                                         |
| 6-0002-US-03     | US           | In Force      | 14/520,266    | 10/21/2014  | 20150042833   | 2/12/2015        | 9,047,684  | 6/2/2015   | SYSTEMS AND METHODS FOR DYNAMIC REFOCUSING OF HIGH RESOLUTION IMAGES GENERATED USING IMAGES CAPTURED BY A PLURALITY OF IMAGERS                     |
| 6-0002-US-04     | US           | In Force      | 14/520,269    | 10/21/2014  | 20150036015   | 2/5/2015         | 9,041,824  | 5/26/2015  | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGES CAPTURED BY AN ARRAY OF INDEPENDENTLY CONTROLLABLE IMAGERS                |
| 6-0002-US-05     | US           | In Force      | 15/170,788    | 6/1/2016    | 20170053382   | 2/23/2017        | 10,366,472 | 7/30/2019  | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGES CAPTURED BY AN ARRAY OF INDEPENDENTLY CONTROLLABLE IMAGERS                |
| 6-0002-US-06     | US           | In Force      | 16/521,365    | 7/24/2019   | 20190347768   | 11/14/2019       | 10,839,485 | 11/17/2020 | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGES CAPTURED BY AN ARRAY OF INDEPENDENTLY CONTROLLABLE IMAGERS                |

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**REEL: 066237 FRAME: 0392**

| Xperi Docket #   | Country Code | Patent Status | Application #   | Filing Date | Publication #   | Publication Date | Patent #         | Grant Date | Title                                                                                                                                           |
|------------------|--------------|---------------|-----------------|-------------|-----------------|------------------|------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 10006-0002-US-07 | US           | Pending       | 17/098,432      | 11/15/2020  | 20210133927     | 5/6/2021         |                  |            | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGES CAPTURED BY AN ARRAY OF INDEPENDENTLY CONTROLLABLE IMAGERS             |
| 10006-0003-EP-01 | EP           | Lapsed        | 10832330.4      | 11/22/2010  | 2502115         | 9/26/2012        |                  |            | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS                                                     |
| 10006-0003-TW-01 | TW           | In Force      | 99147177        | 12/31/2010  | 201228382       | 5/21/2016        | 1535292          | 5/21/2016  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS                                                     |
| 10006-0003-US-03 | US           | In Force      | 12/952,106      | 11/22/2010  | 20110122308     | 5/26/2011        | 8,514,491        | 8/20/2013  | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS                                                     |
| 10006-0003-US-04 | US           | In Force      | 13/948,054      | 7/22/2013   | 20130308197     | 11/21/2013       | 8,861,089        | 10/14/2014 | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS CAPTURED BY HETEROGENEOUS CAMERA ARRAYS                                                 |
| 10006-0003-US-05 | US           | In Force      | 14/475,481      | 9/2/2014    | 20140368686     | 12/18/2014       | 9,264,610        | 2/16/2016  | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCORPORATING CAMERAS WITH TELEPHOTO AND CONVENTIONAL LENSES TO GENERATE DEPT MAPS |
| 10006-0003-US-06 | US           | Lapsed        | 15/043,997      | 2/15/2016   | 20160269664     | 9/15/2016        |                  |            | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCORPORATING CAMERAS WITH TELEPHOTO AND CONVENTIONAL LENSES TO GENERATE DEPT MAPS |
| 10006-0003-US-07 | US           | In Force      | 15/456,931      | 3/13/2017   | 20170187933     | 6/29/2017        | 10,306,120       | 5/28/2019  | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCORPORATING CAMERAS WITH TELEPHOTO AND CONVENTIONAL LENSES TO GENERATE DEPT MAPS |
| 10006-0003-US-08 | US           | In Force      | 16/422,210      | 5/24/2019   | 20190289176     | 9/19/2019        | 10,735,635       | 8/4/2020   | CAPTURING AND PROCESSING OF IMAGES CAPTURED BY CAMERA ARRAYS INCORPORATING CAMERAS WITH TELEPHOTO AND CONVENTIONAL LENSES TO GENERATE DEPT MAPS |
| 10006-0004-US-01 | US           | In Force      | 12/952,134      | 11/22/2010  | 20110080487     | 4/7/2011         | 8,866,920        | 10/21/2014 | CAPTURING AND PROCESSING OF IMAGES USING MONOLITHIC CAMERA ARRAY WITH HETEROGENEOUS IMAGERS                                                     |
| 10006-0004-US-02 | US           | In Force      | 14/459,276      | 8/13/2014   | 20140354843     | 12/4/2014        | 9,049,411        | 6/2/2015   | CAMERA ARRAYS INCORPORATING 3 X 3 IMAGER CONFIGURATIONS                                                                                         |
| 10006-0004-US-03 | US           | In Force      | 14/459,280      | 8/13/2014   | 20140347509     | 11/27/2014       | 9,124,815        | 9/1/2015   | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS CAPTURED BY ARRAYS OF LUMA AND CHROMA CAMERAS                                           |
| 10006-0004-US-04 | US           | In Force      | 14/459,282      | 8/13/2014   | 20140355870     | 12/4/2014        | 9,094,661        | 7/28/2015  | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS USING A SET OF IMAGES CONTAINING A BASELINE IMAGE                                                 |
| 10006-0004-US-05 | US           | In Force      | 14/459,283      | 8/13/2014   | 20140354853     | 12/4/2014        | 9,055,233        | 6/9/2015   | SYSTEMS AND METHODS FOR SYNTHESIZING HIGHER RESOLUTION IMAGES USING A SET OF IMAGES CONTAINING A BASELINE IMAGE                                 |
| 10006-0004-US-06 | US           | In Force      | 14/459,286      | 8/13/2014   | 20140354854     | 12/4/2014        | 9,191,580        | 11/17/2015 | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS CAPTURED BY CAMERA ARRAYS                                                               |
| 10006-0004-US-07 | US           | In Force      | 14/459,288      | 8/13/2014   | 20140354773     | 12/4/2014        | 9,049,381        | 6/2/2015   | SYSTEMS AND METHODS FOR NORMALIZING IMAGE DATA CAPTURED BY CAMERA ARRAYS                                                                        |
| 10006-0004-US-08 | US           | In Force      | 14/704,920      | 5/5/2015    | 20150234151     | 8/20/2015        | 9,188,765        | 11/17/2015 | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS FOCUSED ON AN IMAGE SENSOR BY A LENS STACK ARRAY                                        |
| 10006-0004-US-09 | US           | In Force      | 14/943,009      | 11/16/2015  | 20160269650     | 9/15/2016        | 9,749,547        | 8/29/2017  | CAPTURING AND PROCESSING OF IMAGES USING CAMERA ARRAY INCORPORATING BAYER CAMERAS HAVING DIFFERENT FIELDS OF VIEW                               |
| 10006-0004-US-10 | US           | In Force      | 15/687,882      | 8/28/2017   | 20180048830     | 2/15/2018        | 10,142,560       | 11/27/2018 | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS CAPTURED BY AN IMAGE SENSOR BY A LENS STACK ARRAY                                       |
| 6-0004-US-11     | US           | In Force      | 16/199,566      | 11/26/2018  | 20190109998     | 4/11/2019        | 10,375,319       | 8/6/2019   | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS FOCUSED ON AN IMAGE SENSOR BY A LENS STACK ARRAY                                        |
| 6-0004-US-12     | US           | In Force      | 16/529,522      | 8/1/2019    | 20190356863     | 11/21/2019       | 10,694,114       | 6/23/2020  | CAPTURING AND PROCESSING OF IMAGES INCLUDING OCCLUSIONS FOCUSED ON AN IMAGE SENSOR BY A LENS STACK ARRAY                                        |
| 6-0004-US-13     | US           | Pending       | 16/907,016      | 6/19/2020   | 20200389604     | 12/10/2020       | 11,412,158       | 8/9/2022   | FABRICATION PROCESS FOR MASTERING IMAGE LENS ARRAYS                                                                                             |
| 6-0005-EP-01     | EP           | Lapsed        | 11/757001.0     | 3/17/2011   | 2548071         | 1/23/2013        |                  |            | FABRICATION PROCESS FOR MASTERING IMAGE LENS ARRAYS                                                                                             |
| 6-0005-JP-01     | JP           | Lapsed        | 2013500207      | 3/17/2011   | 2013-522681     | 6/13/2013        |                  |            | FABRICATION PROCESS FOR MASTERING IMAGE LENS ARRAYS                                                                                             |
| 6-0005-KR-01     | KR           | Lapsed        | 10-2012-7027121 | 3/17/2011   | 10-2013-0004505 | 1/10/2013        | 184118           | 7/31/2013  | FABRICATION PROCESS FOR MASTERING IMAGE LENS ARRAYS                                                                                             |
| 6-0005-SG-01     | SG           | Lapsed        | 2012068938      | 3/17/2011   |                 |                  |                  |            | FABRICATION PROCESS FOR MASTERING IMAGE LENS ARRAYS                                                                                             |
| 6-0005-US-02     | US           | In Force      | 13/050,429      | 3/17/2011   | 20110241234     | 10/6/2011        | 8,231,814        | 7/31/2012  | FABRICATION PROCESS FOR MASTERING IMAGING LENS ARRAYS                                                                                           |
| 6-0006-CN-01     | CN           | 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                                                                      |
| 6-0006-CN-02     | CN           | In Force      | 201710422675.9  | 5/11/2012   | 107404609       | 11/28/2017       | ZL201710422675.9 | 2/11/2020  | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-DE-01     | DE           | In Force      | 12782935.6      | 5/11/2012   | 2708019         | 3/19/2014        | 2708019          | 10/16/2019 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-EP-01     | EP           | Lapsed        | 12782935.6      | 5/11/2012   | 2708019         | 3/19/2014        | 2708019          | 10/16/2019 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-FR-01     | FR           | In Force      | 12782935.6      | 5/11/2012   | 2708019         | 3/19/2014        | 2708019          | 10/16/2019 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-GB-01     | GB           | In Force      | 12782935.6      | 5/11/2012   | 2708019         | 3/19/2014        | 2708019          | 10/16/2019 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-JP-01     | JP           | Lapsed        | 2014510522      | 5/11/2012   | 2014-519741     | 8/14/2014        |                  |            | SYSTEMS AND METHODS FOR TRANSMITTING ARRAY CAMERA DATA                                                                                          |
| 6-0006-KR-01     | KR           | In Force      | 10-2013-7032457 | 5/11/2012   | 10-2014-0045373 | 4/16/2014        | 10-1973822       | 4/23/2019  | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-NL-01     | NL           | In Force      | 12782935.6      | 5/11/2012   | 2708019         | 3/19/2014        | 2708019          | 10/16/2019 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-US-02     | US           | In Force      | 13/470,252      | 5/11/2012   | 20120287291     | 11/15/2012       | 8,305,456        | 11/6/2012  | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-US-03     | US           | In Force      | 13/668,057      | 11/2/2012   | 20130057710     | 3/7/2013         | 8,692,893        | 4/8/2014   | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |
| 6-0006-US-04     | US           | In Force      | 14/246,948      | 4/7/2014    | 20140218546     | 8/7/2014         | 9,197,821        | 11/24/2015 | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                      |

