PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
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EPAS ID: PAT5868067

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	AMENDED AND RESTATED U.S. PATENT AND TRADEMARK SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
MAXAR TECHNOLOGIES ULC	12/11/2019

RECEIVING PARTY DATA

Name:	ROYAL BANK OF CANADA, AS COLLATERAL AGENT
Street Address:	20 KING STREET WEST, 4TH FLOOR
City:	TORONTO, ONTARIO
State/Country:	CANADA
Postal Code:	M5H 1C4

PROPERTY NUMBERS Total: 4

Property Type	Number
Patent Number:	7783734
Patent Number:	8412851
Patent Number:	9369883
Patent Number:	7889129

CORRESPONDENCE DATA

Fax Number: (213)891-8763

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email: rhonda.deleon@lw.com
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Address Line 1:   355 SOUTH GRAND AVENUE
Address Line 4:   LOS ANGELES, CALIFORNIA 90071-1560

ATTORNEY DOCKET NUMBER:	061398-0031
NAME OF SUBMITTER:	RHONDA DELEON
SIGNATURE:	/Rhonda DeLeon/
DATE SIGNED:	12/13/2019

Total Attachments: 42
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AMENDED AND RESTATED U.S. PATENT
AND TRADEMARK SECURITY AGREEMENT

This AMENDED AND RESTATED U.S. PATENT AND TRADEMARK SECURITY AGREEMENT, dated as of December 11, 2019 (as amended, amended and restated, supplemented or otherwise modified from time to time, this **Agreement**), is made by each of the undersigned entities, each an MDA Obligor (each such entity, a **Grantor**, and collectively, the **Grantors**), in favor of ROYAL BANK OF CANADA, in its capacity as collateral agent (in such capacity, the **Collateral Agent**), for the benefit of the Secured Parties, in accordance with the Restated Credit Agreement dated as of October 5, 2017 among Maxar Technologies Inc. (the **US Borrower**), MDA Systems Holdings Ltd. (the **Cdn. Borrower** and, together with the US Borrower, the **Borrowers**), Royal Bank of Canada, as administrative agent and Collateral Agent, and the lenders from time to time party thereto (the **Lenders**), as amended by each of that certain First Amending Agreement, dated as of December 21, 2018, that certain Second Amending Agreement, dated as of December 21, 2018 (as amended by that certain Amending Agreement in respect of such Second Amending Agreement, dated as of January 15, 2019), that certain Third Amending Agreement dated as of November 4, 2019, and that certain Fourth Amending Agreement to be dated as of the date hereof (to become effective upon the satisfaction of the conditions precedent set out therein), and as supplemented by that certain Assumption and Novation Agreement dated as of January 1, 2019 (as so amended and supplemented, and as may be further amended, restated or amended and restated, the **Credit Agreement**).

WITNESSETH:

WHEREAS, as required by the Credit Agreement, pursuant to an Amended and Restated Security Agreement and an amended and Restated Pledge and Security Agreement, each dated as of the date hereof between, inter alios, the Grantors party thereto and the Collateral Agent (the **GSAs**), each Grantor has granted to the Collateral Agent a security interest in substantially all of such Grantor's property, including, without limitation, the Collateral (as defined below) referred to in Section 1 below;

WHEREAS, in connection with the Credit Agreement, certain Grantors (the **Existing IP Grantors**) party hereto have previously agreed to secure such Grantor's obligations under the Credit Agreement and the MDA Obligor Guarantee in accordance with the terms of each of the existing U.S. Patent and Trademark Security Agreements listed in Schedule C attached hereto (collectively, the **Existing IP Security Agreements**) to which it is a party;

WHEREAS, each Existing IP Grantor party hereto and the Collateral Agent desires to amend and restate each of the Existing IP Security Agreements to which it is a party in the manner set forth herein; and

WHEREAS, pursuant to the Credit Agreement, each Grantor has agreed to execute this Agreement in respect of its Collateral for recording with the United States Patent and Trademark Office and any other office in which a security interest in the Collateral may be recorded under the laws of any other applicable jurisdiction.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter set forth, each Grantor and the Collateral Agent agree as follows:

1   **Grant of Security**

Each Grantor hereby grants to the Collateral Agent for the benefit of the Secured Parties, a security interest in and to all of such Grantor's right, title and interest in and to its Patents and Trademarks (each as defined below), whether or not such interest is joint or in common with one or more third parties or another Grantor, including the following (the **Collateral**):

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(a)   all present and future United States of America and foreign patents, design patents and certificates of invention that may be developed or acquired by or on behalf of such Grantor, or similar industrial property rights, and applications for any of the foregoing, including, but not limited to, the patents set forth in Schedule A hereto opposite the name of such Grantor, as Schedule A may be supplemented from time to time by supplements to the Security and this Agreement which shall be executed and delivered by such Grantor to the Collateral Agent from time to time, and all reissues, divisions, continuations, continuations-in-part, renewals, extensions and re-examinations thereof and amendments thereto (the **Patents**);

(b)   all present and future United States of America and foreign trademarks, trade names, corporate names, company names, business names, fictitious business names, internet domain names, service marks, certification marks, collective marks, logos, other source or business identifiers, designs and general intangibles of a like nature, all registrations and applications for any of the foregoing including, but not limited to, the trademark and service mark registrations, applications, and licenses set forth in Schedule B hereto opposite the name of such Grantor, as Schedule B may be supplemented from time to time by supplements to the Security and this Agreement which shall be executed and delivered by such Grantor to the Collateral Agent from time to time, together with the goodwill connected with the use thereof and symbolized thereby and all extensions and renewals thereof (the **Trademarks**);

(c)   all rights of any kind whatsoever of such Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions and otherwise throughout the world;

(d)   any and all royalties, fees, income, payments and other proceeds now or hereafter due or payable with respect to any and all of the foregoing; and

(e)   any and all claims and causes of action with respect to any of the foregoing, whether occurring before, on or after the date hereof, including all rights to and claims for damages, restitution and injunctive and other legal and equitable relief for past, present and future infringement, dilution, misappropriation, violation, misuse, breach or default, with the right but no obligation to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.

2   Security for Obligations

This Agreement secures, and the Collateral is collateral security for, with respect to each Grantor, the prompt and complete payment and performance in full when due, whether at stated maturity, by required prepayment, declaration, acceleration, demand or otherwise of the Secured Obligations (as such term is defined in the GSAs, as applicable).

3   Scope of Security Interest

To the extent that the creation of the security interest would result in the termination of any agreement, license or permit of the Grantors or to the extent any such Patent or Trademark would otherwise constitute Excluded Collateral (each, a **Restricted Asset**), the security interest will not attach to the Restricted Asset for so long as it remains a Restricted Asset. Notwithstanding anything in this Section 3 to the contrary, each Grantor shall grant to the Collateral Agent a security interest in any Collateral that ceases to be a Restricted Asset as a result of obtaining the consent of the other party or otherwise.

Notwithstanding Section 1, no security interest is or will be granted pursuant hereto in any right, title or interest of any Grantor in, to or under any Excluded Collateral.

In addition to the preceding paragraph, the guarantee, security and perfection requirements under this Agreement shall be subject to the Agreed Security Principles.

4   Recordation

Each Grantor authorizes and agrees that it will, at its own expense, cause this Agreement, and any supplements or amendments thereto, to be recorded at the United States Trademark and Patent Office (and any successor office and any similar office in any United States state). Each Grantor authorizes the United States Commissioner for Patents, the United States Commissioner for Trademarks and any other government officials to record and register this Agreement.

5   Supplemental Security

This Agreement is in addition to and without prejudice to all other security now held or which may hereafter be held by the Collateral Agent.

6   Execution in Counterparts

This Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

7   Grants, Rights and Remedies

This Agreement has been entered into in conjunction with the provisions of the Credit Agreement. Each Grantor does hereby acknowledge and confirm that the grant of the security interest hereunder to, and the rights and remedies of, the Collateral Agent with respect to the Collateral are more fully set forth in the Credit Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein.

8   Governing Law

This Agreement shall be governed by, and construed in accordance with, the laws of the State of New York, without regard to conflict of laws principles.

9   US Secured Obligations

Notwithstanding any other provision of this Agreement, the Obligations of each Grantor, to the extent that it is a Tax Excluded Subsidiary, shall not include the US Secured Obligations; provided that the US Borrower may, by notice to the Administrative Agent, provide that the Obligations of any such Grantor include all US Secured Obligations.

10   Amendment and Restatement

This Agreement amends, restates and replaces each Existing IP Security Agreement in its entirety, but does not extinguish the obligations outstanding thereunder or otherwise discharge or release the Existing IP Grantors from their respective obligations arising thereunder, the Liens created thereby or the priority of any pledge, security agreement or any other security therefor. Nothing herein contained shall be construed as a substitution or novation of the obligations outstanding under the Existing IP Security Agreements, which shall remain in full force and effect, except as expressly amended and restated hereby.

11   Intercreditor Agreement

Notwithstanding anything herein, the Liens and Security Interest granted to the Collateral Agent pursuant to this Agreement and the exercise of any right or remedy by the Collateral Agent hereunder are subject to the terms of the First Lien Intercreditor Agreement, dated as of December 11, 2019 (as amended, restated, amended and restated or otherwise modified from time to time, the **First Lien Intercreditor Agreement**), among Royal Bank of Canada, as Administrative Agent, the Collateral Agent, and the Wilmington Trust, N.A, in its capacity as collateral agent pursuant to the Indenture, dated as of December 2, 2019 (the **Base Indenture**), by and among SSL Robotics LLC, a Delaware limited liability company and a wholly-owned subsidiary of the US Borrower (the **Escrow Issuer**), Wilmington Trust, National Association, as trustee (in such capacity, the **Trustee**) and Wilmington Trust, National Association, as collateral agent, and (y) that certain Supplemental Indenture, dated as of December 11, 2019 (the **Supplemental Indenture** and together with the Base Indenture, the **Indenture**), by and among the US Borrower, the other Grantors party thereto, as subsidiary guarantors, and the Trustee. In the event of any conflict between the terms of the First Lien Intercreditor Agreement and this Agreement, the terms of the First Lien Intercreditor Agreement shall govern and control.

