

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4714868

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	RELEASE OF SECURITY INTEREST RECORDED AT REEL/Frames 28734/0805 AND 28925/0097
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ROYAL BANK OF CANADA	12/01/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	PARADIGM SERVICES CORP.
<b>Street Address:</b>	820 GESSNER ROAD
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<b>Postal Code:</b>	77924
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<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77924
<b>Name:</b>	PARADIGM LTD.
<b>Street Address:</b>	820 GESSNER ROAD
<b>City:</b>	HOUSTON
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77924
<b>Name:</b>	PINNACLE (US) ACQUISITION CO LIMITED
<b>Street Address:</b>	57/63 LINE WALL ROAD
<b>City:</b>	GIBRALTAR
<b>State/Country:</b>	GIBRALTAR
<b>Postal Code:</b>	107928
<b>Name:</b>	PARADIGM GEOPHYSICAL LIMITED
<b>Street Address:</b>	GAV YAM CENTER
<b>Internal Address:</b>	NO 3 SHENKAR STREET
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<b>State/Country:</b>	ISRAEL
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<b>Name:</b>	PARADIGM GEOSERVICES CANADA LTD.

PATENT

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<b>State/Country:</b>	CANADA
<b>Postal Code:</b>	T2POR8
<b>Name:</b>	PARADIGM LUXEMBOURG HOLDINGS S.A.R.L.
<b>Street Address:</b>	65 BOULEVARD GRANDE DUCHESSE CHARLOTTE
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<b>State/Country:</b>	LUXEMBOURG
<b>Postal Code:</b>	L-1331
<b>Name:</b>	PARADIGM GEOPHYSICAL (LUXEMBOURG) S.A.R.L.
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<b>City:</b>	LUXEMBOURG
<b>State/Country:</b>	LUXEMBOURG
<b>Postal Code:</b>	L-1331
<b>Name:</b>	PARADIGM WORLDWIDE LTD.
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<b>City:</b>	GEORGETOWN
<b>State/Country:</b>	CAYMAN ISLANDS
<b>Postal Code:</b>	KY1-9001
<b>Name:</b>	PARADIGM SCIENCES LTD.
<b>Street Address:</b>	WALKER HOUSE 87 MARY STREET
<b>City:</b>	GEORGETOWN
<b>State/Country:</b>	CAYMAN ISLANDS
<b>Postal Code:</b>	KY1-9001
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<b>Street Address:</b>	41, BOULEVARD DU PRINCE HENRI
<b>City:</b>	LUXEMBOURG
<b>State/Country:</b>	LUXEMBOURG
<b>Postal Code:</b>	L-1724
<b>Name:</b>	PINNACLE HOLDCO S.A.R.L.
<b>Street Address:</b>	41, BOULEVARD DU PRINCE HENRI
<b>City:</b>	LUXEMBOURG
<b>State/Country:</b>	LUXEMBOURG
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<b>City:</b>	GIBRALTAR
<b>State/Country:</b>	GIBRALTAR
<b>Postal Code:</b>	107928

**PATENT**

**REEL: 044616 FRAME: 0810**

**PROPERTY NUMBERS Total: 19**

Property Type	Number
Patent Number:	5629904
Patent Number:	6430508
Patent Number:	6819628
Patent Number:	6820043
Patent Number:	6859734
Patent Number:	6873913
Patent Number:	7095677
Patent Number:	7584056
Patent Number:	7844402
Patent Number:	8095319
Patent Number:	8120991
Patent Number:	8150663
Application Number:	12042417
Application Number:	12090584
Application Number:	12663326
Application Number:	12791352
Application Number:	12791370
Application Number:	12791483
Application Number:	61605866

**CORRESPONDENCE DATA**

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<b>ATTORNEY DOCKET NUMBER:</b>	40087-77-RFS
<b>NAME OF SUBMITTER:</b>	ROB SONESON
<b>SIGNATURE:</b>	/rsoneson/
<b>DATE SIGNED:</b>	12/01/2017

**Total Attachments: 7**

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**PATENT**

**REEL: 044616 FRAME: 0812**

**RELEASE OF SECURITY INTEREST IN PATENTS  
(SECOND LIEN)**

This RELEASE OF SECURITY INTEREST IN PATENTS (SECOND LIEN) (this “Release”), dated as of December 1, 2017 (the “Effective Date”), is made by Royal Bank of Canada, in its capacity as Collateral Agent (the “Agent”), in favor of the grantor parties identified on the signature page hereto (the “Grantor”).