**PATENT**

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| Xperi Docket #   | Country Code | Patent Status | Application #   | Filing Date | Publication # | Publication Date | Patent #         | Grant Date | Title                                                                                                                                                                                                           |
|------------------|--------------|---------------|-----------------|-------------|---------------|------------------|------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I0006-0006-US-05 | US           | In Force      | 14/936,199      | 11/9/2015   | 20160259626   | 9/15/2016        | 9,866,739        | 1/9/2018   | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                                                                                      |
| I0006-0006-US-06 | US           | In Force      | 15/864,429      | 1/8/2018    | 20180131852   | 5/10/2018        | 10,218,889       | 2/26/2019  | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                                                                                      |
| I0006-0006-US-07 | US           | In Force      | 16/271,709      | 2/8/2018    | 20190174040   | 6/6/2019         | 10,742,861       | 8/11/2020  | SYSTEMS AND METHODS FOR TRANSMITTING AND RECEIVING ARRAY CAMERA IMAGE DATA                                                                                                                                      |
| I0006-0007-US-02 | US           | In Force      | 13/106,804      | 5/12/2011   | 20110279721   | 11/17/2011       | 8,928,793        | 1/6/2015   | IMAGER ARRAY INTERFACES                                                                                                                                                                                         |
| I0006-0007-US-03 | US           | In Force      | 14/880,907      | 10/12/2015  | 20160269627   | 9/15/2016        | 9,936,148        | 4/3/2018   | IMAGER ARRAY INTERFACES                                                                                                                                                                                         |
| I0006-0007-US-04 | US           | In Force      | 15/943,512      | 4/2/2018    | 20180227511   | 8/9/2018         | 10,455,168       | 10/22/2019 | IMAGER ARRAY INTERFACES                                                                                                                                                                                         |
| I0006-0008-EP-01 | EP           | Lapsed        | 12804,266.0     | 6/25/2012   | 2726930       | 5/7/2014         |                  |            | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-JP-01 | JP           | Lapsed        | 2014518889      | 6/25/2012   | 2014-521117   | 8/25/2014        |                  |            | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-KR-01 | KR           | Lapsed        | 10-2013-7035076 | 6/25/2012   |               |                  |                  |            | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-SG-01 | SG           | In Force      | 2013093141      | 6/25/2012   |               |                  | 2013093141       | 12/2/2014  | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-US-02 | US           | Lapsed        | 13/536,520      | 6/28/2012   | 20130003184   | 1/3/2013         | 8,804,255        | 8/12/2014  | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-US-03 | US           | Lapsed        | 13/832,120      | 3/15/2013   | 20130265459   | 10/10/2013       |                  |            | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-US-04 | US           | In Force      | 14/281,534      | 5/19/2014   | 20140347748   | 11/27/2014       | 9,128,228        | 9/8/2015   | OPTICAL ARRANGEMENTS FOR USE WITH AN ARRAY CAMERA                                                                                                                                                               |
| I0006-0008-US-05 | US           | Lapsed        | 14/705,919      | 5/6/2015    | 20150244934   | 8/27/2015        | 9,578,237        | 2/21/2017  | ARRAY CAMERA'S INCORPORATING MONOLITHIC ARRAY CAMERA MODULES WITH HIGH MITF LENS STACKS FOR CAPTURE OF IMAGES USED IN SUPER-RESOLUTION PROCESSING                                                               |
| I0006-0008-US-06 | US           | Lapsed        | 14/705,925      | 5/6/2015    | 20150296137   | 10/15/2015       | 9,516,222        | 12/6/2016  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-DE-01 | DE           | In Force      | 13/751,714.0    | 2/21/2013   | 2817955       | 12/31/2014       | 2817955          | 4/11/2018  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-EP-01 | EP           | Lapsed        | 13/751,714.0    | 2/21/2013   | 2817955       | 12/31/2014       | 2817955          | 4/11/2018  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-FR-01 | FR           | Lapsed        | 13/751,714.0    | 2/21/2013   | 2817955       | 12/31/2014       | 2817955          | 4/11/2018  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-GB-01 | GB           | Lapsed        | 13/751,714.0    | 2/21/2013   | 2817955       | 12/31/2014       | 2817955          | 4/11/2018  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-NL-01 | NL           | In Force      | 13/751,714.0    | 2/21/2013   | 2817955       | 12/31/2014       | 2817955          | 4/11/2018  | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-US-02 | US           | In Force      | 13/773,284      | 2/21/2013   | 20130215108   | 8/22/2013        | 9,412,206        | 8/9/2016   | SYSTEMS AND METHODS FOR THE MANIPULATION OF CAPTURED LIGHT FIELD IMAGE DATA                                                                                                                                     |
| I0006-0009-US-03 | US           | In Force      | 14/705,914      | 5/6/2015    | 20150235476   | 8/20/2015        | 9,754,422        | 9/5/2017   | SYSTEMS AND METHOD FOR PERFORMING DEPTH BASED IMAGE EDITING                                                                                                                                                     |
| I0006-0009-US-04 | US           | In Force      | 15/694,700      | 9/1/2017    | 20170365104   | 12/21/2017       | 10,311,649       | 6/4/2019   | SYSTEMS AND METHOD FOR CORRECTING USER IDENTIFIED ARTIFACTS IN LIGHT FIELD IMAGES                                                                                                                               |
| I0006-0010-US-02 | US           | In Force      | 14/028,278      | 9/16/2013   | 20140079336   | 3/20/2014        | 9,214,013        | 12/15/2015 | SYSTEMS AND METHODS FOR CORRECTING USER IDENTIFIED ARTIFACTS IN LIGHT FIELD IMAGES                                                                                                                              |
| I0006-0011-US-02 | US           | In Force      | 14/204,990      | 3/11/2014   |               |                  | 9,521,416        | 12/13/2016 | SYSTEMS AND METHODS FOR IMAGE DATA COMPRESSION                                                                                                                                                                  |
| I0006-0012-CN-01 | CN           | In Force      | 201380029203.7  | 5/1/2013    | 104335246     | 2/4/2015         | ZL201380029203.7 | 9/4/2018   | CAMERA MODULES PATTERNED WITH PI FILTER GROUPS                                                                                                                                                                  |
| I0006-0012-EP-01 | EP           | Lapsed        | 13/875,220.8    | 5/1/2013    | 2845167       | 3/11/2015        |                  |            | CAMERA MODULES PATTERNED WITH PI FILTER GROUPS                                                                                                                                                                  |
| I0006-0012-JP-01 | JP           | Lapsed        | 2015510443      | 5/1/2013    | 2015-521411   | 7/27/2015        |                  |            | CAMERA MODULES PATTERNED WITH PI FILTER GROUPS                                                                                                                                                                  |
| I0006-0012-US-02 | US           | In Force      | 13/875,248      | 5/1/2013    | 20130293760   | 11/7/2013        | 9,210,392        | 12/8/2015  | CAMERA MODULES PATTERNED WITH PI FILTER GROUPS                                                                                                                                                                  |
| I0006-0012-US-03 | US           | In Force      | 14/952,195      | 11/25/2015  | 20160165147   | 6/9/2016         | 9,706,132        | 7/11/2017  | CAMERA MODULES PATTERNED WITH PI FILTER GROUPS                                                                                                                                                                  |
| I0006-0013-US-01 | US           | In Force      | 14/195,675      | 3/3/2014    |               |                  |                  |            | 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 |
| I0006-0014-US-03 | US           | In Force      | 14/079,510      | 11/13/2013  | 20140132810   | 5/15/2014        | 9,638,883        | 5/2/2017   | SYSTEMS AND METHODS FOR ARRAY CAMERA FOCAL PLANE CONTROL                                                                                                                                                        |
| I0006-0014-US-04 | US           | In Force      | 14/855,715      | 9/16/2015   | 20160249001   | 8/25/2016        | 9,749,568        | 8/29/2017  | SYSTEMS AND METHODS FOR ARRAY CAMERA FOCAL PLANE CONTROL                                                                                                                                                        |
| I0006-0015-US-02 | US           | In Force      | 14/200,629      | 3/7/2014    |               |                  | 9,445,003        | 9/13/2016  | DECONVOLUTION BASED ON MOTION AND DEPTH INFORMATION                                                                                                                                                             |
| I0006-0015-US-03 | US           | In Force      | 15/258,947      | 9/7/2016    | 20170070673   | 3/9/2017         | 9,955,070        | 4/24/2018  | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGE DECONVOLUTION BASED ON MOTION AND DEPTH INFORMATION                                                                                     |
| I0006-0015-US-04 | US           | In Force      | 15/960,168      | 4/23/2018   | 20180302554   | 10/18/2018       | 10,542,208       | 1/21/2020  | SYSTEMS AND METHODS FOR SYNTHESIZING HIGH RESOLUTION IMAGES USING IMAGE DECONVOLUTION BASED ON MOTION AND DEPTH INFORMATION                                                                                     |
| I0006-0016-US-02 | US           | Lapsed        | 14/199,977      | 3/6/2014    | 20140267286   | 9/18/2014        |                  |            | SYSTEMS AND METHODS FOR PROVIDING AN ARRAY PROJECTOR                                                                                                                                                            |
| I0006-0016-US-03 | US           | Lapsed        | 15/287,602      | 10/6/2016   |               |                  |                  |            | SYSTEMS AND METHODS FOR PROVIDING AN ARRAY PROJECTOR                                                                                                                                                            |
| I0006-0017-CN-01 | CN           | In Force      | 201380040238.0  | 6/28/2013   | 104508681     | 4/8/2015         | ZL201380040238.0 | 10/30/2018 | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS, OPTIC ARRAYS AND SENSORS                                                                                                                             |
| I0006-0017-EP-01 | EP           | Lapsed        | 13810,229.8     | 6/28/2013   | 2873028       | 5/20/2015        |                  |            | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS, OPTIC ARRAYS AND SENSORS                                                                                                                             |
| I0006-0017-JP-01 | JP           | Lapsed        | 2015520605      | 6/28/2013   | 2015-534734   | 12/3/2015        |                  |            | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS, OPTIC ARRAYS AND SENSORS                                                                                                                             |
| I0006-0017-KR-01 | KR           | Lapsed        | 10-2015-7002308 | 6/28/2013   |               |                  |                  |            | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS, OPTIC ARRAYS AND SENSORS                                                                                                                             |
| I0006-0017-US-02 | US           | Lapsed        | 13/931,724      | 6/28/2013   | 20140002675   | 1/2/2014         | 9,100,635        | 8/4/2015   | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS AND OPTIC ARRAYS                                                                                                                                      |
| I0006-0017-US-03 | US           | In Force      | 14/805,412      | 7/21/2015   | 20150326852   | 11/12/2015       | 9,807,382        | 10/31/2017 | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS AND OPTIC ARRAYS                                                                                                                                      |
| I0006-0017-US-04 | US           | In Force      | 15/797,126      | 10/30/2017  | 20180109782   | 4/19/2018        | 10,334,241       | 6/25/2019  | SYSTEMS AND METHODS FOR DETECTING DEFECTIVE CAMERA ARRAYS AND OPTIC ARRAYS                                                                                                                                      |
| I0006-0018-AU-01 | AU           | Lapsed        | 2013305770      | 8/21/2013   |               |                  |                  |            | ARRAY CAMERAS                                                                                                                                                                                                   |
| I0006-0018-CA-01 | CA           | Lapsed        | 2881131         | 8/21/2013   |               |                  |                  |            | ARRAY CAMERAS                                                                                                                                                                                                   |
| I0006-0018-CN-01 | CN           | 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                                                                                                                |