12   Conflict of Terms

In the event of any conflict between the provisions of this Agreement and the provisions of the Credit Agreement which cannot be resolved by both provisions being complied with, the provisions contained in the Credit Agreement will prevail to the extent of such conflict.

13   Defined Terms

Capitalized terms used and not otherwise defined in this Agreement have the meanings given to them in the Credit Agreement.

14   Successors, etc.

In this Agreement:

(a)   reference to any body corporate or partnership shall include successors thereto, whether by way of amalgamation or otherwise;

(b)   references to any statute, enactment or legislation or to any section or provision thereof include a reference to any order, ordinance, regulation, rule or by-law or proclamation made under or pursuant to that statute, enactment or legislation and all amendments, modifications, consolidations, re-enactments or replacements thereof or substitutions therefor from time to time; and

(c)   reference to any agreement (including without limitation any definitions in or portions of an agreement incorporated herein by reference), instrument, Permit or other document shall include reference to such agreement, instrument, Permit or other document as the same may from time to time be amended, supplemented, replaced or restated.

[Signatures follow]

IN WITNESS WHEREOF the parties hereto have executed this by their respective officers thereunto duly authorized, as of the date first above written.

MAXAR TECHNOLOGIES ULC, as a Grantor
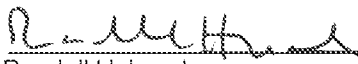
DIGITALGLOBE, INC., as a Grantor

SPACE SYSTEMS/LORAL, LLC, as a Grantor

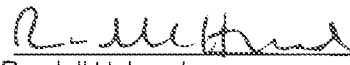MACDONALD, DETTWILER AND ASSOCIATES INC., as a Grantor

MACDONALD, DETTWILER AND ASSOCIATES CORPORATION, as a Grantor

MDA GEOSPATIAL SERVICES INC., as a Grantor
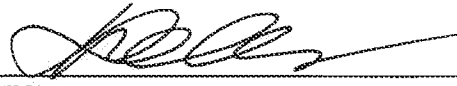
NEPTEC DESIGN GROUP LTD., as a Grantor

By: _____
Name: Randall H. Lynch
Title: President and Treasurer

RADIANT GEOSPATIAL SOLUTIONS LLC, as a Grantor

By: _____
Name: Randall H. Lynch
Title: Vice President and Treasurer

[Signature Page to US Patent and Trademark Security Agreement (MDA Obligors)]

ROYAL BANK OF CANADA, as Collateral Agent

By:

Name:

Title:

SCHEDULE A

PATENT REGISTRATIONS AND PATENT APPLICATIONS

	Assignee	Patent Title	Serial No.	Filing Date	Patent No.	Issue Date
1.	DigitalGlobe, Inc.	Apparatuses and methods for mapping image coordinates to ground coordinates	0984662 1	05/01/200 1	6735348	05/11/200 4
2.	DigitalGlobe, Inc.	Method for using remotely sensed data to provide agricultural information	1004742 3	01/15/200 2	7068816	06/27/200 6
3.	DigitalGlobe, Inc.	Tonal balancing of multiple images	1042372 0	04/25/200 3	7236646	06/26/200 7
4.	DigitalGlobe, Inc.	Image warp	1068429 5	10/10/200 3	7269299	09/11/200 7
5.	DigitalGlobe, Inc.	Estimation of coefficients for a rational polynomial camera model	1084927 6	05/18/200 4	7421151	09/02/200 8
6.	DigitalGlobe, Inc.	Method and apparatus for determination of water pervious surfaces	1090869 5	05/23/200 5	7660430	02/09/201 0
7.	DigitalGlobe, Inc.	Tonal balancing of multiple images	1175327 2	05/24/200 7	7317844	01/08/200 8
8.	DigitalGlobe, Inc.	Semi-automatic extraction of linear features from image data	1176476 5	06/18/200 7	7653218	01/26/201 0
9.	DigitalGlobe, Inc.	Image warp	1183516 9	08/07/200 7	7613362	11/03/200 9
10.	DigitalGlobe, Inc.	Method and apparatus for enhancing a digital image	1246379 7	05/11/200 9	7715651	05/11/201 0
11.	DigitalGlobe, Inc.	Semi-automatic extraction of linear features from image data	1260691 8	10/27/200 9	8155391	04/10/201 2
12.	DigitalGlobe, Inc.	Advanced cloud cover assessment	1311258 3	05/20/201 1	8594375	11/26/201 3
13.	DigitalGlobe, Inc.	Semi-automatic extraction of linear features from image data	1341756 8	03/12/201 2	8488845	07/16/201 3

14.	DigitalGlobe, Inc.	Pan sharpening digital imagery	13452741	04/20/2012	8761506	06/24/2014
15.	DigitalGlobe, Inc.	Hyperspherical pan sharpening	13452768	04/20/2012	8737733	05/27/2014
16.	DigitalGlobe, Inc.	Automated metric information network	13762355	02/07/2013	9251419	02/02/2016
17.	DigitalGlobe, Inc.	Using parallax in remote sensing to determine cloud feature height	13835804	03/15/2013	9001311	04/07/2015
18.	DigitalGlobe, Inc.	Automated geospatial image mosaic generation	13838475	03/15/2013	9042674	05/26/2015
19.	DigitalGlobe, Inc.	System and method for geolocation of social media posts	13840173	03/15/2013	9032000	05/12/2015
20.	DigitalGlobe, Inc.	Atmospheric compensation in satellite imagery	13840743	03/15/2013	9396528	07/19/2016
21.	DigitalGlobe, Inc.	Automated geospatial image mosaic generation with automatic source selection	13952442	07/26/2013	9202259	12/01/2015
22.	DigitalGlobe, Inc.	Automated geospatial image mosaic generation with automatic cutline generation	13952464	07/26/2013	9135505	09/15/2015
23.	DigitalGlobe, Inc.	Automatic generation of built-up layers from high resolution satellite image data	13955268	07/31/2013	9230168	01/05/2016
24.	DigitalGlobe, Inc.	Advanced cloud cover assessment for panchromatic images	13955429	07/31/2013	8913826	12/16/2014
25.	DigitalGlobe, Inc.	Crowdsourced search and locate platform	14010450	08/26/2013	9122708	09/01/2015
26.	DigitalGlobe, Inc.	Automatic extraction of built-up footprints from high resolution overhead imagery through manipulation of alpha-tree data structures	14013904	08/29/2013	9031325	05/12/2015

27.	DigitalGlobe, Inc.	Automated and scalable object and feature extraction from imagery	14024399	09/11/2013	9141872	09/22/2015
28.	DigitalGlobe, Inc.	Classification of land based on analysis of remotely-sensed earth images	14024418	09/11/2013	9147132	09/29/2015
29.	DigitalGlobe, Inc.	Crowdsourced image analysis platform	14049189	10/08/2013	9560092	01/31/2017
30.	DigitalGlobe, Inc.	Crowdsourced search and locate platform	14049199	10/08/2013	9128959	09/08/2015
31.	DigitalGlobe, Inc.	Techniques for identifying parking lots in remotely-sensed images by identifying parking rows	14053332	10/14/2013	9275297	03/01/2016
32.	DigitalGlobe, Inc.	Generation of high resolution population density data sets through exploitation of high resolution overhead imagery data and low resolution population density data sets	14063309	10/25/2013	9230169	01/05/2016
33.	DigitalGlobe, Inc.	Automatic extraction of built-up footprints from high resolution overhead imagery through manipulation of alpha-tree data structures	14089405	11/25/2013	8682079	03/25/2014
34.	DigitalGlobe, Inc.	System and method for multi resolution and multi temporal image search	14091412	11/27/2013	9529824	12/27/2016
35.	DigitalGlobe, Inc.	Oil tank farm storage monitoring	14095608	12/03/2013	9195876	11/24/2015
36.	DigitalGlobe, Inc.	Automated remote car counting	14095637	12/03/2013	9122930	09/01/2015
37.	DigitalGlobe, Inc.	Automated compound structure characterization in overhead imagery	14163008	01/24/2014	9639755	05/02/2017
38.	DigitalGlobe, Inc.	Automated sliver removal in orthomosaic generation	14219884	03/19/2014	9367895	06/14/2016

39.	DigitalGlobe, Inc.	Automated geospatial image mosaic generation with multiple zoom level support	14307307	06/17/2014	9396391	07/19/2016
40.	DigitalGlobe, Inc.	Bathymetric techniques using satellite imagery	14340389	07/24/2014	9336441	05/10/2016
41.	DigitalGlobe, Inc.	Multi-spectral image labeling with radiometric attribute vectors of image space representation components	14499440	09/29/2014	9619711	04/11/2017
42.	DigitalGlobe, Inc.	Crowdsourced feature identification and orthorectification	14680495	04/07/2015	10078645	09/18/2018
43.	DigitalGlobe, Inc.	System and method for large scale crowdsourcing of map data cleanup and correction	14680665	04/07/2015	10083186	09/25/2018
44.	DigitalGlobe, Inc.	Advanced semi-automated vector editing in two and three dimensions	14681043	04/07/2015	10133928	11/20/2018
45.	DigitalGlobe, Inc.	Automated tonal balancing	14708129	05/08/2015	9589334	03/07/2017
46.	DigitalGlobe, Inc.	Some automated and semi-automated tools for linear feature extraction in two and three dimensions	14730176	06/03/2015	9727784	08/08/2017
47.	DigitalGlobe, Inc.	System and methods for semi-automated editing of ortho-mosaics built from remotely-sensed imagery	14730227	06/03/2015	9600740	03/21/2017
48.	DigitalGlobe, Inc.	Spectral data analytic cube classifier (SPADACC) for continuous wide area geospatial modeling using normalized and highly dimensional multispectal raster data	14788651	06/30/2015	10121106	11/06/2018
49.	DigitalGlobe, Inc.	Automated seamline construction for high-	14789877	07/01/2015	9858645	01/02/2018

