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| <b>PATENT ASSIGNMENT COVER SHEET</b> |
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| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                           |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                               |
| <b>CONVEYING PARTY DATA</b>   |  |
| <b>Name</b>   | <b>Execution Date</b>                    |
| SONY CORPORATION  | 07/27/2016                               |
| <b>RECEIVING PARTY DATA</b>   |  |
| <b>Name:</b>  | SONY SEMICONDUCTOR SOLUTIONS CORPORATION |
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| <b>City:</b>  | KANAGAWA                                 |
| <b>State/Country:</b>   | JAPAN                                    |
| <b>PROPERTY NUMBERS Total: 1</b>  |  |
| <b>Property Type</b>  | <b>Number</b>                            |
| <b>Application Number:</b>  | 13323373                                 |
| <b>CORRESPONDENCE DATA</b>  |  |
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| <b>ATTORNEY DOCKET NUMBER:</b>  | SP312199US00                             |
| <b>NAME OF SUBMITTER:</b>   | PRAMOD CHINTALAPOODI                     |
| <b>SIGNATURE:</b>   | /Pramod Chintalapoodi/                   |
| <b>DATE SIGNED:</b>   | 08/04/2016                               |
| <b>Total Attachments: 6</b>   |  |
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**ASSIGNMENT**

In consideration for value received, **Sony Corporation**, a corporation of Japan, having a place of business at 1-7-1 Konan, Minato-ku, Tokyo 108-0075, JAPAN, the owner of record as evidenced by assignments recorded in the U. S. Patent and Trademark Office hereby sells, assigns, transfers and conveys unto

**Sony Semiconductor Solutions Corporation**, a corporation of Japan, having a place of business at 4-14-1 Asahi-cho, Atsugi-shi, Kanagawa JAPAN

its successors, assigns and legal representatives (hereinafter called the "Assignee"), the entire right, title and interest, for all countries, in and to all inventions which are listed on the attached **Schedule A** and any and all improvements, divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted, thereon, and all reissues and extensions thereof, and all applications for Letters Patent or other grants of protection of proprietary rights including, but not limited to, inventor's certificate, utility model, utility certificate, patent of importation, registration of patent and industrial design registration which may be filed, and which may be granted; upon said inventions in any countries or regions foreign to the United States, and all reissues, renewals and extensions thereof; and we hereby authorize and request the Commissioner of Patents and Trademarks of the United States, and all officials of countries or regions foreign to the United States having authority so to do, to issue all such Letters Patent or other grants of protection upon said inventions to the Assignee or to such nominees as it may designate.

AND authorizes and empowers the said Assignee or nominees to invoke and claim for any application for such Letters Patent or other grants of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by a convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from us.

AND hereby covenants that it has the full right to convey the entire right, title and interest herein assigned and that it has not executed and will not execute any agreement in conflict herewith.

AND hereby covenants and agrees that it will communicate to said Assignee or nominees all facts known to us pertaining to said inventions, and testify in all legal proceedings, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and declarations and in general perform all lawful acts necessary or proper to aid said Assignee or nominees in obtaining, maintaining and enforcing all lawful patent or other grants of protection of said inventions in any and all countries and regions.

DATED: July 27, 2016

Sony Corporation  


By: \_\_\_\_\_

Tomonori Okuwaki  
Deputy Senior General Manager  
Intellectual Property Division