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| Xperi Docket #   | Country Code | Patent Status | Application #   | Filing Date | Publication #   | Publication Date | Patent #                   | Grant Date | Title                                                                                                                                                                        |
|------------------|--------------|---------------|-----------------|-------------|-----------------|------------------|----------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I0006-0018-CN-02 | CN           | In Force      | 201710550511.4  | 8/21/2013   | 107346061       | 11/14/2017       |                            | 4/24/2020  | SYSTEMS AND METHODS FOR PARALLAX DETECTION AND CORRECTION IN IMAGES CAPTURED USING ARRAY CAMERAS                                                                             |
| I0006-0018-DE-01 | DE           | In Force      | 13830945.5      | 8/21/2013   | 2888720         | 7/1/2015         | 602013076353.4 (EP2888720) | 3/17/2021  | SYSTEM AND METHOD FOR DEPTH ESTIMATION FROM IMAGES CAPTURED USING ARRAY CAMERAS                                                                                              |
| I0006-0018-EP-01 | EP           | Lapsed        | 13830945.5      | 8/21/2013   | 2888720         | 7/1/2015         | 2888720                    | 3/17/2021  | SYSTEM AND METHOD FOR DEPTH ESTIMATION FROM IMAGES CAPTURED USING ARRAY CAMERAS                                                                                              |
| I0006-0018-EP-02 | EP           | Pending       | 21155002.5      | 8/21/2013   | 3869797         | 8/25/2021        |                            |            | SYSTEMS AND METHODS FOR PARALLAX DETECTION AND CORRECTION IN IMAGES CAPTURED USING ARRAY CAMERAS                                                                             |
| I0006-0018-FR-01 | FR           | In Force      | 13830945.5      | 8/21/2013   | 2888720         | 7/1/2015         | 2888720                    | 3/17/2021  | SYSTEM AND METHOD FOR DEPTH ESTIMATION FROM IMAGES CAPTURED USING ARRAY CAMERAS                                                                                              |
| I0006-0018-GB-01 | GB           | In Force      | 13830945.5      | 8/21/2013   | 2888720         | 7/1/2015         | 2888720                    | 3/17/2021  | SYSTEM AND METHOD FOR DEPTH ESTIMATION FROM IMAGES CAPTURED USING ARRAY CAMERAS                                                                                              |
| I0006-0018-KR-01 | KR           | In Force      | 10-2015-7006433 | 8/21/2013   | 10-2015-0046113 | 4/29/2015        | 10-2111181                 | 5/8/2020   | SYSTEMS AND METHODS FOR PARALLAX DETECTION AND CORRECTION IN IMAGES CAPTURED USING ARRAY CAMERAS                                                                             |
| I0006-0018-NL-01 | NL           | In Force      | 13830945.5      | 8/21/2013   | 2888720         | 7/1/2015         | 2888720                    | 3/17/2021  | SYSTEM AND METHOD FOR DEPTH ESTIMATION FROM IMAGES CAPTURED USING ARRAY CAMERAS                                                                                              |
| I0006-0018-SG-01 | SG           | In Force      | 11201500910R    | 8/21/2013   |                 |                  | 11201500910R               | 10/15/2015 | SYSTEMS AND METHODS FOR PARALLAX DETECTION AND CORRECTION IN IMAGES CAPTURED USING ARRAY CAMERAS                                                                             |
| I0006-0018-US-03 | US           | In Force      | 13/972,881      | 8/21/2013   |                 |                  | 8,619,082                  | 12/31/2013 | 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 |
| I0006-0018-US-04 | US           | In Force      | 14/144,458      | 12/30/2013  |                 |                  | 8,780,113                  | 7/15/2014  | SYSTEMS AND METHODS FOR PERFORMING DEPTH ESTIMATION USING AN ARRAY OF INDEPENDENTLY CONTROLLABLE SPECTRAL CHANNELS                                                           |
| I0006-0018-US-05 | US           | In Force      | 14/329,754      | 7/11/2014   | 20140321712     | 10/30/2014       | 9,240,049                  | 1/19/2016  | SYSTEMS AND METHODS FOR MEASURING DEPTH USING AN ARRAY OF INDEPENDENTLY CONTROLLABLE CAMERAS                                                                                 |
| I0006-0018-US-06 | US           | In Force      | 14/526,364      | 10/28/2014  | 20150049915     | 2/19/2015        | 9,123,117                  | 9/1/2015   | SYSTEMS AND METHODS FOR GENERATING DEPTH MAPS AND CORRESPONDING CONFIDENCE MAPS INDICATING DEPTH ESTIMATION RELIABILITY                                                      |
| I0006-0018-US-07 | US           | In Force      | 14/526,377      | 10/28/2014  | 20150042766     | 2/12/2015        | 9,123,118                  | 9/1/2015   | SYSTEM AND METHODS FOR MEASURING DEPTH USING AN ARRAY CAMERA EMPLOYING A BAYER FILTER                                                                                        |
| I0006-0018-US-08 | US           | In Force      | 14/526,392      | 10/28/2014  | 20150049916     | 2/19/2015        | 9,235,900                  | 1/12/2016  | SYSTEMS AND METHODS FOR ESTIMATING DEPTH AND VISIBILITY FROM A REFERENCE VIEWPOINT FOR PIXELS IN A SET OF IMAGES CAPTURED FROM DIFFERENT VIEWPOINTS                          |
| I0006-0018-US-09 | US           | In Force      | 14/526,398      | 10/28/2014  | 20150049917     | 2/19/2015        | 9,147,254                  | 9/29/2015  | SYSTEMS AND METHODS FOR MEASURING DEPTH IN THE PRESENCE OF OCCLUSIONS USING A SUBSET OF IMAGES                                                                               |
| I0006-0018-US-10 | US           | In Force      | 14/526,407      | 10/28/2014  | 20150042767     | 2/12/2015        | 9,129,377                  | 9/8/2015   | SYSTEMS AND METHODS FOR MEASURING DEPTH BASED UPON OCCLUSION PATTERNS IN IMAGES                                                                                              |
| I0006-0018-US-11 | US           | In Force      | 14/988,680      | 1/5/2016    | 20160267672     | 9/15/2016        | 9,858,673                  | 1/2/2018   | SYSTEMS AND METHODS FOR ESTIMATING DEPTH AND VISIBILITY FROM A REFERENCE VIEWPOINT FOR PIXELS IN A SET OF IMAGES CAPTURED FROM DIFFERENT VIEWPOINTS                          |
| I0006-0018-US-12 | US           | In Force      | 15/858,974      | 12/29/2017  | 20180211402     | 7/26/2018        | 10,380,752                 | 8/13/2019  | SYSTEMS AND METHODS FOR ESTIMATING DEPTH AND VISIBILITY FROM A REFERENCE VIEWPOINT FOR PIXELS IN A SET OF IMAGES CAPTURED FROM DIFFERENT VIEWPOINTS                          |
| I0006-0018-US-13 | US           | In Force      | 16/537,369      | 8/9/2019    | 20190362515     | 11/28/2019       | 10,909,707                 | 2/2/2021   | SYSTEMS AND METHODS FOR MEASURING DEPTH USING AN ARRAY OF INDEPENDENTLY CONTROLLABLE CAMERAS                                                                                 |
| 6-0018-US-14     | US           | Pending       | 17/162,542      | 1/29/2021   | 20210150748     | 5/20/2021        |                            |            | SYSTEMS AND METHODS FOR ESTIMATING DEPTH AND VISIBILITY FROM A REFERENCE VIEWPOINT FOR PIXELS IN A SET OF IMAGES CAPTURED FROM DIFFERENT VIEWPOINTS                          |
| 6-0019-US-03     | US           | In Force      | 14/186,871      | 2/21/2014   | 20140232822     | 8/21/2014        | 9,462,164                  | 10/4/2016  | SYSTEMS AND METHODS FOR GENERATING COMPRESSED LIGHT FIELD REPRESENTATION DATA USING CAPTURED LIGHT FIELDS, ARRAY GEOMETRY, AND PARALLAX INFORMATION                          |
| 6-0019-US-04     | US           | Lapsed        | 15/253,605      | 8/31/2016   | 20170054901     | 2/23/2017        |                            |            | SYSTEMS AND METHODS FOR GENERATING COMPRESSED LIGHT FIELD REPRESENTATION DATA USING CAPTURED LIGHT FIELDS, ARRAY GEOMETRY, AND PARALLAX INFORMATION                          |
| 6-0019-US-05     | US           | In Force      | 15/599,900      | 5/19/2017   | 20170257562     | 9/7/2017         | 10,009,538                 | 6/26/2018  | SYSTEMS AND METHODS FOR GENERATING COMPRESSED LIGHT FIELD REPRESENTATION DATA USING CAPTURED LIGHT FIELDS, ARRAY GEOMETRY, AND PARALLAX INFORMATION                          |
| 6-0020-US-02     | US           | In Force      | 14/188,521      | 2/24/2014   | 20140240528     | 8/28/2014        | 9,274,512                  | 6/21/2016  | THIN FORM FACTOR COMPUTATIONAL ARRAY CAMERAS AND MODULAR ARRAY CAMERAS                                                                                                       |
| 6-0020-US-03     | US           | In Force      | 14/188,524      | 2/24/2014   | 20140240529     | 8/28/2014        | 9,253,380                  | 2/2/2016   | THIN FORM FACTOR COMPUTATIONAL ARRAY CAMERAS AND MODULAR ARRAY CAMERAS                                                                                                       |
| 6-0020-US-04     | US           | In Force      | 15/012,044      | 2/1/2016    | 20160269651     | 9/15/2016        | 9,743,051                  | 8/22/2017  | THIN FORM FACTOR COMPUTATIONAL ARRAY CAMERAS AND MODULAR ARRAY CAMERAS                                                                                                       |
| 6-0020-US-05     | US           | In Force      | 15/136,166      | 4/22/2016   | 20170085845     | 3/23/2017        | 9,774,831                  | 9/26/2017  | THIN FORM FACTOR COMPUTATIONAL ARRAY CAMERAS AND MODULAR ARRAY CAMERAS                                                                                                       |
| 6-0021-US-01     | US           | In Force      | 13/792,143      | 3/1/2013    | 20140253738     | 9/11/2014        | 8,866,912                  | 10/21/2014 | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA USING A SINGLE CAPTURED IMAGE                                                                                          |
| 6-0021-US-02     | US           | In Force      | 14/519,005      | 10/20/2014  | 20150035992     | 2/5/2015         | 9,124,864                  | 9/17/2015  | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-03     | US           | In Force      | 14/841,651      | 8/31/2015   | 20160165212     | 6/9/2016         | 9,986,224                  | 5/29/2018  | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-04     | US           | In Force      | 15/987,768      | 5/23/2018   | 20180270473     | 9/20/2018        | 10,225,543                 | 3/5/2019   | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-05     | US           | In Force      | 16/290,672      | 3/1/2019    | 20190268586     | 8/29/2019        | 10,560,684                 | 2/11/2020  | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-06     | US           | In Force      | 16/785,914      | 2/10/2020   | 20200252597     | 8/6/2020         | 10,958,892                 | 3/23/2021  | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-07     | US           | In Force      | 17/208,618      | 3/22/2021   | 20210281816     | 9/9/2021         | 11,272,161                 | 3/8/2022   | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0021-US-08     | US           | Pending       | 17/653,267      | 3/2/2022    | 20220259990     | 7/28/2022        |                            |            | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 6-0022-US-02     | US           | In Force      | 14/776,509      | 3/11/2014   | 20160037097     | 2/4/2016         | 9,885,194                  | 2/6/2018   | ARRAY CAMERA ARCHITECTURE IMPLEMENTING QUANTUM FILM IMAGE SENSORS                                                                                                            |
| 6-0023-US-02     | US           | Lapsed        | 14/441,503      | 3/12/2014   | 20150312455     | 10/29/2015       | 9,497,370                  | 11/15/2016 | ARRAY CAMERA ARCHITECTURE IMPLEMENTING QUANTUM DOT COLOR FILTERS                                                                                                             |