		quality high-resolution orthomosaics				
50.	DigitalGlobe, Inc.	Automated conversion of two-dimensional hydrology vector models into valid three-dimensional hydrology vector models	14789893	07/01/2015	9626565	04/18/2017
51.	DigitalGlobe, Inc.	Integrated architecture for near-real-time satellite imaging applications	14800644	07/15/2015	10014928	07/03/2018
52.	DigitalGlobe, Inc.	System and method for combining geographical and eco-nomic data extracted from satellite imagery for use in pre-dictive modeling	14801740	07/16/2015		
53.	DigitalGlobe, Inc.	Global-scale object detection using satellite imagery	14810382	07/27/2015	9922265	03/20/2018
54.	DigitalGlobe, Inc.	Object detection with textural to spectral domain adaptation	14819839	08/06/2015	9495618	11/15/2016
55.	DigitalGlobe, Inc.	Automated and scalable object and feature extraction from imagery	14826740	08/14/2015	9569690	02/14/2017
56.	DigitalGlobe, Inc.	Broad area geospatial object detection using autogenerated deep learning models	14835736	08/26/2015	9589210	03/07/2017
57.	DigitalGlobe, Inc.	Classification of land based on analysis of remotely-sensed earth images	14837628	08/27/2015	9619734	04/11/2017
58.	DigitalGlobe, Inc.	Global-scale damage detection using satellite imagery	14941504	11/13/2015	9858479	01/02/2018
59.	DigitalGlobe, Inc.	Generation of high resolution population density data sets through exploitation of high resolution overhead imagery data and low	14976400	12/21/2015	9672424	06/06/2017

		resolution population density data sets				
60.	DigitalGlobe, Inc.	Automated metric information network	14984613	12/30/2015	9875404	01/23/2018
61.	DigitalGlobe, Inc.	Automated Registration Of Three-Dimensional Vectors To Three-Dimensional Linear Features In Remotely-Sensed Data	14993074	01/11/2016	10223828	03/05/2019
62.	DigitalGlobe, Inc.	Automated sliver removal in orthomosaic generation	15040780	02/10/2016	9916640	03/13/2018
63.	DigitalGlobe, Inc.	Automated remote car counting	15064609	03/09/2016	9619710	04/11/2017
64.	DigitalGlobe, Inc.	Enhanced crowdsourced search and locate platform	15077886	03/22/2016	10176194	01/08/2019
65.	DigitalGlobe, Inc.	Bathymetric techniques using satellite imagery	15093040	04/07/2016	9767361	09/19/2017
66.	DigitalGlobe, Inc.	Atmospheric compensation in satellite imagery	15186171	06/17/2016	9990705	06/05/2018
67.	DigitalGlobe, Inc.	Synthesizing training data for broad area geospatial object detection	15194541	06/27/2016	9767565	09/19/2017
68.	DigitalGlobe, Inc.	Automated geospatial image mosaic generation with multiple zoom level support	15204307	07/07/2016	9940514	04/10/2018
69.	DigitalGlobe, Inc.	Choreographing automated and manual processes in support of mosaic generation	15228954	08/04/2016	10120884	11/06/2018
70.	DigitalGlobe, Inc.	Analyzing and viewing social interactions based on personal electronic devices	15239729	08/17/2016		
71.	DigitalGlobe, Inc.	Movement intelligence using satellite imagery	15241034	08/18/2016	10089528	10/02/2018
72.	DigitalGlobe, Inc.	System and method for large scale crowdsourcing of map	15262118	09/12/2016	10346495	07/09/2019

		data cleanup and correction				
73.	DigitalGlobe, Inc.	Advanced cloud detection using machine learning and optimization techniques	15362254	11/28/2016	10083354	09/25/2018
74.	DigitalGlobe, Inc.	System and method for multi resolution and multi temporal image search	15391786	12/27/2016	10482122	11/19/2019
75.	DigitalGlobe, Inc.	Automated tonal balancing	15445949	02/28/2017	10311557	06/04/2019
76.	DigitalGlobe, Inc.	Broad area geospatial object detection using autogenerated deep learning models	15452076	03/07/2017	10013774	07/03/2018
77.	DigitalGlobe, Inc.	System and methods for semi-automated editing of ortho-mosaics built from remotely-sensed imagery	15465581	03/21/2017	10121074	11/06/2018
78.	DigitalGlobe, Inc.	Automated conversion of two-dimensional hydrology vector models into valid three-dimensional hydrology vector models	15490866	04/18/2017	9922252	03/20/2018
79.	DigitalGlobe, Inc.	System for simplified generation of systems for broad area geospatial object detection	15608894	05/30/2017	9904849	02/27/2018
80.	DigitalGlobe, Inc.	Some automated and semi-automated tools for linear feature extraction in two and three dimensions	15672267	08/08/2017	10318808	06/11/2019
81.	DigitalGlobe, Inc.	Muddy water detection using normalized semantic layers	15694353	09/01/2017		
82.	DigitalGlobe, Inc.	Synthesizing training data for broad area geospatial object detection	15709252	09/19/2017	10157479	12/18/2018
83.	DigitalGlobe, Inc.	Techniques for image co-registration	15716425	09/26/2017		

84.	DigitalGlobe, Inc.	Shape-based segmentation using hierarchical image representations for automatic training data generation and search space specification for machine learning algorithms	15802313	11/02/2017	10372984	08/06/2019
85.	DigitalGlobe, Inc.	Anomaly detection using non-target clustering	15802743	11/03/2017		
86.	DigitalGlobe, Inc.	Unsupervised land use and land cover detection	15812124	11/14/2017		
87.	DigitalGlobe, Inc.	Sensor shift for remote sensing	15825478	11/29/2017		
88.	DigitalGlobe, Inc.	Automated seamline construction for high-quality high-resolution orthomosaics	15860281	01/02/2018	10346952	07/09/2019
89.	DigitalGlobe, Inc.	System for simplified generation of systems for broad area geospatial object detection	15906348	02/27/2018	10372985	08/06/2019
90.	DigitalGlobe, Inc.	Atmospheric compensation in satellite imagery	16000844	06/05/2018		
91.	DigitalGlobe, Inc.	Broad area geospatial object detection using autogenerated deep learning models	16027235	07/03/2018	10395388	08/27/2019
92.	DigitalGlobe, Inc.	Advanced cloud detection using machine learning and opti-mization techniques	16140052	09/24/2018		
93.	DigitalGlobe, Inc.	Movement intelligence using satellite imagery	16150177	10/02/2018		
94.	DigitalGlobe, Inc.	System and methods for semi-automated editing of ortho-mosaics built from remotely-sensed imagery	16182367	11/06/2018		
95.	DigitalGlobe, Inc.	Advanced semi-automated vector editing	16196979	11/20/2018		

		in two and three dimensions				
96.	DigitalGlobe, Inc.	Synthesizing training data for broad area geospatial object detection	16224400	12/18/2018		
97.	DigitalGlobe, Inc.	Automated registration of three-dimensional vectors to three-dimensional linear features in remotely-sensed data	16293409	03/05/2019		
98.	Radiant Geospatial Solutions LLC	Reference-based autofocusing method for ifsar and other applications	09510561	02/22/2000	6181270	01/30/2001
99.	Radiant Geospatial Solutions LLC	System and method for coherent array aberration sensing	09916422	07/27/2001	6597304	07/22/2003
100.	Radiant Geospatial Solutions LLC	Self-calibrating interferometric synthetic aperture radar altimeter	10437836	05/14/2003	7218268	05/15/2007
101.	Radiant Geospatial Solutions LLC	Method and system for providing along-track alignment and formatting of synthetic aperture radar (SAR) data, and SAR image formation algorithms using such method and system	10615687	07/09/2003	6873285	03/29/2005
102.	Radiant Geospatial Solutions LLC	Measurement-diverse imaging and wavefront sensing with amplitude and phase estimation	11446109	06/05/2006	7531774	05/12/2009
103.	Radiant Geospatial Solutions LLC	Methods for two-dimensional autofocus in high resolution radar systems	11889637	08/15/2007	7663529	02/16/2010
104.	Radiant Geospatial Solutions LLC	Methods for two-dimensional autofocus in high resolution radar systems	12656689	02/12/2010	7843377	11/30/2010
105.	Radiant Geospatial Solutions LLC	Methods for two-dimensional autofocus in high resolution radar systems	12926602	11/29/2010	8009079	08/30/2011

106.	Radiant Geospatial Solutions LLC	Correlated Land Change System and Method	13096174	04/28/2011	8548248	10/01/2013
107.	Radiant Geospatial Solutions LLC	Method for aligning a plurality of sub-apertures of a multiple-aperture imaging system	13225127	09/02/2011	8559017	10/15/2013
108.	Radiant Geospatial Solutions LLC	System and method for aggregating multi-source data and identifying geographic areas for data acquisition	15341338	11/02/2016	10346446	07/09/2019
109.	Radiant Geospatial Solutions LLC	Method and apparatus for imaging the silhouette of an object occluding a light source using a synthetic aperature	15488918	04/17/2017	10152802	12/11/2018
110.	Space Systems/Loral, LLC	Microwave multiplexer with manifold spacing adjustment	09477881	01/05/2000	6472951	10/29/2002
111.	Space Systems/Loral, LLC	Onboard attitude control using reaction wheels	09478787	01/06/2000	6285928	09/04/2001
112.	Space Systems/Loral, LLC	System and method for limiting the effects of actuator saturation to certain body axes of a spacecraft	09493596	01/31/2000	6456907	09/24/2002
113.	Space Systems/Loral, LLC	High efficiency dual polarized horn antenna	09497036	02/02/2000	6211838	04/03/2001
114.	Space Systems/Loral, LLC	Gregorian reflector antenna system having a subreflector optimized for an elliptical antenna aperture	09499052	02/04/2000	6243048	06/05/2001
115.	Space Systems/Loral, LLC	Method of end bonding tubular sections and bonding a flange on the end of tubular sections	09503374	02/14/2000	6398902	06/04/2002
116.	Space Systems/Loral, LLC	Magnetic torquer control with thruster augmentation	09512688	02/24/2000	6292722	09/18/2001
117.	Space Systems/Loral, LLC	Planar magnetic assembly	09516727	03/01/2000	6380834	04/30/2002