**SCHEDULE A**

| <b>Docket No.</b> | <b>Appln. No.</b> | <b>Filing Date</b> | <b>Title</b>  |
|-------------------|-------------------|--------------------|---|
| SP358143US00      | 15/025179         | 8/14/2015          | Image Sensor, Electronic Device, and Method for Generating Tessellation Tile  |
| SP354035US00      | 15/037739         | 11/17/2014         | Signal Processing Apparatus, Signal Processing Method, and Program  |
| SP353989US00      | 15/035300         | 11/17/2014         | Solid-State Image Capturing Element, Manufacturing Method therefor, and Electronic Device   |
| SP353831US00      | 14/914175         | 8/20/2014          | Connector Apparatus and Communication System  |
| SP353677US00      | 14/908319         | 8/21/2014          | Radiation Detector, Method of Manufacturing Radiation Detector, Imaging Unit, and Imaging and Display System                                    |
| SP353337US00      | 14/911590         | 9/10/2014          | Imaging Device, Manufacturing Apparatus, Manufacturing Method, and Electronic Apparatus   |
| SP353332US00      | 15/022087         | 9/16/2014          | Semiconductor Device, Production Method, and Electronic Apparatus   |
| SP353133US00      | 15/023832         | 9/16/2014          | Solid-State Imaging Element, Method for Manufacturing the Same, and Electronic Device   |
| SP352801US00      | 14/906798         | 7/4/2014           | Radiation Image Pickup Unit and Radiation Image Pickup Display System   |
| SP352795US00      | 15/030319         | 8/8/2014           | Image Processing Apparatus, Image Processing Method, and Program  |
| SP352764US00      | 14/891541         | 6/19/2014          | Solid-State Imaging Element, Method of Manufacturing the Same, and Imaging Device   |
| SP352630US00      | 15/036104         | 10/16/2014         | Imaging Element and Imaging Device  |
| SP352617US00      | 15/022188         | 8/28/2014          | Light Control Device, Imaging Element, and Imaging Device, and Light Transmittance Control Method for Light Control Device                      |
| SP352336US00      | 14/895164         | 5/28/2014          | Comparator Circuit, A/D Conversion circuit, and Display Apparatus   |
| SP352291US00      | 14/204847         | 3/11/2014          | Solid State Imaging Device and Manufacturing Method, and Electronic Apparatus   |
| SP352040US00      | 14/773260         | 2/28/2014          | Solid-State Image Sensor, Manufacturing Method, and Electronic Device   |
| SP351502US00      | 14/773269         | 2/28/2014          | Solid State Image Sensor, Manufacturing Method thereof, and Electronic Device   |
| SP350760US00      | 14/646940         | 11/18/2013         | Image Sensor, Data Transmission Method thereof, Information Processing Apparatus, Information Processing Method, Electronic Device, and Program |
| SP350556US00      | 14/156024         | 1/15/2014          | Controller, Information Processing System, Method of Controlling Controller, and Program  |
| SP350312US00      | 14/220769         | 3/20/2014          | Image Pickup Unit and Image Pickup Display System   |
| SP350243US00      | 14/764831         | 2/3/2014           | Light Receiving and Emitting Device   |
| SP350204US00      | 14/762744         | 1/20/2014          | Imaging Apparatus and Electronic Device   |
| SP350034US00      | 14/653828         | 12/10/2013         | Memory Device and Memory Unit   |
| SP349902US00      | 14/647793         | 11/6/2013          | Storage Device and Storage Unit   |
| SP349813US00      | 14/220791         | 3/20/2014          | Stacked Structure and Method of Manufacturing the Stacked Structure   |