**PATENT**

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|------------------|--------------|---------------|------------------|-------------|---------------|------------------|------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10006-0024-US-02 | US           | In Force      | 14/776,553       | 3/12/2014   | 20160044252   | 2/11/2016        | 9,578,259  | 2/21/2017  | SYSTEMS AND METHODS FOR REDUCING MOTION BLUR IN IMAGES OR VIDEO IN ULTRA LOW LIGHT WITH ARRAY CAMERAS                                                                         |
| 10006-0024-US-03 | US           | Lapsed        | 15/438,542       | 2/21/2017   | 20170163862   | 6/8/2017         | 10,091,405 | 10/2/2018  | SYSTEMS AND METHODS FOR REDUCING MOTION BLUR IN IMAGES OR VIDEO IN ULTRA LOW LIGHT WITH ARRAY CAMERAS                                                                         |
| 10006-0024-US-04 | US           | In Force      | 16/148,317       | 10/1/2018   | 20190037116   | 1/31/2019        | 10,547,772 | 1/28/2020  | SYSTEMS AND METHODS FOR REDUCING MOTION BLUR IN IMAGES OR VIDEO IN ULTRA LOW LIGHT WITH ARRAY CAMERAS                                                                         |
| 10006-0025-US-03 | US           | In Force      | 14/773,748       | 3/7/2014    | 20160044257   | 2/11/2016        | 9,917,998  | 3/13/2018  | SYSTEMS AND METHODS FOR MEASURING SCENE INFORMATION WHILE CAPTURING IMAGES USING ARRAY CAMERAS                                                                                |
| 10006-0026-US-03 | US           | In Force      | 14/773,742       | 3/7/2014    | 20160057332   | 2/25/2016        | 9,774,789  | 9/26/2017  | SYSTEMS AND METHODS FOR HIGH DYNAMIC RANGE IMAGING USING ARRAY CAMERAS                                                                                                        |
| 10006-0026-US-04 | US           | Lapsed        | 15/713,482       | 9/22/2017   | 20180013945   | 1/11/2018        |            |            | SYSTEMS AND METHODS FOR HIGH DYNAMIC RANGE IMAGING USING ARRAY CAMERAS                                                                                                        |
| 10006-0027-US-02 | US           | In Force      | 14/145,734       | 12/31/2013  | 20140267762   | 9/18/2014        | 9,497,429  | 11/15/2016 | EXTENDED COLOR PROCESSING ON PELICAN ARRAY CAMERAS                                                                                                                            |
| 10006-0027-US-03 | US           | In Force      | 15/287,626       | 10/6/2016   | 20170099465   | 4/6/2017         | 10,182,216 | 1/15/2019  | EXTENDED COLOR PROCESSING ON PELICAN ARRAY CAMERAS                                                                                                                            |
| 10006-0027-US-04 | US           | In Force      | 16/246,100       | 1/11/2019   | 20190215496   | 7/11/2019        | 10,638,099 | 4/28/2020  | SYSTEMS AND METHODS FOR STEREO IMAGING WITH CAMERA ARRAYS                                                                                                                     |
| 10006-0028-EP-01 | EP           | Pending       | 14/763,087.5     | 3/17/2014   | 2973476       | 1/20/2016        |            |            | SYSTEMS AND METHODS FOR STEREO IMAGING WITH CAMERA ARRAYS                                                                                                                     |
| 10006-0028-EP-02 | JP           | Lapsed        | 2016-503445      | 3/17/2014   | 2016-524125   | 8/12/2016        |            |            | SYSTEMS AND METHODS FOR STEREO IMAGING WITH CAMERA ARRAYS                                                                                                                     |
| 10006-0028-US-02 | US           | In Force      | 14/216,968       | 3/17/2014   | 20140267633   | 9/18/2014        | 9,438,888  | 9/6/2016   | SYSTEMS AND METHODS FOR STEREO IMAGING WITH CAMERA ARRAYS                                                                                                                     |
| 10006-0028-US-03 | US           | In Force      | 14/705,885       | 5/6/2015    | 20150245013   | 8/27/2015        | 9,800,859  | 10/24/2017 | SYSTEMS AND METHODS FOR ESTIMATING DEPTH USING STEREO ARRAY CAMERAS                                                                                                           |
| 10006-0028-US-04 | US           | In Force      | 14/705,903       | 5/6/2015    | 20150237329   | 8/20/2015        | 9,602,805  | 3/21/2017  | SYSTEMS AND METHODS FOR ESTIMATING DEPTH USING AD HOC STEREO ARRAY CAMERAS                                                                                                    |
| 10006-0028-US-05 | US           | In Force      | 15/791,242       | 10/23/2017  | 20180048879   | 2/15/2018        | 10,455,218 | 10/22/2019 | 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 |
| 10006-0029-US-02 | US           | In Force      | 14/207,254       | 3/12/2014   | 20140267243   | 9/18/2014        | 9,519,972  | 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 |
| 10006-0029-US-03 | US           | In Force      | 15/376,529       | 12/12/2016  | 20170094243   | 3/30/2017        | 9,800,856  | 10/24/2017 | SYSTEMS AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                        |
| 10006-0030-US-02 | US           | In Force      | 14/203,308       | 3/10/2014   | 20140285675   | 9/25/2014        | 9,124,831  | 9/1/2015   | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                         |
| 10006-0030-US-03 | US           | In Force      | 14/841,694       | 8/31/2015   | 20160163051   | 6/9/2016         | 9,741,118  | 8/22/2017  | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                         |
| 10006-0030-US-04 | US           | In Force      | 15/682,064       | 8/21/2017   | 20180040135   | 2/8/2018         | 10,127,682 | 11/13/2018 | SYSTEM AND METHODS FOR CALIBRATION OF AN ARRAY CAMERA                                                                                                                         |
| 10006-0031-US-02 | US           | In Force      | 14/213,697       | 3/14/2014   | 20140267829   | 9/18/2014        | 9,100,586  | 8/4/2015   | SYSTEMS AND METHODS FOR PHOTOMETRIC NORMALIZATION IN ARRAY CAMERAS                                                                                                            |
| 10006-0031-US-03 | US           | In Force      | 14/814,291       | 7/30/2015   | 20160198096   | 7/7/2016         | 9,787,911  | 10/10/2017 | SYSTEMS AND METHODS FOR PHOTOMETRIC NORMALIZATION IN ARRAY CAMERAS                                                                                                            |
| 10006-0031-US-04 | US           | In Force      | 15/727,932       | 10/9/2017   | 20180035057   | 2/1/2018         | 10,412,314 | 9/10/2019  | SYSTEMS AND METHODS FOR PHOTOMETRIC NORMALIZATION IN ARRAY CAMERAS                                                                                                            |
| 10006-0032-US-01 | US           | In Force      | 13/802,507       | 3/13/2013   | 20140267890   | 9/18/2014        | 9,106,784  | 8/11/2015  | SYSTEMS AND METHODS FOR CONTROLLING ALIASING IN IMAGES CAPTURED BY AN ARRAY CAMERA FOR USE IN SUPER-RESOLUTION PROCESSING                                                     |
| 10006-0032-US-02 | US           | In Force      | 14/814,297       | 7/30/2015   | 20160195733   | 7/7/2016         | 9,733,486  | 8/15/2017  | SYSTEMS AND METHODS FOR CONTROLLING ALIASING IN IMAGES CAPTURED BY AN ARRAY CAMERA FOR USE IN SUPER-RESOLUTION PROCESSING                                                     |
| 10006-0033-DE-01 | DE           | In Force      | 14865463.5       | 11/26/2014  | 3075140       | 10/5/2016        | 3075140    | 6/13/2018  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-EP-01     | EP           | Lapsed        | 14865463.5       | 11/26/2014  | 3075140       | 10/5/2016        | 3075140    | 6/13/2018  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-FR-01     | FR           | Lapsed        | 14865463.5       | 11/26/2014  | 3075140       | 10/5/2016        | 3075140    | 6/13/2018  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-GB-01     | GB           | Lapsed        | 14865463.5       | 11/26/2014  | 3075140       | 10/5/2016        | 3075140    | 6/13/2018  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-NL-01     | NL           | In Force      | 14865463.5       | 11/26/2014  | 3075140       | 10/5/2016        | 3075140    | 6/13/2018  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-US-02     | US           | In Force      | 14/555,279       | 11/26/2014  | 20150146029   | 5/28/2015        | 9,426,361  | 8/23/2016  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-US-03     | US           | In Force      | 14/555,368       | 11/26/2014  | 20150146030   | 5/28/2015        | 9,456,134  | 9/27/2016  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS AND CONSTITUENT CAMERAS                                                                          |
| 6-0033-US-04     | US           | In Force      | 15/274,830       | 9/23/2016   | 20170078568   | 3/16/2017        | 9,813,617  | 11/7/2017  | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS AND CONSTITUENT CAMERAS                                                                          |
| 6-0033-US-05     | US           | Lapsed        | 15/804,959       | 11/6/2017   | 20180139382   | 5/17/2018        |            |            | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS AND CONSTITUENT CAMERAS                                                                          |
| 6-0033-US-06     | US           | In Force      | 16/184,840       | 11/8/2018   | 20190098209   | 3/28/2019        | 10,708,492 | 7/7/2020   | ARRAY CAMERA CONFIGURATIONS INCORPORATING MULTIPLE CONSTITUENT ARRAY CAMERAS                                                                                                  |
| 6-0033-WO-01     | WO           | Lapsed        | PT/US2014/067740 | 11/26/2014  | 2015/081279   | 6/4/2015         |            |            | SYSTEMS AND METHODS FOR DEPTH-ASSISTED PERSPECTIVE DISTORTION CORRECTION                                                                                                      |
| 6-0034-US-03     | US           | In Force      | 14/500,979       | 9/29/2014   | 20150091900   | 4/2/2015         | 9,898,856  | 2/20/2018  | SYSTEMS AND METHODS FOR DEPTH-ASSISTED PERSPECTIVE DISTORTION CORRECTION                                                                                                      |
| 6-0034-US-04     | US           | In Force      | 15/898,666       | 2/19/2018   | 20180240265   | 8/23/2018        | 10,540,806 | 1/21/2020  | SYSTEMS AND METHODS FOR DEPTH-ASSISTED PERSPECTIVE DISTORTION CORRECTION                                                                                                      |
| 6-0034-WO-01     | WO           | Lapsed        | PT/US2014/058142 | 9/29/2014   | 2015/048694   | 4/2/2015         |            |            | METHODS OF MANUFACTURING ARRAY CAMERA MODULES INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                 |
| 6-0035-EP-01     | EP           | Lapsed        | 14860103.2       | 11/7/2014   | 3066690       | 9/14/2016        |            |            | METHODS OF MANUFACTURING ARRAY CAMERA MODULES INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                 |
| 6-0035-US-03     | US           | In Force      | 14/536,537       | 11/7/2014   | 20150122411   | 5/7/2015         | 9,185,276  | 11/10/2015 | ARRAY CAMERA MODULES INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                                          |
| 6-0035-US-04     | US           | In Force      | 14/536,552       | 11/7/2014   | 20150124151   | 5/7/2015         | 9,264,592  | 2/16/2016  | ARRAY CAMERA MODULES INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                                          |