118.	Space Systems/Loral, LLC	Method and apparatus for generating orbital data	09516927	03/01/2000	6253125	06/26/2001
119.	Space Systems/Loral, LLC	Controller and control method for satellite orbit-keeping maneuvers	09517032	03/02/2000	6445981	09/03/2002
120.	Space Systems/Loral, LLC	Automated orbit compensation system and method	09528474	03/17/2000	6314344	11/06/2001
121.	Space Systems/Loral, LLC	Satellite commanding using remotely controlled modulation of satellite on-board telemetry parameters	09538891	03/30/2000	6735501	05/11/2004
122.	Space Systems/Loral, LLC	Spacecraft having a dual reflector holddown for deploying multiple reflectors in a single release event	09558444	04/25/2000	6308919	10/30/2001
123.	Space Systems/Loral, LLC	Closed-loop spacecraft orbit control	09565836	05/05/2000	6439507	08/27/2002
124.	Space Systems/Loral, LLC	Method for using satellite state vector prediction to provide satellite sensor automatic scan inhibit and/or sensor switching	09578992	05/25/2000	6317660	11/13/2001
125.	Space Systems/Loral, LLC	Argument of perigee correction with longitude control for inclined, eccentric, geosynchronous satellites	09588858	06/06/2000	6317661	11/13/2001
126.	Space Systems/Loral, LLC	Spacecraft radiator system using a heat pump	09624151	07/24/2000	6883588	04/26/2005
127.	Space Systems/Loral, LLC	Methods for using satellite state vector prediction to provide three-axis satellite attitude control	09627482	07/28/2000	6237876	05/29/2001
128.	Space Systems/Loral, LLC	Array fed multiple beam array reflector antenna systems and method	09640936	08/17/2000	6392611	05/21/2002
129.	Space Systems/Loral, LLC	Shaped reflector antenna system configuration for	09643269	08/22/2000	6411262	06/25/2002

		use on a communication satellite				
130.	Space Systems/Loral, LLC	Method and apparatus for rate integration supplement for attitude referencing with quaternion differencing	0967090 4	09/28/200 0	6454217	09/24/200 2
131.	Space Systems/Loral, LLC	Stepped waveguide slot array with phase control and satellite communication system employing same	0968429 9	10/06/200 0	6304228	10/16/200 1
132.	Space Systems/Loral, LLC	Bent-pipe satellite system which couples a lan to a gateway and uses a dynamic assignment/multiple access protocol	0970824 9	11/07/200 0	6400696	06/04/200 2
133.	Space Systems/Loral, LLC	Broadband communication systems and methods using low and high bandwidth request and broadcast links	0971312 1	11/15/200 0	6879808	04/12/200 5
134.	Space Systems/Loral, LLC	Spacecraft multi-directional loop heat pipe thermal systems	0971758 5	11/21/200 0	6591899	07/15/200 3
135.	Space Systems/Loral, LLC	Spacecraft multiple loop heat pipe thermal system for internal equipment panel applications	0971818 1	11/21/200 0	6478258	11/12/200 2
136.	Space Systems/Loral, LLC	Variable beamwidth and zoom contour beam antenna systems	0975314 8	01/02/200 1	6414646	07/02/200 2
137.	Space Systems/Loral, LLC	Triple reflector antenna deployment and storage systems	0981229 8	03/20/200 1	6448940	09/10/200 2
138.	Space Systems/Loral, LLC	Flexible waveguide with rounded corrugations	0981848 9	03/27/200 1	6559742	05/06/200 3
139.	Space Systems/Loral, LLC	Heat transfer of a remote heat source using a loop heat pipe	0982207 3	03/30/200 1	7363960	04/29/200 8

140.	Space Systems/Loral, LLC	Dynamic resource allocation architecture for differentiated services over broadband communication networks	0982269 1	03/30/200 1	7219132	05/15/200 7
141.	Space Systems/Loral, LLC	Waveguide slot array capable of radiating shaped beams	0983579 5	04/16/200 1	6476772	11/05/200 2
142.	Space Systems/Loral, LLC	Spacecraft radiator system and method using cross-coupled deployable thermal radiators	0984137 3	04/24/200 1	6854510	02/15/200 5
143.	Space Systems/Loral, LLC	Thermal harness using encased carbon-based fiber and end attachment brackets	0984389 8	04/27/200 1	6367509	04/09/200 2
144.	Space Systems/Loral, LLC	Multiple passband filter	0985069 5	05/08/200 1	6583692	06/24/200 3
145.	Space Systems/Loral, LLC	Satellite communication system with gateway switch networks	0987107 5	05/31/200 1	6898428	05/24/200 5
146.	Space Systems/Loral, LLC	Voltage tunable patch filter element with dielectrically loaded slot	0988038 1	06/13/200 1	6563404	05/13/200 3
147.	Space Systems/Loral, LLC	Method and system for synchronized forward and Aft thrust vector control	0988362 2	06/19/200 1	6695251	02/24/200 4
148.	Space Systems/Loral, LLC	Method and apparatus for soft switched AC power distribution	0988473 4	06/19/200 1	6583994	06/24/200 3
149.	Space Systems/Loral, LLC	Methods for testing multibeam satellite systems using input power telemetry and output noise power	0991216 7	07/23/200 1	8160575	04/17/201 2
150.	Space Systems/Loral, LLC	Dual function subreflector for communication satellite antenna	0992859 7	08/13/200 1	6441794	08/27/200 2
151.	Space Systems/Loral, LLC	Spacecraft constellation formation keeping using inter-spacecraft distance measurement	0993120 5	08/16/200 1	6553286	04/22/200 3

152.	Space Systems/Loral, LLC	Electric orbit raising with variable thrust	0994718 6	09/04/200 1	6543723	04/08/200 3
153.	Space Systems/Loral, LLC	Dielectric resonator equalizer	0995773 4	09/21/200 1	6476686	11/05/200 2
154.	Space Systems/Loral, LLC	Energy managed electric propulsion methods and systems for stationkeeping satellites	0997783 4	10/15/200 1	6581880	06/24/200 3
155.	Space Systems/Loral, LLC	Spacecraft having a momentum wheel configuration that prevents zero wheel speeds	0999501 7	11/27/200 1	6691955	02/17/200 4
156.	Space Systems/Loral, LLC	Multi-band corrugated antenna feed horn with a hexagonal aperture and antenna array using same	1000280 8	11/15/200 1	6501434	12/31/200 2
157.	Space Systems/Loral, LLC	Two-sided deployable thermal radiator system and method	1000725 6	11/11/200 1	7028953	04/18/200 6
158.	Space Systems/Loral, LLC	Passive intermodulation free multilayer thermal blanket	1002070 4	10/29/200 1	6623826	09/23/200 3
159.	Space Systems/Loral, LLC	Hybrid horn for dual Ka-band communications	1003634 7	10/19/200 1	6522306	02/18/200 3
160.	Space Systems/Loral, LLC	Satellite harmonic torque estimator	1008727 9	03/01/200 2	6672544	01/06/200 4
161.	Space Systems/Loral, LLC	CDMA code address data routing system and method	1009489 8	03/11/200 2	6725277	04/20/200 4
162.	Space Systems/Loral, LLC	Single-receiver multiple-antenna RF autotrack control	1009767 8	03/13/200 2	6570535	05/27/200 3
163.	Space Systems/Loral, LLC	Antenna distortion estimation and compensation	1024494 4	09/17/200 2	6720918	04/13/200 4
164.	Space Systems/Loral, LLC	Ground-based beamforming for satellite communications systems	1146749 0	08/25/200 6	7787819	08/31/201 0

165.	Space Systems/Loral, LLC	Spacecraft three-axis attitude acquisition from sun direction measurement	11709614	02/22/2007	7874519	01/25/2011
166.	Space Systems/Loral, LLC	Multi-beam satellite network to maximize bandwidth utilization	11891086	08/08/2007	7792070	09/07/2010
167.	Space Systems/Loral, LLC	Radial release device	12082818	04/14/2008	8568053	10/29/2013
168.	Space Systems/Loral, LLC	Redundant radial release apparatus	12215041	06/23/2008	8021069	09/20/2011
169.	Space Systems/Loral, LLC	Satellite system with enhanced payload capacity	12344064	12/24/2008	8135338	03/13/2012
170.	Space Systems/Loral, LLC	Spacecraft payload orientation steering	12629707	12/02/2009	9045239	06/02/2015
171.	Space Systems/Loral, LLC	Antenna tracking profile estimation	12779872	05/13/2010	8179313	05/15/2012
172.	Space Systems/Loral, LLC	Image navigation method using parametric systematic error correction	12800450	05/14/2010	8301377	10/30/2012
173.	Space Systems/Loral, LLC	Ground-based beamforming for satellite communications systems	12856468	08/13/2010	8270899	09/18/2012
174.	Space Systems/Loral, LLC	Satellite orbit raising using electric propulsion	12925386	10/20/2010	9108748	08/18/2015
175.	Space Systems/Loral, LLC	Electrically large stepped-wall and smooth-wall horns for spot beam applications	12928135	12/03/2010	9136606	09/15/2015
176.	Space Systems/Loral, LLC	Satellite Having Multiple Aspect Ratios	13026175	02/11/2011	8448902	05/28/2013
177.	Space Systems/Loral, LLC	Spacecraft payload positioning with respect to a virtual pivot point	13044278	03/09/2011	8800935	08/12/2014
178.	Space Systems/Loral, LLC	Source driver current fold-back protection	13053084	03/21/2011	8482894	07/09/2013
179.	Space Systems/Loral, LLC	Redundant fuse wire release device	13068655	05/17/2011	9085377	07/21/2015