WHEREAS, pursuant to that certain Second Lien Security Agreement, dated as of July 30, 2012, by and among the Agent, the Grantor and certain other parties thereto (as amended, amended and restated, or otherwise modified from time to time, the “Security Agreement”), the Grantor thereby assigned (save with respect to Intellectual Property owned by a Grantor incorporated under the laws of Luxemburg) and pledged and charged to the Agent, its successors and assigns, for the benefit of the Secured Parties, and thereby granted to the Agent, its successors and assigns, for the benefit of the Secured Parties, a security interest in all right, title or interest in or and to certain collateral;

WHEREAS, the Grantor executed and delivered the Security Agreement for recordal with the United States Patent and Trademark Office;

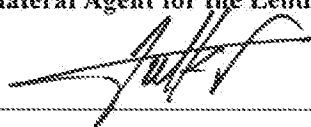
WHEREAS, the Security Agreement was recorded with the United States Patent and Trademark Office on August 6, 2012 at Reel/Frame 028734/0805 and on September 20, 2012 at 028925/0097;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Agent hereby agrees as follows:

1. Defined Terms. All capitalized terms used, but not otherwise defined herein, shall have the respective meanings ascribed in or otherwise referenced in the Security Agreement.
2. Release. The Agent, without representation or warranty of any kind, hereby releases, discharges, terminates and cancels all of its security interest in all right, title or interest in and to the Article 9 Collateral (including Intellectual Property), including the patents and patent applications set forth Schedule 1 attached hereto arising under the Security Agreement (“Patent Collateral”). If and to the extent that the Agent has acquired any right, title or interest in and to the Patent Collateral under the Security Agreement, the Agent, without representation or warranty of any kind, hereby re-transfers, re-conveys and re-assigns such right, title or interest to the Grantor.
3. Termination. The Agent, without representation or warranty of any kind, terminates and cancels the Security Agreement.
4. Further Assurances. The Agent agrees to take all further actions, and provide to the Grantor and its successors, assigns or other legal representatives, all such cooperation and assistance (including, without limitation, the execution and delivery of any and all documents or other instruments), reasonably requested by the Grantor, at the Grantor’s sole cost and expense, to more fully and effectively effectuate the purposes of this Release.
5. Governing Law. This Release shall be governed exclusively under the laws of New York, without regard to conflicts of law or choice of law principles.

IN WITNESS WHEREOF, the Agent has caused this Release to be executed by its duly authorized representative as of the Effective Date:

**Royal Bank of Canada, acting in its capacity  
as Collateral Agent for the Lenders**

By:  .....

Name: Rodica Dutka  
Title: Manager, Agency

**GRANTORS:**

Pinnacle Midco S.À.R.L.  
Pinnacle Holdco S.À.R.L.  
Paradigm Services Corp.  
Paradigm Geophysical Corp.  
Pinnacle (US) Acquisition Co Limited  
Paradigm Geoservices Canada Ltd.  
Paradigm Ltd.  
Paradigm Sciences Ltd.  
Paradigm Worldwide Ltd.  
Pinnacle (Gibraltar) Acquisition Co Limited  
Paradigm Geophysical Limited  
Paradigm Luxembourg Holdings S.À.R.L.  
Paradigm Geophysical (Luxembourg) S.À.R.L.