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|------------------|--------------|---------------|-------------------|-------------|---------------|------------------|--------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10006-0035-US-05 | US           | In Force      | 14/536,554        | 11/7/2014   | 20150124113   | 5/7/2015         | 9,426,343                | 8/23/2016  | ARRAY CAMERAS INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                                               |
| 10006-0035-US-06 | US           | In Force      | 15/242,405        | 8/19/2016   | 20170070672   | 3/9/2017         | 9,924,092                | 3/20/2018  | ARRAY CAMERAS INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                                                               |
| 10006-0035-WO-01 | WO           | Lapsed        | PCT/US2014/064693 | 11/7/2014   | 2015/070105   | 5/14/2015        |                          |            | METHODS OF MANUFACTURING ARRAY CAMERA MODULES INCORPORATING INDEPENDENTLY ALIGNED LENS STACKS                                                                               |
| 10006-0036-US-02 | US           | In Force      | 14/547,048        | 11/18/2014  | 20150138346   | 5/21/2015        | 10,119,808               | 11/6/2018  | SYSTEMS AND METHODS FOR ESTIMATING DEPTH FROM PROJECTED TEXTURE USING CAMERA ARRAYS                                                                                         |
| 10006-0036-US-03 | US           | In Force      | 16/171,191        | 10/31/2018  | 20190063905   | 2/28/2019        | 10,767,981               | 9/8/2020   | SYSTEMS AND METHODS FOR ESTIMATING DEPTH FROM PROJECTED TEXTURE USING CAMERA ARRAYS                                                                                         |
| 10006-0036-US-04 | US           | Pending       | 17/013,783        | 9/7/2020    | 20210063141   | 3/4/2021         |                          |            | SYSTEMS AND METHODS FOR ESTIMATING DEPTH FROM PROJECTED TEXTURE USING CAMERA ARRAYS                                                                                         |
| 10006-0036-WO-01 | WO           | Lapsed        | PCT/US2014/066229 | 11/18/2014  | 2015/074078   | 5/21/2015        |                          |            | SYSTEMS AND METHODS FOR ESTIMATING DEPTH FROM PROJECTED TEXTURE USING CAMERA ARRAYS                                                                                         |
| 10006-0037-US-02 | US           | In Force      | 14/484,154        | 9/11/2014   | 20150288861   | 10/8/2015        | 9,247,117                | 1/26/2016  | SYSTEMS AND METHODS FOR INTRODUCING WARPAGE INTO A FOCAL PLANE OF A LENS STACK ARRAY MODULE BY INTRODUCING WARPAGE INTO A FOCAL PLANE OF A LENS STACK ARRAY                 |
| 10006-0038-US-02 | US           | In Force      | 14/642,637        | 3/9/2015    | 20150254868   | 9/10/2015        | 10,089,740               | 10/2/2018  | SYSTEM AND METHODS FOR DEPTH REGULARIZATION AND SEMIAUTOMATIC INTERACTIVE MATTING USING RGB-D IMAGES                                                                        |
| 10006-0038-US-03 | US           | In Force      | 16/148,816        | 10/1/2018   | 20190037150   | 1/31/2019        | 10,574,905               | 2/25/2020  | SYSTEM AND METHODS FOR DEPTH REGULARIZATION AND SEMIAUTOMATIC INTERACTIVE MATTING USING RGB-D IMAGES                                                                        |
| 10006-0038-US-04 | US           | Lapsed        | 16/798,203        | 2/21/2020   |               |                  |                          |            | SYSTEM AND METHODS FOR DEPTH REGULARIZATION AND SEMIAUTOMATIC INTERACTIVE MATTING USING RGB-D IMAGES                                                                        |
| 10006-0038-WO-01 | WO           | Lapsed        | PCT/US2015/019529 | 3/9/2015    | 2015/134996   | 9/11/2015        |                          |            | SYSTEM AND METHODS FOR DEPTH REGULARIZATION AND SEMIAUTOMATIC INTERACTIVE MATTING USING RGB-D IMAGES                                                                        |
| 10006-0039-US-01 | US           | In Force      | 14/593,369        | 1/9/2015    | 20150161798   | 6/11/2015        | 9,633,442                | 4/25/2017  | SYSTEM AND METHODS FOR DEPTH REGULARIZATION AND SEMIAUTOMATIC INTERACTIVE MATTING USING RGB-D IMAGES                                                                        |
| 10006-0039-US-02 | US           | In Force      | 14/724,447        | 5/28/2015   | 20150264337   | 9/17/2015        | 10,122,993               | 11/6/2018  | ARRAY CAMERAS INCLUDING AN ARRAY CAMERA MODULE AUGMENTED WITH A SEPARATE CAMERA AUTOFOCUS SYSTEM FOR A CONVENTIONAL CAMERA THAT USES DEPTH INFORMATION FROM AN ARRAY CAMERA |
| 10006-0039-US-03 | US           | In Force      | 16/179,796        | 11/2/2018   | 20190089947   | 3/21/2019        | 10,674,138               | 6/2/2020   | ARRAY CAMERA AUTOFOCUS SYSTEM FOR A CONVENTIONAL CAMERA THAT USES DEPTH INFORMATION FROM AN ARRAY CAMERA                                                                    |
| 10006-0039-WO-01 | WO           | Lapsed        | PCT/US2015/032467 | 5/26/2015   | 2015/183824   | 12/3/2015        |                          |            | ARRAY CAMERA AUTOFOCUS SYSTEM FOR A CONVENTIONAL CAMERA THAT USES DEPTH INFORMATION FROM AN ARRAY CAMERA                                                                    |
| 10006-0040-US-02 | US           | In Force      | 14/561,925        | 12/5/2014   | 20150373261   | 12/24/2015       | 9,521,319                | 12/13/2016 | ARRAY CAMERAS AND ARRAY CAMERA MODULES INCLUDING SPECTRAL FILTERS DISPOSED OUTSIDE OF A CONSTITUENT IMAGE SENSOR                                                            |
| 10006-0041-CN-01 | CN           | In Force      | 201580080973.3    | 4/17/2015   | 107924572     | 4/17/2018        | ZL201580080973.3         | 6/15/2021  | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 10006-0041-DE-01 | DE           | In Force      | 15889406.3        | 4/17/2015   | 3284061       | 2/21/2018        | 3284061                  | 11/10/2021 | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 10006-0041-EP-01 | EP           | Lapsed        | 15889406.3        | 4/17/2015   | 3284061       | 2/21/2018        | 3284061                  | 11/10/2021 | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 10006-0041-FR-01 | FR           | In Force      | 15889406.3        | 4/17/2015   | 3284061       | 2/21/2018        | 3284061                  | 11/10/2021 | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 6-0041-GB-01     | GB           | In Force      | 15889406.3        | 4/17/2015   | 3284061       | 2/21/2018        | 3284061                  | 11/10/2021 | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 6-0041-KR-01     | KR           | Lapsed        | 10-2017-7033346   | 4/17/2015   |               |                  |                          |            | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 6-0041-NL-01     | NL           | In Force      | 15889406.3        | 4/17/2015   | 3284061       | 2/21/2018        | 3284061                  | 11/10/2021 | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 6-0041-US-01     | US           | In Force      | 14/690,346        | 4/17/2015   | 20160309084   | 10/20/2016       | 9,942,474                | 4/10/2018  | SYSTEMS AND METHODS FOR PERFORMING HIGH SPEED VIDEO CAPTURE AND DEPTH ESTIMATION USING ARRAY CAMERAS                                                                        |
| 6-0041-WO-01     | WO           | Lapsed        | 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                                                                        |
| 6-0042-CN-01     | CN           | In Force      | 201680028821.3    | 4/19/2016   | 108307675     | 7/20/2018        | 108307675                | 12/25/2020 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |
| 6-0042-DE-01     | DE           | In Force      | 16783702.0        | 4/19/2016   | 3286914       | 2/28/2018        | 602016026954.6 (3286914) | 12/25/2019 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |
| 6-0042-EP-01     | EP           | Lapsed        | 16783702.0        | 4/19/2016   | 3286914       | 2/28/2018        | 3286914                  | 12/25/2019 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |
| 6-0042-GB-01     | GB           | In Force      | 16783702.0        | 4/19/2016   | 3286914       | 2/28/2018        | 3286914                  | 12/25/2019 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |
| 6-0042-KR-01     | KR           | Pending       | 10-2017-7033448   | 4/19/2016   |               |                  |                          |            | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |
| 6-0042-NL-01     | NL           | In Force      | 16783702.0        | 4/19/2016   | 3286914       | 2/28/2018        | 3286914                  | 12/25/2019 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                                               |