180.	Space Systems/Loral, LLC	Broadband Satellite with Dual Frequency Conversion and Bandwidth Aggregation	1309366 9	04/25/201 1	8660482	02/25/201 4
181.	Space Systems/Loral, LLC	High capacity broadband satellite	1310194 4	05/05/201 1	8789796	07/29/201 4
182.	Space Systems/Loral, LLC	Spacecraft momentum management using solar array	1311537 0	05/25/201 1	8868263	10/21/201 4
183.	Space Systems/Loral, LLC	Band clamp with redundant load path	1316441 4	06/20/201 1	8732916	05/27/201 4
184.	Space Systems/Loral, LLC	RF feed element design optimization using secondary pattern	1317081 3	06/28/201 1	8914258	12/16/201 4
185.	Space Systems/Loral, LLC	Current collector bar and grid pattern for a photovoltaic solar cell	1318935 4	07/22/201 1	9000288	04/07/201 5
186.	Space Systems/Loral, LLC	Preload releasing fastener and release system using same	1321522 9	08/23/201 1	9180982	11/10/201 5
187.	Space Systems/Loral, LLC	Extendable antenna reflector deployment techniques	1321592 9	08/23/201 1	9004409	04/14/201 5
188.	Space Systems/Loral, LLC	Reflector deployment techniques for satellites	1321593 2	08/23/201 1	9248922	02/02/201 6
189.	Space Systems/Loral, LLC	Unified chemical electric propulsion system	1322304 1	08/31/201 1	9145216	09/29/201 5
190.	Space Systems/Loral, LLC	Hold-down mechanism for a spacecraft appendage	1323776 1	09/20/201 1	8915473	12/23/201 4
191.	Space Systems/Loral, LLC	Antenna system with multiple independently steerable shaped beams	1324007 9	09/22/201 1	9774095	09/26/201 7
192.	Space Systems/Loral, LLC	Dual mode dielectric resonator operating in a HE mode with a Q factor no less than 5000	1324724 3	09/28/201 1	8952769	02/10/201 5
193.	Space Systems/Loral, LLC	Spacecraft momentum management	1332665 4	12/15/201 1	9108749	08/18/201 5

194.	Space Systems/Loral, LLC	Microstrip manifold coupled multiplexer	13340095	12/29/2011	9030271	05/12/2015
195.	Space Systems/Loral, LLC	Methods for testing multibeam satellite systems using input power telemetry and output noise power	13385619	02/27/2012	8447296	05/21/2013
196.	Space Systems/Loral, LLC	Electrostatic discharge control for a multi-cavity microwave filter	13442252	04/09/2012	8907742	12/09/2014
197.	Space Systems/Loral, LLC	Wide beam antenna	13474084	05/17/2012	8872714	10/28/2014
198.	Space Systems/Loral, LLC	Solar panel sequencing mechanism	13624410	09/21/2012	8915474	12/23/2014
199.	Space Systems/Loral, LLC	Frequency and Bandwidth Tunable Microwave Filter	13644632	10/04/2012	9019039	04/28/2015
200.	Space Systems/Loral, LLC	Spacecraft Transfer Orbit Techniques	13647207	10/08/2012	8763957	07/01/2014
201.	Space Systems/Loral, LLC	Roll-up contamination cover	13665717	10/31/2012	8973641	03/10/2015
202.	Space Systems/Loral, LLC	Shape memory alloy pre-loaded deployment hinge	13665722	10/31/2012	8876062	11/04/2014
203.	Space Systems/Loral, LLC	Spacecraft momentum unload and station-keeping techniques	13683887	11/21/2012	8998146	04/07/2015
204.	Space Systems/Loral, LLC	Waveguide T-switch	13728745	12/27/2012	9368851	06/14/2016
205.	Space Systems/Loral, LLC	Flexible array support structure	13729848	12/28/2012	8894017	11/25/2014
206.	Space Systems/Loral, LLC	Satellite system resource allocation optimization	13793922	03/11/2013	8996051	03/31/2015
207.	Space Systems/Loral, LLC	Mode filter	13800365	03/13/2013	9531048	12/27/2016
208.	Space Systems/Loral, LLC	Compact microstrip hybrid coupled input multiplexer	13870761	04/25/2013	8761026	06/24/2014

209.	Space Systems/Loral, LLC	Antenna Array with Reduced Mutual Coupling Between Array Elements	13896181	05/16/2013	9537209	01/03/2017
210.	Space Systems/Loral, LLC	Radial release device	14012915	08/28/2013	9708082	07/18/2017
211.	Space Systems/Loral, LLC	Caging mechanism for a single- or multi-axis positioning mechanism	14089067	11/25/2013	9677602	06/13/2017
212.	Space Systems/Loral, LLC	Integral corner bypass diode interconnecting configuration for multiple solar cells	14092775	11/27/2013	9627565	04/18/2017
213.	Space Systems/Loral, LLC	Axially grooved crossing heat pipes	14097020	12/04/2013	9352856	05/31/2016
214.	Space Systems/Loral, LLC	Side-by-side multiple launch configuration	14108213	12/16/2013	9242743	01/26/2016
215.	Space Systems/Loral, LLC	Reflective and permeable metalized laminate	14161343	01/22/2014	9685710	06/20/2017
216.	Space Systems/Loral, LLC	Heat pipe and radiator system with thermoelectric cooler	14183263	02/18/2014	9714777	07/25/2017
217.	Space Systems/Loral, LLC	Depressurization test method using pressure vessel	14222136	03/21/2014	9606044	03/28/2017
218.	Space Systems/Loral, LLC	Highly inclined elliptical orbit launch and orbit acquisition techniques	14300027	06/09/2014	9365299	06/14/2016
219.	Space Systems/Loral, LLC	Highly inclined elliptical orbit de-orbit techniques	14300032	06/09/2014	9550585	01/24/2017
220.	Space Systems/Loral, LLC	Nondestructive proof loading of honeycomb panels	14448744	07/31/2014	9523633	12/20/2016
221.	Space Systems/Loral, LLC	Thruster support mechanism for satellite propulsion	14580063	12/22/2014	9663251	05/30/2017
222.	Space Systems/Loral, LLC	Hinge with spring pre-load transfer mechanism	14596096	01/13/2015	9546510	01/17/2017
223.	Space Systems/Loral, LLC	Incremental deployment device	14596101	01/13/2015	10337594	07/02/2019

224.	Space Systems/Loral, LLC	Spacecraft with aerodynamic control	14627936	02/20/2015	9889950	02/13/2018
225.	Space Systems/Loral, LLC	Dynamic link adaption and/or dynamic allocation of communication resources of a communication system based on external interference information received from external interference information sources	14632482	02/26/2015	9628168	04/18/2017
226.	Space Systems/Loral, LLC	Navigational route selection to mitigate probability mobile terminal loses communication capability	14632492	02/26/2015	9476715	10/25/2016
227.	Space Systems/Loral, LLC	On-orbit assembly of communication satellites	14642486	03/09/2015	9878806	01/30/2018
228.	Space Systems/Loral, LLC	Communication system with multi band gateway	14659222	03/16/2015	9967792	05/08/2018
229.	Space Systems/Loral, LLC	Redundant telemetry transmission path	14670141	03/26/2015	10236970	03/19/2019
230.	Space Systems/Loral, LLC	Dielectric resonator filter and multiplexer having a common wall with a centrally located coupling iris and a larger peripheral aperture adjustable by a tuning screw	14681920	04/08/2015	9705171	07/11/2017
231.	Space Systems/Loral, LLC	Broadband satellite payload architecture	14685302	04/13/2015	10270524	04/23/2019
232.	Space Systems/Loral, LLC	Solid state traveling wave amplifier for space applications	14729883	06/03/2015	9641144	05/02/2017
233.	Space Systems/Loral, LLC	All front contact solar cell	14734996	06/09/2015	10096726	10/09/2018
234.	Space Systems/Loral, LLC	Reverse wireless broadband system	14820408	08/06/2015	9979466	05/22/2018
235.	Space Systems/Loral, LLC	High-frequency cavity resonator filter with	14864669	09/24/2015	10056668	08/21/2018

		diametrically-opposed heat transfer legs				
236.	Space Systems/Loral, LLC	Brazing of High Temperature Wire to Electrical Contact	1486807 6	09/28/201 5		
237.	Space Systems/Loral, LLC	Satellite with transition beam size	1487549 1	10/05/201 5	9705586	07/11/201 7
238.	Space Systems/Loral, LLC	Self-Balancing Solar Array	1491833 7	10/20/201 5		
239.	Space Systems/Loral, LLC	Flexible propulsion system	1493720 8	11/10/201 5	10336475	07/02/201 9
240.	Space Systems/Loral, LLC	Channelizer supplemented spacecraft telemetry and command functionality	1493943 3	11/12/201 5	9621255	04/11/201 7
241.	Space Systems/Loral, LLC	High capacity spacecraft	1493944 5	11/12/201 5	10183764	01/22/201 9
242.	Space Systems/Loral, LLC	Flexible radiation shield	1495458 3	11/30/201 5	9640288	05/02/201 7
243.	Space Systems/Loral, LLC	Spacecraft with rigid antenna reflector deployed via linear extension boom	1496294 1	12/08/201 5	10259599	04/16/201 9
244.	Space Systems/Loral, LLC	Digital payload with variable high power amplifiers	1496562 0	12/10/201 5	10312995	06/04/201 9
245.	Space Systems/Loral, LLC	Dual-polarized, dual-band, compact beam forming network	1496872 5	12/14/201 5	10033099	07/24/201 8
246.	Space Systems/Loral, LLC	Ribbon Cable withh Integrated Diode	1496983 9	12/15/201 5		
247.	Space Systems/Loral, LLC	Pre and Post Orbit Maneuver Pulses to Reduce Flexural Oscillations	1497273 6	12/17/201 5		
248.	Space Systems/Loral, LLC	Battery charge management for geosynchronous spacecraft	1497318 6	12/17/201 5	10239477	03/26/201 9