**Schedule 1**

<b>Jurisdiction</b>	<b>Title</b>	<b>(App. No.) / Patent No.</b>	<b>(App. Date) / Issue Date</b>	<b>Record Owner</b>
Australia	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(2008261959)	(7-Dec-09)	Paradigm Geophysical Corp and Paradigm Geophysical Ltd (joint owners)
Brazil	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	PI 0811370/0	(7-Dec-09)	Paradigm Geophysical Ltd.
Canada	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(2690129)	(7-Dec-09)	Paradigm Geophysical Corp.
China	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(200880019088)	(7-Dec-09)	Paradigm Geophysical Ltd.
European Patent Office	SYSTEM AND METHOD FOR FULL AZIMUTH ANGLE DOMAIN IMAGING IN REDUCED DIMENSIONAL COORDINATE SYSTEMS	(7827309.1)	(1-Nov-07)	PARADIGM GEOPHYSICAL (LUXEMBOURG)
European Patent Office	MODEL-BASED TIME-PRESERVING TOMOGRAPHY	(8719917)	(5-Mar-08)	PARADIGM GEOPHYSICAL (LUXEMBOURG) S.A.R.L.
European Patent Office	SYSTEM AND METHOD FOR DISPLAYING SEISMIC HORIZONS WITH ATTRIBUTES	(6809774)	(19-Oct-06)	PARADIGM GEOPHYSICAL LIMITED

<b>Jurisdiction</b>	<b>Title</b>	<b>(App. No.) / Patent No.</b>	<b>(App. Date) / Issue Date</b>	<b>Record Owner</b>
European Patent Office	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(8770278.3)	(7-Jan-10)	Paradigm Geophysical Corp and Paradigm Geophysical Ltd (joint owners)
European Patent Office	METHOD OF RECONSTRUCTING SEISMIC RECORDS TO OBTAIN HIGH RESOLUTION SIGNALS	(3759327.4)	(22-Sep-03)	PARADIGM GEOPHYSICAL CORPORATION
European Patent Office	PARTITIONING ALGORITHM FOR BUILDING A STRATIGRAPHIC GRID	(8831401.8)	(31-Mar-08)	PARADIGM GEOPHYSICAL CORPORATION
European Patent Office	SYSTEM AND METHOD FOR FAULT IDENTIFICATION	(5809254.5)	(23-Nov-05)	PARADIGM GEOPHYSICAL LTD.
European Patent Office	MULTIPLE SUPPRESSION IN ANGLE DOMAIN TIME AND DEPTH MIGRATION	(6711216.9)	(22-Feb-06)	PARADIGM GEOPHYSICAL LTD.
India	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(8437/DELNP/2009)	(7-Dec-09)	Paradigm Sciences Ltd
Norway	METHOD OF RECONSTRUCTING SEISMIC RECORDS TO OBTAIN HIGH RESOLUTION SIGNALS	(2005-1899)	(22-Sep-03)	PARADIGM GEOPHYSICAL CORPORATION
Russia	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(2009148778)	(7-Dec-09)	Paradigm Sciences Ltd



<b>Jurisdiction</b>	<b>Title</b>	<b>(App. No.) / Patent No.</b>	<b>(App. Date) / Issue Date</b>	<b>Record Owner</b>
United States	SKUA – GEOLOGY FEATURE-ALIGNED CONFORMAL STRUCTURED HEXAHEDRON-DOMINANT GEOLOGY GRID	(61/605,866)	(2-Mar-12)	PARADIGM GEOPHYSICAL LTD.
United States	SYSTEMS AND PROCESSES FOR BUILDING MULTIPLE EQUIPROBABLE COHERENT GEOMETRICAL MODELS OF THE SUBSURFACE	(12/791,370)	(1-Jun-10)	Jean-Laurent Mallet and Paradigm Sciences Ltd.
United States	SYSTEMS AND METHODS FOR BUILDING AXES, CO-AXES AND PALEO-GEOGRAPHIC COORDINATES RELATED TO A STRATIFIED GEOLOGICAL VOLUME	(12/791,352)	(1-Jun-10)	Jean-Laurent Mallet and Paradigm Sciences Ltd.
United States	SYSTEMS AND METHODS FOR MODELING FAULTS IN THE SUBSURFACE	(12/791,483)	(1-Jun-10)	Jean-Laurent Mallet and Paradigm Sciences Ltd.
United States	CROSSPLOT ANALYSIS OF A.V.O. ANOMOLIES IN SEISMIC SURVEYING	7,095,677	22-Aug-06	PARADIGM SCIENCES LTD.
United States	WAVE MIGRATION BY A KRYLOV SPACE EXPANSION OF THE SQUARE ROOT EXPONENT OPERATOR, FOR USE IN SEISMIC IMAGING	6,819,628	16-Nov-04	PARADIGM GEOPHYSICAL (LUXEMBOURG) S.A.R.L.