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| Xperi Docket #   | Country Code | Patent Status | Application #     | Filing Date | Publication #   | Patent #                   | Grant Date | Title                                                                                                                                           |
|------------------|--------------|---------------|-------------------|-------------|-----------------|----------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| I0006-0042-US-02 | US           | In Force      | 15/133,186        | 4/19/2016   | 20160309134     | 10,805,589                 | 10/13/2020 | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                   |
| I0006-0042-US-03 | US           | In Force      | 17/068,243        | 10/12/2020  | 20210044790     |                            | 6/21/2022  | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                   |
| I0006-0042-US-04 | US           | Pending       | 17/807,508        | 6/17/2022   |                 |                            |            | MULTI-BASELINE CAMERA ARRAY SYSTEM ARCHITECTURES FOR DEPTH AUGMENTATION IN VR/AR APPLICATIONS                                                   |
| I0006-0042-WO-01 | WO           | Lapsed        | PCT/US2016/028317 | 4/19/2016   | 2016/172125     |                            |            | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-CN-01 | CN           | Lapsed        | 201180031287.9    | 5/12/2011   | 103004180       |                            |            | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-DE-01 | DE           | In Force      | 11781313.9        | 5/12/2011   | 2569935         | 2569935                    | 12/28/2016 | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-EP-01 | EP           | Lapsed        | 11781313.9        | 5/12/2011   | 2569935         | 2569935                    | 12/28/2016 | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-FR-01 | FR           | In Force      | 11781313.9        | 5/12/2011   | 2569935         | 2569935                    | 12/28/2016 | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-GB-01 | GB           | In Force      | 11781313.9        | 5/12/2011   | 2569935         | 2569935                    | 12/28/2016 | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-JP-01 | JP           | In Force      | 2013510321        | 11/9/2012   | 2013-526801     | 5848754                    | 12/4/2015  | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-KR-01 | KR           | In Force      | 10-2012-7032552   | 5/12/2011   | 10-2013-0136372 | 10-1824672                 | 1/26/2018  | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-SG-02 | SG           | Lapsed        | 10201503516V      | 5/12/2011   |                 |                            |            | ARCHITECTURES FOR IMAGER ARRAYS AND ARRAY CAMERAS                                                                                               |
| I0006-0043-US-02 | US           | Lapsed        | 15/159,076        | 5/19/2016   | 20170048468     |                            |            | IMAGER ARRAYS INCLUDING AN M X N ARRAY OF FOCAL PLANES IN WHICH DIFFERENT TYPES OF FOCAL PLANES ARE DISTRIBUTED AROUND A REFERENCE FOCAL PLANE  |
| I0006-0044-CN-01 | CN           | Lapsed        | 201280057587.9    | 10/11/2012  | 104185808       |                            |            | LENS STACK ARRAYS INCLUDING ADAPTIVE OPTICAL ELEMENTS                                                                                           |
| I0006-0044-EP-01 | EP           | Lapsed        | 12839821.1        | 10/11/2012  | 2766767         |                            | 8/20/2014  | LENS STACK ARRAYS INCLUDING ADAPTIVE OPTICAL ELEMENTS                                                                                           |
| I0006-0044-KR-01 | KR           | Lapsed        | 10-2014-7012405   | 10/11/2012  |                 |                            |            | LENS STACK ARRAYS INCLUDING ADAPTIVE OPTICAL ELEMENTS                                                                                           |
| I0006-0044-SG-01 | SG           | Lapsed        | 11201401363U      | 10/11/2012  |                 |                            |            | LENS STACK ARRAYS INCLUDING ADAPTIVE OPTICAL ELEMENTS                                                                                           |
| I0006-0044-US-03 | US           | Lapsed        | 14/868,942        | 9/29/2015   | 20160165106     |                            | 6/9/2016   | LENS STACK ARRAYS INCLUDING ADAPTIVE OPTICAL ELEMENTS                                                                                           |
| I0006-0045-US-03 | US           | In Force      | 15/048,369        | 2/19/2016   | 20160316140     | 9,794,476                  | 10/17/2017 | SYSTEMS AND METHODS FOR CONTROLLING ALIASING IN IMAGES CAPTURED BY AN ARRAY CAMERA FOR USE IN SUPER RESOLUTION PROCESSING USING PIXEL APERTURES |
| I0006-0045-US-04 | US           | In Force      | 15/785,315        | 10/16/2017  | 20180097993     | 10,375,302                 | 8/6/2019   | SYSTEMS AND METHODS FOR CONTROLLING ALIASING IN IMAGES CAPTURED BY AN ARRAY CAMERA FOR USE IN SUPER RESOLUTION PROCESSING USING PIXEL APERTURES |
| I0006-0046-CN-01 | CN           | In Force      | 201280055766.9    | 9/28/2012   | 104081414       | 41201280055766.9           | 8/1/2017   | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-CN-02 | CN           | In Force      | 201710541440.1    | 9/28/2012   | 107230236       | 21201710541440.1           | 12/8/2020  | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-DE-01 | DE           | In Force      | 12835041.0        | 9/28/2012   | 2761534         | 602012073316.0 (EP2761534) | 11/18/2020 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-EP-01 | EP           | Lapsed        | 12835041.0        | 9/28/2012   | 2761534         | 2761534                    | 11/18/2020 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-FR-01 | FR           | In Force      | 12835041.0        | 9/28/2012   | 2761534         | 2761534                    | 11/18/2020 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-GB-01 | GB           | In Force      | 12835041.0        | 9/28/2012   | 2761534         | 2761534                    | 11/18/2020 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-IN-01 | IN           | In Force      | 2708/CHENP/2014   | 9/28/2012   |                 | 361194                     | 3/15/2021  | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-JP-01 | JP           | In Force      | 2014-533435       | 9/28/2012   | 2014-535191     | 6140709                    | 5/12/2017  | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-JP-02 | JP           | In Force      | 2017-91357        | 9/28/2012   | 2017-163587     | 6630891                    | 12/20/2019 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-JP-03 | JP           | In Force      | 2019-188790       | 9/28/2012   | 2020-17999      | 6767558                    | 9/23/2020  | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-KR-01 | KR           | In Force      | 10-2014-7011449   | 9/28/2012   | 10-2014-0067156 | 10-2002165                 | 7/15/2019  | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-NL-01 | NL           | In Force      | 12835041.0        | 9/28/2012   | 2761534         | 2761534                    | 11/18/2020 | SYSTEMS AND METHODS FOR ENCODING AND DECODING LIGHT FIELD IMAGE FILES                                                                           |
| I0006-0046-US-02 | US           | In Force      | 13/631,731        | 9/28/2012   | 20130077880     | 9,129,183                  | 9/8/2015   | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES                                                                                        |
| I0006-0046-US-03 | US           | In Force      | 13/631,736        | 9/28/2012   | 20130077882     | 8,542,933                  | 9/24/2013  | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES                                                                                        |
| I0006-0046-US-04 | US           | In Force      | 13/955,411        | 7/31/2013   | 20130315494     | 8,831,367                  | 9/9/2014   | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES                                                                                        |
| I0006-0046-US-05 | US           | In Force      | 14/477,374        | 9/4/2014    | 20140369615     | 9,036,931                  | 5/19/2015  | SYSTEMS AND METHODS FOR ENCODING STRUCTURED LIGHT FIELD IMAGE FILES                                                                             |
| I0006-0046-US-06 | US           | In Force      | 14/477,396        | 9/4/2014    | 20140369612     | 9,036,928                  | 5/19/2015  | SYSTEMS AND METHODS FOR ENCODING STRUCTURED LIGHT FIELD IMAGE FILES                                                                             |
| I0006-0046-US-07 | US           | In Force      | 14/481,241        | 9/9/2014    | 20140376825     |                            | 5/12/2015  | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES HAVING DEPTH AND CONFIDENCE MAPS                                                       |
| I0006-0046-US-08 | US           | In Force      | 14/481,270        | 9/9/2014    | 20150003753     | 9,031,335                  | 5/12/2015  | SYSTEMS AND METHODS FOR ENCODING REFOCUSABLE LIGHT FIELD IMAGE FILES                                                                            |
| I0006-0046-US-09 | US           | In Force      | 14/481,291        | 9/9/2014    | 20140376826     |                            | 5/5/2015   | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES HAVING DEPTH AND CONFIDENCE MAPS                                                       |
| I0006-0046-US-10 | US           | In Force      | 14/481,313        | 9/9/2014    | 20150003752     | 9,025,894                  | 5/5/2015   | SYSTEMS AND METHODS FOR ENCODING REFOCUSABLE LIGHT FIELD IMAGE FILES                                                                            |
| I0006-0046-US-11 | US           | In Force      | 14/504,684        | 10/2/2014   | 20150055884     | 9,031,343                  | 5/12/2015  | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES HAVING A DEPTH MAP                                                                     |
| I0006-0046-US-12 | US           | In Force      | 14/504,687        | 10/2/2014   | 20150015669     | 9,042,667                  | 5/26/2015  | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES USING A DEPTH MAP                                                                      |