249.	Space Systems/Loral, LLC	Non-blockings switch matrix	14989612	01/06/2016	10109441	10/23/2018
250.	Space Systems/Loral, LLC	Waveguide hinge	14995070	01/13/2016	10103417	10/16/2018
251.	Space Systems/Loral, LLC	Truss structure optimization techniques	15053993	02/25/2016	10112731	10/30/2018
252.	Space Systems/Loral, LLC	Truss structure	15053998	02/25/2016	10227145	03/12/2019
253.	Space Systems/Loral, LLC	Satellite transmit antenna ground-based pointing	15092413	04/06/2016	9608716	03/28/2017
254.	Space Systems/Loral, LLC	Flexible Bandwidth Assignment To Spot Beams	15144487	05/02/2016	10136438	11/20/2018
255.	Space Systems/Loral, LLC	Stowage, deployment and positioning of rigid antenna reflectors on a spacecraft	15160258	05/20/2016	10053240	08/21/2018
256.	Space Systems/Loral, LLC	Protected Overlay Of Assigned Frequency Channels	15163465	05/24/2016	10305646	05/28/2019
257.	Space Systems/Loral, LLC	Highly inclined elliptical orbit launch and orbit acquisition techniques	15166033	05/26/2016	9533774	01/03/2017
258.	Space Systems/Loral, LLC	Satellite system using time domain beam hopping	15172825	06/03/2016	10111109	10/23/2018
259.	Space Systems/Loral, LLC	Synchronization for satellite system	15172859	06/03/2016	10411362	09/10/2019
260.	Space Systems/Loral, LLC	Satellite system with different frequency plan at the equator	15172882	06/03/2016	10128577	11/13/2018
261.	Space Systems/Loral, LLC	Satellite systems with single polarization path	15172965	06/03/2016		
262.	Space Systems/Loral, LLC	Satellite system with steerable gateway beams	15172978	06/03/2016	10418724	09/17/2019
263.	Space Systems/Loral, LLC	Satellite system having terminals in hopping beams communicating with more than one gateway	15173038	06/03/2016	10347987	07/09/2019

264.	Space Systems/Loral, LLC	Satellite system with beam hopping plan that takes into account the needs of gateways and subscriber terminals	15173054	06/03/2016	10135154	11/20/2018
265.	Space Systems/Loral, LLC	Satellite system beam to beam handover	15173083	06/03/2016	10128578	11/13/2018
266.	Space Systems/Loral, LLC	Satellite system with handover for multiple gateways	15173097	06/03/2016	10381748	08/13/2019
267.	Space Systems/Loral, LLC	Orthomode transducer	15180444	06/13/2016	9947978	04/17/2018
268.	Space Systems/Loral, LLC	Waveguide to microstrip line N-port power splitter/combiner	15201208	07/01/2016	10177726	01/08/2019
269.	Space Systems/Loral, LLC	Satellite system with rolling wave handovers	15218009	07/23/2016	10225002	03/05/2019
270.	Space Systems/Loral, LLC	Satellite diversity	15221273	07/27/2016	10397920	08/27/2019
271.	Space Systems/Loral, LLC	Digital beamforming architecture	15225525	08/01/2016	9917623	03/13/2018
272.	Space Systems/Loral, LLC	Multi-channel satellite calibration	15225588	08/01/2016	9642107	05/02/2017
273.	Space Systems/Loral, LLC	Cloud mask data acquisition and distribution using geosynchronous communications or broadcast satellites	15247052	08/25/2016	10230454	03/12/2019
274.	Space Systems/Loral, LLC	Highly inclined elliptical orbit de-orbit techniques	15261696	09/09/2016	10202207	02/12/2019
275.	Space Systems/Loral, LLC	Articulation techniques for a spacecraft solar array	15263209	09/12/2016	10435182	10/08/2019
276.	Space Systems/Loral, LLC	Access switch network with redundancy	15267828	09/16/2016	10284283	05/07/2019
277.	Space Systems/Loral, LLC	Low cost launch vehicle fairing	15277505	09/27/2016	10214303	02/26/2019
278.	Space Systems/Loral, LLC	Spacecraft exoskeleton truss structure	15336541	10/27/2016	10407189	09/10/2019

279.	Space Systems/Loral, LLC	Smallsat Payload Configuration	15351233	11/14/2016		
280.	Space Systems/Loral, LLC	Efficient stationkeeping strategy for the three apogee (TAP) orbit	15352471	11/15/2016	10364051	07/30/2019
281.	Space Systems/Loral, LLC	Multiport amplifiers (MPAs) using output filtering to improve performance over life	15364115	11/29/2016	10320064	06/11/2019
282.	Space Systems/Loral, LLC	Flexible Radio Frequency Converters for Digital Payloads	15372276	12/07/2016		
283.	Space Systems/Loral, LLC	Enhanced Radiator	15374528	12/09/2016		
284.	Space Systems/Loral, LLC	Satellite constellation switching	15388269	12/22/2016	9882632	01/30/2018
285.	Space Systems/Loral, LLC	High throughput satellite system with optical feeder uplink beams and RF service downlink beams	15394512	12/29/2016	10075242	09/11/2018
286.	Space Systems/Loral, LLC	High throughput satellite system with RF service uplink beams and optical feeder downlink beams	15394602	12/29/2016	9917646	03/13/2018
287.	Space Systems/Loral, LLC	Imaging array fed reflector	15438620	02/21/2017	10305195	05/28/2019
288.	Space Systems/Loral, LLC	Inclined geosynchronous orbit spacecraft constellations	15441032	02/23/2017		
289.	Space Systems/Loral, LLC	Stationkeeping techniques for spacecraft in inclined geo-synchronous orbit	15441037	02/23/2017		
290.	Space Systems/Loral, LLC	Efficient orbital storage and deployment for spacecraft in inclined geosynchronous orbit	15441040	02/23/2017	10329034	06/25/2019
291.	Space Systems/Loral, LLC	Channelizer supplemented spacecraft telemetry and command functionality	15445797	02/28/2017	10033455	07/24/2018

292.	Space Systems/Loral, LLC	Satellite System That Produces Optical Inter-Satellite Link (ISL) Beam Based On Optical Feeder Uplink Beam	1546136 9	03/16/201 7	9979465	05/22/201 8
293.	Space Systems/Loral, LLC	Satellite System That Produces Optical Inter-Satellite Link (ISL) Beam Based On Optical ISL Received From Another Satellite	1546137 2	03/16/201 7	10050699	08/14/201 8
294.	Space Systems/Loral, LLC	Satellite System That Produces Optical Inter-Satellite Link (ISL) Beam Based On RF Feeder Uplink Beam	1546137 7	03/16/201 7	9923625	03/20/201 8
295.	Space Systems/Loral, LLC	Ground Based Subsystems, For Inclusion In Optical Gateway, And That Interface With Optical Networks External To Optical Gateway	1546138 1	03/16/201 7	10122456	11/06/201 8
296.	Space Systems/Loral, LLC	Spacecraft Design with Multiple Thermal Zones	1546661 0	03/21/201 7		
297.	Space Systems/Loral, LLC	Asymmetric thruster gimbal configuration	1546761 2	03/23/201 7	10464694	11/05/201 9
298.	Space Systems/Loral, LLC	Electric Thruster Waste Heat Recovery During Satellite Orbit Transfer	1547059 2	03/27/201 7		
299.	Space Systems/Loral, LLC	Multi-channel satellite antenna calibration	1547060 0	03/27/201 7	10044436	08/07/201 8
300.	Space Systems/Loral, LLC	Exoskeletal Launch Support Structure	1548027 6	04/05/201 7		
301.	Space Systems/Loral, LLC	Rotatable Stacked Spacecraft	1548816 6	04/14/201 7	10479534	11/19/201 9
302.	Space Systems/Loral, LLC	Deployable propulsion module for spacecraft	1548817 9	04/14/201 7	10435183	10/08/201 9
303.	Space Systems/Loral, LLC	Articulating Sunshield	1558607 6	05/03/201 7		

304.	Space Systems/Loral, LLC	Satellite system using optical gateways and onboard processing	15599852	05/19/2017	10069565	09/04/2018
305.	Space Systems/Loral, LLC	Ecliptic Sun Acquisition Control Mode For Satellites	15603288	05/23/2017		
306.	Space Systems/Loral, LLC	Communication platform with flexible photonics payload	15604165	05/24/2017	10219051	02/26/2019
307.	Space Systems/Loral, LLC	Cross-Feeding Propellant Between Stacked Spacecraft	15616803	06/07/2017		
308.	Space Systems/Loral, LLC	Satellite network switching	15618897	06/09/2017	10200922	02/05/2019
309.	Space Systems/Loral, LLC	Lattice structure design and manufacturing techniques	15622888	06/14/2017	10326209	06/18/2019
310.	Space Systems/Loral, LLC	Flexible high throughput satellite system using optical gateways	15633007	06/26/2017	10320481	06/11/2019
311.	Space Systems/Loral, LLC	Spacecraft Radiator System and Method	15637466	06/29/2017		
312.	Space Systems/Loral, LLC	Space Based Robotic Assembly of a Modulator Relector	15654593	07/19/2017		
313.	Space Systems/Loral, LLC	Multi-Reflector Hold-Down	15669470	08/04/2017		
314.	Space Systems/Loral, LLC	Satellite system using optical gateways and ground based beamforming	15682785	08/22/2017	10142021	11/27/2018
315.	Space Systems/Loral, LLC	Self-assmebling persistent space platform	15689993	08/29/2017		
316.	Space Systems/Loral, LLC	Amplifier integrated feed array with modularized feed ele-ments and amplifiers	15699909	09/08/2017		
317.	Space Systems/Loral, LLC	High pointing accuracy spacecraft	15709341	09/19/2017	10367575	07/30/2019