<b>Jurisdiction</b>	<b>Title</b>	<b>(App. No.) / Patent No.</b>	<b>(App. Date) / Issue Date</b>	<b>Record Owner</b>
United States	PARTITIONING ALGORITHM FOR BUILDING A STRATIGRAPHIC GRID	8,150,663	3-Apr-12	PARADIGM GEOPHYSICAL (LUXEMBOURG) S.A.R.L.
United States	SYSTEM AND METHOD FOR FULL AZIMUTH ANGLE DOMAIN IMAGING IN REDUCED DIMENSIONAL COORDINATE SYSTEMS	8,120,991	21-Feb-12	PARADIGM GEOPHYSICAL (LUXEMBOURG) S.A.R.L.
United States	MODELLING CONTINUOUS PROPERTIES ON DISCONTINUOUS SURFACES	6820043	16-Nov-04	PARADIGM GEOPHYSICAL CORPORATION
United States	METHOD OF RECONSTRUCTING SEISMIC RECORDS TO OBTAIN HIGH RESOLUTION SIGNALS	6,873,913	29-Mar-05	PARADIGM GEOPHYSICAL CORPORATION
United States	METHOD AND SYSTEM FOR LIMITED FREQUENCY SEISMIC IMAGING	6,859,734	22-Feb-05	PARADIGM GEOPHYSICAL CORPORATION
United States	TRANSFER FUNCTION METHOD OF SEISMIC SIGNAL PROCESSING AND EXPLORATION	6,430,508	6-Aug-02	PARADIGM GEOPHYSICAL CORPORATION
United States	MIGRATION PROCESS USING A MODEL BASED APERTURE TECHNIQUE	5,629,904	13-May-97	PARADIGM GEOPHYSICAL LTD.
United States	SYSTEM AND METHOD FOR FAULT IDENTIFICATION	7,844,402	30-Nov-10	PARADIGM GEOPHYSICAL LTD.
United States	SYSTEM AND METHOD FOR FAULT IDENTIFICATION	8,095,319	10-Jan-12	PARADIGM GEOPHYSICAL LTD.

<b>Jurisdiction</b>	<b>Title</b>	<b>(App. No.) / Patent No.</b>	<b>(App. Date) / Issue Date</b>	<b>Record Owner</b>
United States	MULTIPLE SUPPRESSION IN ANGLE DOMAIN TIME AND DEPTH MIGRATION	7584056	01-Sep-09	PARADIGM GEOPHYSICAL LTD.
United States	SYSTEM AND METHOD FOR DISPLAYING SEISMIC HORIZONS WITH ATTRIBUTES	(12/090,584)	(17-Apr-08)	PARADIGM SCIENCES LTD.
United States	MODEL-BASED TIME-PRESERVING TOMOGRAPHY	(12/042,417)	(5-Mar-08)	Paradigm Sciences Ltd
United States	DEVICE AND METHOD FOR DISPLAYING FULL AZIMUTH ANGLE DOMAIN IMAGE DATA	(12/663,326)	(7-Dec-09)	Paradigm Geophysical Ltd