| Docket No.   | Appln. No. | Filing Date | Title   |
|--------------|------------|-------------|---|
| SP349573US00 | 14/888664  | 4/11/2014   | Transmission Circuit, Transmission Method, and Transmission System  |
| SP349148US00 | 14/431970  | 9/27/2013   | Imaging Unit and Imaging Method   |
| SP349056US01 | 14/994126  | 1/12/2016   | Imaging Device, Imaging Apparatus, Production Apparatus and Method, and Semiconductor Device  |
| SP348552US00 | 13/972019  | 8/21/2013   | Image Sensor, Imaging Apparatus, and Apparatus and Method for Manufacturing Image Sensor  |
| SP348304US00 | 13/944497  | 7/17/2013   | Solid State Imaging Apparatus, Signal Reading Method, and Electronic Apparatus  |
| SP347742US00 | 14/428262  | 9/18/2013   | Solid-State Image Pickup Unit and Electronic Apparatus  |
| SP347723US00 | 13/955703  | 7/31/2013   | Camera Module and Electronic Device   |
| SP347205US00 | 13/953214  | 7/29/2013   | Imaging Device, Image Signal Processing Method, and Program   |
| SP346977US00 | 14/395391  | 4/25/2013   | Imaging Apparatus, Imaging Method, Electronic Device, and Program   |
| SP346534US00 | 13/909406  | 6/4/2013    | Imaging Device for Capturing Optical Images   |
| SP346340US00 | 14/420002  | 8/7/2013    | Solid-State Image Pickup Device and Electronic Apparatus  |
| SP346255US00 | 13/919450  | 6/17/2013   | Solid-State Imaging Device and Electronic Device  |
| SP346107US00 | 14/417392  | 7/25/2013   | Semiconductor Device, Method of Manufacturing Semiconductor Device, Solid-State Image Pickup Unit, And Electronic Apparatus   |
| SP346021US00 | 13/953960  | 7/30/2013   | Memory Control Device, Memory Device, Information Processing System and Memory Control Method   |
| SP345947US00 | 13/909881  | 6/4/2013    | Solid-State Imaging element, Calibration Method Of Solid-State Imaging element, Shutter Device, and Electronic Apparatus  |
| SP345192US00 | 14/399418  | 5/8/2013    | Solid-State Imaging Unit and Electronic Apparatus   |
| SP345026US00 | 13/918242  | 6/14/2013   | Solid-State Imaging Device, Method for Controlling the Same, and Electronic Apparatus   |
| SP344873US00 | 14/391475  | 4/16/2013   | Imaging Apparatus and Electronic System   |
| SP344864US00 | 13/854689  | 4/1/2013    | Solid-State Image Sensor With MOS Capacitor storage Section To Which A Negative Bias Is Applied After A Reset Sampling Period and Electronic Device Incorporating Same  |
| SP344242US00 | 14/179964  | 2/13/2014   | Image Sensor and Electronic Device  |
| SP344239US00 | 13/765963  | 2/13/2013   | Imaging Apparatus and Image Transmitting Method   |
| SP344034US00 | 13/900310  | 5/22/2013   | Polymeric Actuator, Actuator Device, Method Of Manufacturing Polymeric Actuator, and Method Of Manufacturing Actuator Device  |
| SP343652US00 | 14/380412  | 2/5/2013    | Solid-State Imaging Unit and Electronic Apparatus With A Signal Charge Accumulated In A Photoelectric Conversion Section Is Divided To Be Read In Predetermined Times Of Intermediate Transfer Operations and A Complete Transfer Operation |
| SP342803US00 | 13/848996  | 3/22/2013   | Storage Device and Storage Unit   |
| SP342723US00 | 13/870156  | 4/25/2013   | Image Pickup Unit and Image Pickup Display System   |