318.	Space Systems/Loral, LLC	Adaptive communication system	15710740	09/20/2017		
319.	Space Systems/Loral, LLC	Adaptive Satellite Channelizer	15725194	10/04/2017	10341012	07/02/2019
320.	Space Systems/Loral, LLC	Satellite with Regenerative Processor	15799258	10/31/2017		
321.	Space Systems/Loral, LLC	Additive manufactured RF module	15818542	11/20/2017		
322.	Space Systems/Loral, LLC	Pointing system improvement with imaging array feeds	15831257	12/04/2017	10461409	10/29/2019
323.	Space Systems/Loral, LLC	Modularized feed array arrangement	15831258	12/04/2017	10263325	04/16/2019
324.	Space Systems/Loral, LLC	Calibration of satellite beamforming channels	15833351	12/06/2017	10361762	07/23/2019
325.	Space Systems/Loral, LLC	On-orbit assembly of communication satellites	15847780	12/19/2017		
326.	Space Systems/Loral, LLC	Spacecraft with aerodynamic control	15849289	12/20/2017		
327.	Space Systems/Loral, LLC	High capacity communication satellite	15887721	02/02/2018		
328.	Space Systems/Loral, LLC	Low earth orbiting spacecraft with a dual-use directional antenna	15900653	02/20/2018		
329.	Space Systems/Loral, LLC	Flexible signal distribution assisted by tunable optical carrier modulating a desired signal	15904063	02/23/2018	10250330	04/02/2019
330.	Space Systems/Loral, LLC	Multiport amplifier input network with compensation for output network gain and phase frequency response imbalance	15926186	03/20/2018	10320349	06/11/2019
331.	Space Systems/Loral, LLC	Satellite system calibration in active operational channels	15926628	03/20/2018	10284308	05/07/2019
332.	Space Systems/Loral, LLC	Satellite system using an RF GBBF feeder uplink beam from a gateway to a satellite, and using an	16111008	08/23/2018	10432308	10/01/2019

		optical ISL from the satellite to another satellite				
333.	Space Systems/Loral, LLC	Flexible bandwidth assignment to spot beams	16163105	10/17/2018		
334.	Space Systems/Loral, LLC	Ground based subsystems, for inclusion in optical gateway, and that interface with optical networks external to optical gateway	16168658	10/23/2018	10476595	11/12/2019
335.	Space Systems/Loral, LLC	Multiport amplifier input network with compensation for output network gain and phase frequency response imbalance	16405162	05/07/2019		
336.	Space Systems/Loral, LLC	Satellite Diversity	16505937	07/09/2019		
337.	MacDonald, Dettwiler and Associates	Adaptive Satellite Channelizer	US15725194A	2017/10/04		
338.	MacDonald, Dettwiler and Associates Corporation	High performance multimode horn	US20018 33713A	2001/04/13	US6396453B2	2002/05/28
339.	MacDonald, Dettwiler and Associates Corporation	Steerable antenna system with fixed feed source	US20019 67949A	2001/10/02	US6492955B1	2002/12/10
340.	MacDonald, Dettwiler and Associates Corporation	Steerable offset antenna with fixed feed source	US20022 65600A	2002/10/08	US6747604B2	2004/06/08
341.	MacDonald, Dettwiler and Associates Corporation	Method for improving isolation of an antenna mounted on a structure	US20037 47278A	2003/12/30	US7138959B2	2006/11/21
342.	MacDonald, Dettwiler and Associates Corporation	Helical antenna	US20048 68210A	2004/06/16	US7038636B2	2006/05/02
343.	MacDonald, Dettwiler and Associates Corporation	Aperture illumination control membrane	US20054 8824A	2005/02/03	US7183990B2	2007/02/27

344.	MacDonald, and Corporation	Dettwiler Associates	Electromagnetic bandgap device for antenna structures	US20052 40497A	2005/10/0 3	US723614 2B2	2007/06/2 6
345.	MacDonald, and Corporation	Dettwiler Associates	Parasitic element for helical antenna	US20078 19337A	2007/06/2 7	US747427 2B2	2009/01/0 6
346.	MacDonald, and Corporation	Dettwiler Associates	Orthomode junction assembly with associated filters for use in an antenna feed system	US13974 640A	2013/08/2 3	US905968 2B2	2015/06/1 6
347.	MacDonald, and Corporation	Dettwiler Associates	Wide scan steerable antenna with no key/hole	US13652 680A	2012/10/1 6	US909374 2B2	2015/07/2 8
348.	MacDonald, and Corporation	Dettwiler Associates	Antenna pointing system	US13723 844A	2012/12/2 1	US917212 8B2	2015/10/2 7
349.	MacDonald, and Corporation	Dettwiler Associates	Wide scan steerable antenna	US14849 919A	2015/09/1 0	US964733 4B2	2017/05/0 9
350.	MacDonald, and Corporation	Dettwiler Associates	Compact and lightweight TEM/line network for RF components of antenna systems	US15418 154A	2017/01/2 7	US100691 84B2	2018/09/0 4
351.	MacDonald, and Corporation	Dettwiler Associates	Architecture and method for optimal tracking of multiple broadband satellite terminals	US15442 653A	2017/02/2 5		
352.	MacDonald, and Corporation	Dettwiler Associates	Three axis reflector deployment and pointing mechanism	US15480 941A	2017/04/0 6		
353.	MacDonald, and Corporation	Dettwiler Associates	Antenna reflector interchange mechanism	US15623 764A	2017/06/1 5		
354.	MacDonald, and Corporation	Dettwiler Associates	Strut and joint for spaceframe structure assemblies	US15838 585A	2017/12/1 2		
355.	MacDonald, and Corporation	Dettwiler Associates	Calibration system and method for optimizing leakage performance of a multi/port amplifier	US15853 588A	2017/12/2 2		

356.	MacDonald, Dettwiler and Associates Corporation	RF rotary joint using a matched horn coupler assembly	US16116554A	2018/08/29		
357.	MacDonald, Dettwiler and Associates Corporation	Modular Channelizer	US15729257A	2017/10/10		
358.	MacDonald, Dettwiler and Associates Corporation	Lightweight Deployable Aperture Reflectarray Antenna Reflector	16/406,349	2019/05/08		
359.	MacDonald, Dettwiler and Associates Inc.	Gearbox	US2002153600A	2002/05/24	US6749533B2	2004/06/15
360.	MacDonald, Dettwiler and Associates Inc.	Surgical robot and robotic controller	US11603352A	2006/11/20	US7996110B2	2011/08/09
361.	MacDonald, Dettwiler and Associates Inc.	Surgical robot and robotic controller	US13205524A	2011/08/08	US8515576B2	2013/08/20
362.	MacDonald, Dettwiler and Associates Inc.	Spacecraft docking mechanism	US2004890513A	2004/07/14	US6969030B1	2005/11/29
363.	MacDonald, Dettwiler and Associates Inc.	3D imaging system	US2006352399A	2006/02/13	US7860301B2	2010/12/28
364.	MacDonald, Dettwiler and Associates Inc.	Method and apparatus for producing 3D model of an underground environment	US2009654451A	2009/12/18	US8031909B2	2011/10/04
365.	MacDonald, Dettwiler and Associates Inc.	Method and apparatus for producing an enhanced 3D model of an environment or an object	US2009654452A	2009/12/18	US8031933B2	2011/10/04
366.	MacDonald, Dettwiler and Associates Inc.	Method and apparatus for producing 3D model of an environment	US13210275A	2011/08/15	US8532368B2	2013/09/10
367.	MacDonald, Dettwiler and Associates Inc.	Traffic management system for a passageway environment	US2006493027A	2006/07/26	US7756615B2	2010/07/13
368.	MacDonald, Dettwiler and Associates Inc.	Guidance, navigation, and control system for a vehicle	US2007922706A	2008/03/19	US8090491B2	2012/01/03
369.	MacDonald, Dettwiler and Associates Inc.	Guidance, navigation, and control system for a vehicle	US13209247A	2011/08/12	US8260483B2	2012/09/04
370.	MacDonald, Dettwiler and Associates Inc.	Surgical manipulator	US2007812094A	2007/06/14	US8491603B2	2013/07/23

371.	MacDonald, Dettwiler and Associates Inc.	Surgical manipulator	US20083 18151A	2008/12/2 2	US844463 1B2	2013/05/2 1
372.	MacDonald, Dettwiler and Associates Inc.	Surgical manipulator	US13899 300A	2013/05/2 1	US933304 1B2	2016/05/1 0
373.	MacDonald, Dettwiler and Associates Inc.	Satellite refuelling system and method	US20087 3795A	2008/03/1 0	US807493 5B2	2011/12/1 3
374.	MacDonald, Dettwiler and Associates Inc.	Satellite refuelling system and method	US13196 750A	2011/08/0 2	US818191 1B1	2012/05/2 2
375.	MacDonald, Dettwiler and Associates Inc.	Robotic satellite refueling tool	US13323 472A	2011/12/1 2	US819687 0B2	2012/06/1 2
376.	MacDonald, Dettwiler and Associates Inc.	Robotic satellite refuelling tool	US13470 661A	2012/05/1 4	US844890 4B2	2013/05/2 8
377.	MacDonald, Dettwiler and Associates Inc.	Scalable common interface plate system (SCIPS)	US13028 051A	2011/02/1 5	US870234 1B2	2014/04/2 2
378.	MacDonald, Dettwiler and Associates Inc.	Scalable common interface plate system (SCIPS)	US14221 946A	2014/03/2 1	US933993 5B2	2016/05/1 7
379.	MacDonald, Dettwiler and Associates Inc.	Dual reflector system for linear lamp illuminators	US20109 07685A	2010/10/1 9	US911586 7B2	2015/08/2 5
380.	MacDonald, Dettwiler and Associates Inc.	Robotic servicing multifunctional tool	US13652 339A	2012/10/1 5	US967609 6B2	2017/06/1 3
381.	MacDonald, Dettwiler and Associates Inc.	Robotic servicing multifunctional tool	US15620 300A	2017/06/1 2	US100051 80B2	2018/06/2 6
382.	MacDonald, Dettwiler and Associates Inc.	Robotic servicing multifunctional tool	US15621 362A	2017/06/1 3	US995042 4B2	2018/04/2 4
383.	MacDonald, Dettwiler and Associates Inc.	Propellant transfer system and method for resupply of propellant to on/orbit spacecraft	US13678 281A	2012/11/1 5	US889952 7B2	2014/12/0 2
384.	MacDonald, Dettwiler and Associates Inc.	Propellant transfer system and method for resupply of propellant to on/orbit spacecraft	US14554 695A	2014/11/2 6	US926020 6B2	2016/02/1 6
385.	MacDonald, Dettwiler and Associates Inc.	Method of real/time tracking of moving/flexible surfaces	US13678 162A	2012/11/1 5	US869373 0B2	2014/04/0 8