| I0006-0046-US-13 | US           | In Force      | 14/667,492        | 3/24/2015   | 20150199841     |                            | 1/3/2017   | SYSTEMS AND METHODS FOR ENCODING LIGHT FIELD IMAGE FILES                                                                                        |
| I0006-0046-US-14 | US           | In Force      | 14/667,495        | 3/24/2015   | 20150199793     | 9,811,753                  | 11/7/2017  | METADATA                                                                                                                                        |
| I0006-0046-US-15 | US           | In Force      | 14/667,503        | 3/24/2015   | 20150199794     | 9,864,921                  | 1/9/2018   | SYSTEMS AND METHODS FOR ENCODING IMAGE FILES CONTAINING DEPTH MAPS STORED AS METADATA                                                           |

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|------------------|--------------|---------------|--------------------|-------------|---------------|------------------|------------------------|------------|-------------------------------------------------------------------------------------------------------------------------|
| 10006-0046-US-16 | US           | In Force      | 15/396,024         | 12/30/2016  | 20170178363   | 6/22/2017        | 10,019,816             | 7/10/2018  | SYSTEMS AND METHODS FOR DECODING IMAGE FILES CONTAINING DEPTH MAPS STORED AS METADATA                                   |
| 10006-0046-US-17 | US           | In Force      | 15/865,208         | 1/8/2018    | 20180197035   | 7/12/2018        | 10,275,676             | 4/30/2019  | SYSTEMS AND METHODS FOR ENCODING IMAGE FILES CONTAINING DEPTH MAPS STORED AS METADATA                                   |
| 10006-0046-US-18 | US           | In Force      | 16/030,597         | 7/9/2018    | 20180330182   | 11/15/2018       | 10,430,682             | 10/1/2019  | SYSTEMS AND METHODS FOR DECODING IMAGE FILES CONTAINING DEPTH MAPS STORED AS METADATA                                   |
| 10006-0046-US-19 | US           | In Force      | 16/586,827         | 9/27/2019   | 20200026948   | 1/23/2020        | 10,984,276             | 4/20/2021  | Systems and Methods for encoding Image Files Containing Depth Maps Stored as Metadata                                   |
| 10006-0046-US-20 | US           | Pending       | 17/233,553         | 4/19/2021   | 20210312207   | 10/7/2021        |                        |            | SYSTEMS AND METHODS FOR ENCODING IMAGE FILES CONTAINING DEPTH MAPS STORED AS METADATA                                   |
| 10006-0047-EP-01 | EP           | Pending       | 13841613.6         | 9/30/2013   | 2901671       | 8/5/2015         |                        |            | GENERATING IMAGES FROM LIGHT FIELDS UTILIZING VIRTUAL VIEWPOINTS                                                        |
| 10006-0047-US-03 | US           | In Force      | 14/876,024         | 10/6/2015   | 20160255333   | 9/1/2016         | 10,390,005             | 8/20/2019  | GENERATING IMAGES FROM LIGHT FIELDS UTILIZING VIRTUAL VIEWPOINTS                                                        |
| 10006-0048-CN-01 | CN           | In Force      | 201380049828.X     | 8/23/2013   | 104685513     | 6/3/2015         | ZL201380049828.X       | 4/27/2018  | USING AN ARRAY SOURCE                                                                                                   |
| 10006-0048-EP-01 | EP           | Lapsed        | 13831768.0         | 8/23/2013   | 2888698       | 7/1/2015         |                        |            | FEATURE BASED HIGH RESOLUTION MOTION ESTIMATION FROM LOW RESOLUTION IMAGES CAPTURED USING AN ARRAY SOURCE               |
| 10006-0048-IN-01 | IN           | Lapsed        | 1488DELIMP2015     | 8/23/2013   |               |                  |                        |            | FEATURE BASED HIGH RESOLUTION MOTION ESTIMATION FROM LOW RESOLUTION IMAGES CAPTURED USING AN ARRAY SOURCE               |
| 10006-0048-US-03 | US           | In Force      | 14/933,871         | 11/5/2015   | 20160165134   | 6/9/2016         | 9,813,616              | 11/7/2017  | FEATURE BASED HIGH RESOLUTION MOTION ESTIMATION FROM LOW RESOLUTION IMAGES CAPTURED USING AN ARRAY SOURCE               |
| 10006-0048-US-04 | US           | In Force      | 15/804,149         | 11/6/2017   | 20180124311   | 5/3/2018         | 10,462,362             | 10/29/2019 | FEATURE BASED HIGH RESOLUTION MOTION ESTIMATION FROM LOW RESOLUTION IMAGES CAPTURED USING AN ARRAY SOURCE               |
| 10006-0048-US-05 | US           | Lapsed        | 16/664,563         | 10/25/2019  |               |                  |                        |            | USING AN ARRAY SOURCE                                                                                                   |
| 10006-0049-CN-01 | CN           | Lapsed        | 201380041095.5     | 6/14/2013   | 104520754     | 5/6/2015         |                        |            | STACK ARRAYS AND SENSORS                                                                                                |
| 10006-0049-EP-01 | EP           | Lapsed        | 13810429.4         | 6/14/2013   | 2867718       | 8/3/2015         |                        |            | SYSTEMS AND METHODS FOR MANUFACTURING CAMERA MODULES USING ACTIVE ALIGNMENT OF LENS                                     |
| 10006-0049-JP-01 | JP           | Lapsed        | 2015520272         | 6/14/2013   | 2015-522178   |                  |                        |            | STACK ARRAYS AND SENSORS                                                                                                |
| 10006-0049-KR-01 | KR           | Lapsed        | 10-2015-7002415    | 6/14/2013   |               |                  |                        |            | SYSTEMS AND METHODS FOR MANUFACTURING CAMERA MODULES USING ACTIVE ALIGNMENT OF LENS                                     |
| 10006-0049-US-01 | US           | In Force      | 15/004,759         | 1/22/2016   | 20160266284   | 9/15/2016        | 9,766,380              | 9/19/2017  | STACK ARRAYS AND SENSORS                                                                                                |
| 10006-0049-US-02 | US           | In Force      | 15/707,747         | 9/18/2017   | 20180081090   | 3/22/2018        | 10,261,219             | 4/16/2019  | STACK ARRAYS AND SENSORS                                                                                                |
| 6-0049-US-03     | US           | In Force      | 16/382,099         | 4/11/2019   | 20190235138   | 8/1/2019         | 11,022,725             | 6/1/2021   | SYSTEMS AND METHODS FOR MANUFACTURING CAMERA MODULES USING ACTIVE ALIGNMENT OF LENS                                     |
| 6-0050-US-01     | US           | Lapsed        | 62/219,528         | 9/16/2015   |               |                  |                        |            | OPTICAL SYSTEMS FOR CAMERAS INCORPORATING LENS ELEMENTS FORMED SEPARATELY AND SUBSEQUENTLY BONDED TO LOW CTE SUBSTRATES |
| 6-0050-US-02     | US           | Lapsed        | 62/394,644         | 9/14/2016   |               |                  |                        |            | OPTICAL SYSTEMS FOR CAMERAS INCORPORATING LENS ELEMENTS FORMED SEPARATELY AND SUBSEQUENTLY BONDED TO LOW CTE SUBSTRATES |
| 6-0050-US-03     | US           | In Force      | 16/333,202         | 9/14/2017   | 20190243086   | 8/8/2019         | 11,199,678             | 12/14/2021 | OPTICAL SYSTEMS FOR CAMERAS INCORPORATING LENS ELEMENTS FORMED SEPARATELY AND SUBSEQUENTLY BONDED TO LOW CTE SUBSTRATES |
| 6-0050-WO-01     | WO           | Lapsed        | PCT/AUS2017/051637 | 9/14/2017   | 2018053181    | 3/22/2018        |                        |            | OPTICAL SYSTEMS FOR CAMERAS INCORPORATING LENS ELEMENTS FORMED SEPARATELY AND SUBSEQUENTLY BONDED TO LOW CTE SUBSTRATES |
| 6-0051-CN-01     | CN           | In Force      | 201580056436.5     | 9/29/2015   | 107077743     | 8/30/2017        | ZL201580056436.5       | 3/23/2021  | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-CN-02     | CN           | Pending       | 202110338576.9     | 9/29/2015   | 113256730     | 8/13/2021        |                        |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-DE-01     | DE           | In Force      | 15847754.7         | 9/29/2015   | 3201877       | 8/9/2017         | 602015022053.6-3201877 | 12/19/2018 | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-EP-01     | EP           | Lapsed        | 15847754.7         | 9/29/2015   | 3201877       | 8/9/2017         | 3201877                | 12/19/2018 | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-EP-02     | EP           | Lapsed        | 18205326.4         | 9/29/2015   | 3467776       | 4/10/2019        |                        |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-FR-01     | FR           | In Force      | 15847754.7         | 9/29/2015   |               |                  | 3201877                | 12/19/2018 | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-GB-01     | GB           | In Force      | 15847754.7         | 9/29/2015   |               |                  | 3201877                | 12/19/2018 | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-JP-01     | JP           | Lapsed        | 2017-536232        | 9/29/2015   | 2017-531976   | 10/26/2017       |                        |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-KR-01     | KR           | Lapsed        | 10-2017-7011284    | 9/29/2015   | 17-63827      | 6/8/2017         |                        |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-NL-01     | NL           | In Force      | 15847754.7         | 9/29/2015   |               |                  | 3201877                | 12/19/2018 | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-US-01     | US           | In Force      | 15/515,489         | 9/29/2015   | 20170244960   | 8/24/2017        | 10,250,871             | 4/2/2019   | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-US-02     | US           | In Force      | 16/371,347         | 4/1/2019    | 20190230348   | 7/25/2019        | 10,944,961             | 3/9/2021   | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |
| 6-0051-US-03     | US           | Pending       | 17/195,332         | 3/8/2021    | 20210281828   | 9/9/2021         |                        |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS                                                            |