| Docket No.   | Appln. No. | Filing Date | Title   |
|--------------|------------|-------------|---|
| SP342572US00 | 13/749449  | 1/24/2013   | Solid-State Imaging Device, Electronic Device and Driving Method thereof With Selective Second Reading  |
| SP342192US00 | 13/734166  | 1/4/2013    | Image Pickup Unit and Method Of Manufacturing the Same  |
| SP341902US00 | 14/356022  | 12/7/2012   | Image-Capturing Device  |
| SP341322US00 | 13/688835  | 11/29/2012  | Solid-State Imaging Apparatus, Method Of Manufacturing Solid-State Imaging Apparatus and Electronic Device  |
| SP340411US00 | 14/362313  | 12/3/2012   | An Imaging Apparatus, an Electronic Device, and Imaging Method to Uniformize Distribution of Incident Light, and a Photostimulated Luminescence Detection Scanner     |
| SP340191US00 | 13/754635  | 1/30/2013   | Presumably Defective Portion Decision Apparatus, Presumably Defective Portion Decision Method, Fabrication Method for Semiconductor Device and Program                |
| SP340132US00 | 14/353395  | 12/4/2012   | Sensor and Sensing Method for Reducing Power Consumption  |
| SP339711US00 | 14/363971  | 12/7/2012   | Solid-State Imaging Device, Method Of Manufacturing Solid-State Imaging Device, and Electronic Apparatus  |
| SP339611US00 | 14/362797  | 12/4/2012   | Solid-State Imaging Device, Driving Method for Solid-State Imaging Device, and Electronic Appliance   |
| SP339593US00 | 14/368736  | 1/15/2013   | Solid-State Image Pickup Unit, Method Of Manufacturing Solid-State Image Pickup Unit, and Electronic Apparatus  |
| SP338772US00 | 14/382580  | 2/27/2013   | Solid-State Imaging Device and Electronic Apparatus   |
| SP335442US00 | 13/650276  | 10/12/2012  | Image Pickup Unit With A Photoelectric Transducer and Image Pickup Display System   |
| SP334110US00 | 14/233226  | 7/20/2012   | Imaging Device With Reduced Color Mixing and Method Of Manufacturing the Same   |
| SP333040US00 | 13/533380  | 6/26/2012   | Solid-State Imaging Device and Imaging Device   |
| SP320000US00 | 13/460163  | 4/30/2012   | Radiation Image Pickup Device and Radiation Image Pickup Display System Including the Same  |
| SP318890US00 | 13/482631  | 5/29/2012   | Solid-State Imaging Device and Method Of Driving Comprising A First and Second Accumulation Sections for Transferring Charges Exceeding the Saturation Amount         |
| SP318730US01 | 14/472153  | 8/28/2014   | Image Processing Including Image Correction   |
| SP316840US00 | 13/372615  | 2/14/2012   | Virtual Memory System, Virtual Memory Controlling Method, and Program   |
| SP312199US00 | 13/323373  | 12/12/2011  | Simulator, Processing System, Damage Evaluation Method and Damage Evaluation Program  |
| SP311402US00 | 13/137772  | 9/12/2011   | Image Processing Device, Image Processing System, Image Processing Method and Program   |
| SP308930US01 | 14/300989  | 6/10/2014   | Solid-State Imaging Element, Driving Method, and Electronic Apparatus   |
| SP308699US01 | 14/703213  | 5/4/2015    | Solid-State Image Pickup Device In Which Charges Overflowing A Memory During A Charge Transfer Period Are Directed To A Floating Diffusion and Method Of Driving Same |
| SP307939US00 | 13/408293  | 2/29/2012   | Semiconductor Manufacturing Apparatus   |
| SP264303US01 | 14/465432  | 8/21/2014   | Solid-State Imaging Device, Driving Method thereof and Electronic Apparatus   |