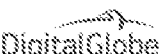|						
386.	MacDonald, Dettwiler and Associates Inc.	Method of real/time tracking of moving/flexible surfaces	US14221085A	2014/03/20	US9101267B2	2015/08/11
387.	MacDonald, Dettwiler and Associates Inc.	Tool for accessing satellite fill/drain valves during propellant resupply	US13706126A	2012/12/05	US9108747B2	2015/08/18
388.	MacDonald, Dettwiler and Associates Inc.	System and tool for accessing satellite fill/drain valves during propellant resupply	US14826429A	2015/08/14	US9567111B2	2017/02/14
389.	MacDonald, Dettwiler and Associates Inc.	System and tool for accessing satellite fill/drain valves during propellant resupply	US14826444A	2015/08/14	US9688422B2	2017/06/27
390.	MacDonald, Dettwiler and Associates Inc.	Spacecraft capture mechanism	US13839529A	2013/03/15	US9399295B2	2016/07/26
391.	MacDonald, Dettwiler and Associates Inc.	Spacecraft capture mechanism	US15219017A	2016/07/25	US9764478B2	2017/09/19
392.	MacDonald, Dettwiler and Associates Inc.	Wearable object locator and imaging system	US13589957A	2012/08/20	US9285481B2	2016/03/15
393.	MacDonald, Dettwiler and Associates Inc.	Spacecraft capture mechanism	US14703709A	2015/05/04	US9669950B2	2017/06/06
394.	MacDonald, Dettwiler and Associates Inc.	Payload ejection system	US14716795A	2015/05/19		
395.	MacDonald, Dettwiler and Associates Inc.	System and method for automated artificial vision guided dispensing viscous fluids for caulking and sealing operations	US15645929A	2017/07/10		
396.	MacDonald, Dettwiler and Associates Inc.	Actuated resettable shockless hold down and release mechanism (ARES HDRM)	US15849225A	2017/12/20		
397.	MacDonald, Dettwiler and Associates Inc.	Unobtrusive driving assistance method and system for a vehicle to avoid hazards	US15849427A	2017/12/20		
398.	MacDonald, Dettwiler and Associates Inc.	Low/Profile Manipulator Interface System (MIPS)	15/829,619	2017/12/01		

399.	MacDonald, Dettwiler and Associates Inc.	Refueling Tool and System Incorporating The Refueling Tool	62/782,007	2018/12/19		
400.	MacDonald, Dettwiler and Associates Inc.	Radial Latch Manipulator Interface System	62/869,943	2019/07/02		
401.	MacDonald, Dettwiler and Associates Ltd. [1]	Satellite communications system for providing global, high quality movement of very large data files	US2003530018A	2005/04/01	US7783734B2	2010/08/24
402.	MacDonald, Dettwiler and Associates Ltd.	Satellite communications system for providing global, high quality movement of very large data files	US2010850426A	2010/08/04	US8412851B2	2013/04/02
403.	MacDonald, Dettwiler and Associates Ltd.	Satellite communications system for providing global, high quality movement of very large data files	US13853027A	2013/03/28	US9369883B2	2016/06/14
404.	MacDonald, Dettwiler and Associates Ltd.	Lightweight space/fed active phased array antenna system	US200791 2585A	2008/05/07	US7889129B2	2011/02/15
405.	MacDonald, Dettwiler Space and Advanced Robotics Ltd.[2]	Hinged scoop end-effector	US199932 5640A	1999/06/04	US6341933B1	2002/01/29
406.	Neptec	Data collection unit	US29204 181	2004/04/26	USD508565S1	2005/08/16
407.	Neptec Design Group Ltd.	Wide angle bistatic scanning optical ranging sensor	US13880 938	2013/11/26	US9255790B2	2016/02/09
408.	Neptec Design Group Ltd.	Return pulse shape analysis for falling edge object discrimination of aerosol LIDAR	US13127 945	2011/08/16	US8781790B2	2014/07/15
409.	Neptec Design Group Ltd.	High speed 360 degree scanning LIDAR head	US14397 155	2015/03/16	US9791555B2	2017/10/17

[1] MacDonald, Dettwiler and Associates Ltd. changed its name to "Maxar Technologies Ltd." on October 5, 2017 and amalgamated with another company on January 1, 2019, and the name of such amalgamated company is "Maxar Technologies ULC".
[2] MacDonald, Dettwiler Space and Advanced Robotics Ltd. changed its name to "MacDonald, Dettwiler and Associates Inc." on April 25, 2005.

SCHEDULE B

TRADEMARK REGISTRATIONS AND TRADEMARK APPLICATIONS

	Owner	Trademark	Serial No.	Filing Date	Reg. No.	Reg. Date
1.	DigitalGlobe, Inc.	DIGITALGLOBE	75025772	11/30/1995	2136168	02/10/1998
2.	DigitalGlobe, Inc.	DIGITALGLOBE	75319557	07/03/1997	2264047	07/27/1999
3.	DigitalGlobe, Inc.	DIGITALGLOBE	75923645	02/22/2000	2484701	09/04/2001
4.	DigitalGlobe, Inc.	DIGITALGLOBE & Design DigitalGlobe	76265969	05/31/2001	2653714	11/26/2002
5.	DigitalGlobe, Inc.	DIGITALGLOBE & Design DigitalGlobe	85880376	03/19/2013	4653570	12/09/2014
6.	DigitalGlobe, Inc.	DIGITALGLOBE.COM	75923670	02/22/2000	2487069	09/11/2001
7.	DigitalGlobe, Inc.	FIRSTLOOK	85301973	04/22/2011	4180489	07/24/2012
8.	DigitalGlobe, Inc.	GEOHIVE	86817700	11/12/2015	5341290	11/21/2017
9.	DigitalGlobe, Inc.	IMAGECONNECT	77412508	03/04/2008	3614695	05/05/2009
10.	DigitalGlobe, Inc.	ORBIMAGE	74657171	03/17/1995	2039409	02/18/1997
11.	DigitalGlobe, Inc.	ORBVIEW	75150418	08/14/1996	2091116	08/26/1997
12.	DigitalGlobe, Inc.	PHOTOMAPPER	76235675	03/30/2001	2593257	07/09/2002
13.	DigitalGlobe, Inc.	RoadTracker	78441732	06/25/2004	3482049	08/05/2008
14.	DigitalGlobe, Inc.	SECONDS ON ORBIT	75798943	09/13/1999	2470721	07/17/2001

	Owner	Trademark	Serial No.	Filing Date	Reg. No.	Reg. Date
15.	DigitalGlobe, Inc.	SECUREWATCH	87181557	09/23/2016	5465351	05/08/2018
16.	DigitalGlobe, Inc.	SEE A BETTER WORLD	87075825	06/17/2016	5192964	04/25/2017
17.	DigitalGlobe, Inc.	SEEING A BETTER WORLD	85880340	03/19/2013	4653569	12/09/2014
18.	DigitalGlobe, Inc.	SOO	75845602	11/10/1999	2385734	09/12/2000
19.	DigitalGlobe, Inc.	SPACENET	87232837	11/10/2016	5586842	10/16/2018
20.	DigitalGlobe, Inc.	WORLDVIEW	86440216	10/30/2014	4816466	09/22/2015
21.	DigitalGlobe, Inc.	WORLDVIEW	86440266	10/30/2014	4816469	09/22/2015
22.	DigitalGlobe, Inc.	WORLDVIEW	86440302	10/30/2014	4816472	09/22/2015
23.	DigitalGlobe, Inc.	WORLDVIEW GLOBAL ALLIANCE	85982241	04/01/2010	4585810	08/12/2014
24.	Radiant Geospatial Solutions LLC	CROPCAST	85429345	09/22/2011	4146215	05/22/2012
25.	Radiant Geospatial Solutions LLC	EARTHSAT	78066878	06/01/2001	2615486	09/03/2002
26.	Radiant Geospatial Solutions LLC	NATURALVUE	86821336	11/16/2015	5006792	07/26/2016
27.	Radiant Geospatial Solutions LLC	OPTIVISTA	86976237	03/11/2014	4766062	06/30/2015
28.	Radiant Geospatial Solutions LLC	PCM	86485256	12/18/2014	4917047	03/15/2016
29.	Space Systems/Loral, LLC	SSL & Design ꙅ꙰SSL	85846452	02/11/2013	4973452	06/07/2016
30.	Space Systems/Loral, LLC	SSL & Design ꙅ꙰SSL	85846458	02/11/2013	5027390	08/23/2016

	Owner	Trademark	Serial No.	Filing Date	Reg. No.	Reg. Date
31.	Space Systems/Loral, LLC	SSL & Design 	85846470	02/11/2013	4973453	06/07/2016
32.	MDA Geospatial Services Inc.	EARTHVIEW	75/012,791	10/31/1995	2177128	7/28/1998
33.	Neptec Design Group Limited	TRIDAR	87/863,499	4/4/2018		

SCHEDULE C

EXISTING IP SECURITY AGREEMENTS

1. U.S. Patent and Trademark Security Agreement dated as of October 5, 2017 among DigitalGlobe Inc., Maxar Technologies ULC (by its predecessor, MacDonald, Dettwiler and Associates Ltd.), MacDonald Dettwiler and Associates Corporation, MacDonald Dettwiler and Associates Inc., MDA Geospatial Services Inc., Space Systems/Loral, LLC and Radiant Geospatial Solutions LLC, as grantors in favor of Royal Bank of Canada, as Collateral Agent.

2. U.S. Patent and Trademark Security Agreement dated as of October 18, 2019 between Neptec Design Group Ltd., as grantor in favor of Royal Bank of Canada, as Collateral Agent.