**PATENT**

**REEL: 066237 FRAME: 0399**

| Xperi Docket #   | Country Code | Patent Status | Application #     | Filing Date | Publication # | Publication Date | Patent #                    | Grant Date | Title                                                            |
|------------------|--------------|---------------|-------------------|-------------|---------------|------------------|-----------------------------|------------|------------------------------------------------------------------|
| 10006-0051-WO-01 | WO           | Lapsed        | PCT/US2015/053013 | 9/29/2015   | 2016/054089   | 4/7/2016         |                             |            | SYSTEMS AND METHODS FOR DYNAMIC CALIBRATION OF ARRAY CAMERAS     |
| 10006-0056-CN-01 | CN           | Pending       | 201880058509.8    | 8/17/2018   | 111066065     | 4/24/2020        |                             |            | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-DE-01 | DE           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 602018023303.2 (EP3673461)  | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-EP-01 | EP           | Lapsed        | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 3673461                     | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-EP-02 | EP           | Pending       | 21193887.3        | 8/17/2018   |               |                  |                             |            | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-ES-01 | ES           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 3673461                     | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-FR-01 | FR           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 3673461                     | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-GB-01 | GB           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 3673461                     | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-IT-01 | IT           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 502021000090212 (EP3673461) | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-NL-01 | NL           | In Force      | 18756418.2        | 8/17/2018   | 3673461       | 7/1/2020         | 3673461                     | 9/8/2021   | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-US-01 | US           | In Force      | 15/682,295        | 8/21/2017   | 20190057513   | 2/21/2019        | 10,482,618                  | 11/19/2019 | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-US-02 | US           | In Force      | 16/685,881        | 11/15/2019  | 20200151894   | 5/14/2020        | 10,818,026                  | 10/27/2020 | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-US-03 | US           | Pending       | 17/078,732        | 10/23/2020  | 20210042952   | 2/11/2021        |                             |            | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0056-WO-01 | WO           | Lapsed        | PCT/EP2018/072303 | 8/17/2018   | 2019/038193   | 2/28/2019        |                             |            | SYSTEMS AND METHODS FOR HYBRID DEPTH REGULARIZATION              |
| 10006-0058-US-01 | US           | In Force      | 15/823,473        | 11/27/2017  | 20190164341   | 5/30/2019        | 10,643,383                  | 5/5/2020   | SYSTEMS AND METHODS FOR 3D FACIAL MODELING                       |
| 10006-0058-US-02 | US           | In Force      | 16/865,776        | 5/4/2020    | 20200334905   | 10/22/2020       | 11,257,289                  | 2/22/2022  | SYSTEMS AND METHODS FOR 3D FACIAL MODELING                       |
| 10006-0058-US-03 | US           | Pending       | 17/652,078        | 2/22/2022   |               |                  |                             |            | SYSTEMS AND METHODS FOR 3D FACIAL MODELING                       |
| 10006-0058-WO-01 | WO           | Lapsed        | PCT/IB2018/059366 | 11/27/2018  |               |                  |                             |            | SYSTEMS AND METHODS FOR 3D FACIAL MODELING                       |
| 10006-0059-US-01 | US           | Lapsed        | 62/627,650        | 2/7/2018    |               |                  |                             |            | SYSTEMS AND METHODS FOR DEPTH ESTIMATION USING GENERATIVE MODELS |
| 10006-0059-US-02 | US           | In Force      | 16/269,108        | 2/6/2019    | 20190244379   | 8/8/2019         | 11,024,046                  | 6/1/2021   | SYSTEMS AND METHODS FOR DEPTH ESTIMATION USING GENERATIVE MODELS |
| 10006-0059-US-03 | US           | Pending       | 17/331,428        | 5/26/2021   | 20210358154   | 11/18/2021       |                             |            | SYSTEMS AND METHODS FOR DEPTH ESTIMATION USING GENERATIVE MODELS |

# Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF  
DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT  
COPY OF THE CERTIFICATE OF AMENDMENT OF "DOC MEMS HOLDING LLC",  
CHANGING ITS NAME FROM "DOC MEMS HOLDING LLC" TO "ADEIA IMAGING  
LLC", FILED IN THIS OFFICE ON THE FIFTEENTH DAY OF AUGUST, A.D.  
2022, AT 9:22 O'CLOCK A.M.



6042363 8100  
SR# 20223259347

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

A handwritten signature in black ink, appearing to read "JB", is written over a horizontal line. Below the line, the text "Jeffrey W. Bullock, Secretary of State" is printed in a small font.

Authentication: 204159153  
Date: 08-15-22

**PATENT**  
**REEL: 066237 FRAME: 0401**

CERTIFICATE OF AMENDMENT  
TO  
CERTIFICATE OF FORMATION  
OF  
DOC MEMS HOLDING LLC

Pursuant to Section 18-202 of the  
Delaware Limited Liability Company Act

1. The name of the limited liability company is DOC MEMS Holding LLC (the "Company").
2. The Certificate of Formation of the Company is hereby amended to change the name of the Company to Adeia Imaging LLC.
3. Accordingly, Article 1. of the Certificate of Formation shall, as amended, read as follows:  
  
"1. The name of the limited liability company is Adeia Imaging LLC."

*[Signature Page Follows]*

IN WITNESS WHEREOF, the undersigned authorized person has executed this  
Certificate of Amendment this 15th day of August, 2022.

DOC MEMS HOLDING LLC

By: Paul Davis

Name: Paul Davis

Title: Authorized Person

*[Signature Page to Certificate of Amendment Changing Name (DOC MEMS Holding LLC)]*

**PATENT**

**RECORDED: 01/08/2024**

**REEL: 066237 FRAME: 0403**