| Docket No.   | Appln. No. | Filing Date | Title  |
|--------------|------------|-------------|--|
| SP263828US00 | 13/137567  | 8/26/2011   | Imaging Device and Imaging Apparatus   |
| SP263611US00 | 13/067204  | 5/17/2011   | Coding Device, Imaging Device, Coding Transmission System, and Coding Method   |
| SP247925US01 | 14/045069  | 10/3/2013   | Solid-State Imaging Device, Manufacturing Method and Designing Method thereof, and Electronic Device   |
| SP246876US00 | 13/637766  | 4/1/2011    | Image Pickup Apparatus Having Units Each With A Pair Of Light Receiving Elements, Solid-State Image Pickup Element, and Image Pickup Method Including the Same   |
| SP246528US02 | 14/995020  | 1/13/2016   | Solid-State Imaging Device and Electronic Apparatus  |
| SP352829US00 | 14/905041  | 7/3/2014    | Radiation Image Pickup Unit and Radiation Image Pickup Display System  |
| SP352218US00 | 15/101,062 | 9/29/2014   | Imaging Unit, Lens Barrel, and Portable Terminal   |
| SP346946US01 | 14/801644  | 7/16/2015   | Information Processing Apparatus and Method, and Photoelectric Conversion Apparatus  |
| SP346585US01 | 15/005015  | 1/25/2016   | Connecting Multiple Electronic Devices   |
| SP346364US01 | 14/738462  | 6/12/2015   | Signal Processing Device and Method  |
| SP346174US01 | 15/063214  | 3/7/2016    | Solid-State Image Pickup Device and Manufacturing Method thereof, and Electronic Apparatus   |
| SP345914US01 | 14/953731  | 11/30/2015  | Storage Device and Storage Unit  |
| SP345715US00 | 14/401370  | 5/15/2013   | Imaging Element, Driving Method, and Electronic Apparatus  |
| SP344516US01 | 15/054095  | 2/25/2016   | Image Transmission System and Image Transmission Method  |
| SP343652US01 | 15/069603  | 3/14/2016   | Solid-State Imaging Unit and Electronic Apparatus With A Signal Charge Accumulated In A Photoelectric Conversion Section That Is Divided To Be Read In Predetermined Times Of Intermediate Transfer Operations and A Complete Transfer Operation |
| SP340712US01 | 14/821495  | 8/7/2015    | Solid-State Imaging Device With Autofocus and Electronic Apparatus   |
| SP339884US01 | 14/831642  | 8/20/2015   | Image Pickup Unit and Electronic Apparatus   |
| SP339711US01 | 15/146099  | 5/4/2016    | Solid-State Imaging Device, Method Of Manufacturing Solid-State Imaging Device, and Electronic Apparatus   |
| SP339201US01 | 14/994119  | 1/12/2016   | Solid-State Imaging Element and Electronic Device  |
| SP336390US01 | 15/052585  | 2/24/2016   | Imaging Element, Imaging Device, Electronic Device, and Imaging Method   |
| SP332080US00 | 14/387511  | 3/21/2013   | Solid State Imaging Element, Driving Method Of Solid State Imaging Element, and Electronic Apparatus   |
| SP326970US01 | 15/018840  | 2/8/2016    | Solid-State Imaging Device and Electronic Apparatus  |
| SP323150US01 | 15/054058  | 2/25/2016   | Solid-State Imaging Device, Method for Driving the Same, Method for Manufacturing the Same, and Electronic Device  |
| SP320330US01 | 15/015327  | 2/4/2016    | Waveguide Device, Communication Module and Electronic Device   |
| SP316970US01 | 14/293591  | 6/2/2014    | Imaging Element, Method for Manufacturing Imaging Element, Pixel Design Method, and Electronic Apparatus   |
| SP313170US02 | 14/688133  | 4/16/2015   | Solid-State Imaging Device   |

| <b>Docket No.</b> | <b>Appln. No.</b> | <b>Filing Date</b> | <b>Title</b>  |
|-------------------|-------------------|--------------------|---|
| SP312680US01      | 14/808101         | 7/24/2015          | Solid-State Imaging Apparatus, Method Of Manufacturing Solid-State Imaging Apparatus, and Electronic Apparatus  |
| SP263827US01      | 14/954988         | 11/30/2015         | Semiconductor Apparatus and Method Of Manufacturing Semiconductor Apparatus   |
| SP248369US01      | 14/825448         | 8/13/2015          | Image Pickup Device Without A Light Shielding Device and Defect Detecting Method thereof  |
| SP246239US01      | 14/497116         | 9/25/2014          | Method and Apparatus for Eliminating Crosstalk Amount Included In An Output Signal  |
| SP245425US02      | 15/063200         | 3/7/2016           | Two-Dimensional Solid-State Image Capture Device With Polarization Member and Color Filter for Sub-Pixel Regions and Polarization-Light Data Processing Method therefor |
| SP241070US02      | 14/845742         | 9/4/2015           | Solid-State Imaging Device, Method Of Driving the Solid-State Imaging Device, and Electronic Device   |
| SP222414US01      | 14/253576         | 4/15/2014          | Solid-State Imaging Device and Control System   |
| SP215336US06      | 14/052323         | 10/11/2013         | Back-Illuminated Type Solid-State Imaging Device  |