

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3757111

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
BEI NORTH AMERICA LLC	02/24/2016
CRYDOM, INC.	02/24/2016
CUSTOM SENSORS & TECHNOLOGIES, INC.	02/24/2016
KAVLICO CORPORATION	02/24/2016
RECEIVING PARTY DATA	
Name:	MORGAN STANLEY SENIOR FUNDING, INC.
Street Address:	1585 BROADWAY
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10036
PROPERTY NUMBERS Total: 89	
Property Type	Number
Patent Number:	5956464
Patent Number:	5850199
Patent Number:	6160331
Patent Number:	6304076
Patent Number:	6448759
Patent Number:	6772646
Patent Number:	6520031
Patent Number:	6564654
Patent Number:	6545621
Patent Number:	6789041
Patent Number:	6831538
Patent Number:	8363881
Patent Number:	6985018
Patent Number:	6955097
Patent Number:	7015832
Patent Number:	7349821
Patent Number:	7336756

Property Type	Number
Patent Number:	8150964
Patent Number:	8378666
Application Number:	13951847
Application Number:	13951858
Application Number:	14165954
Application Number:	14381691
Patent Number:	6713904
Patent Number:	6870285
Patent Number:	6919660
Patent Number:	6787943
Patent Number:	6977594
Patent Number:	6894408
Patent Number:	7362012
Patent Number:	6360277
Patent Number:	7023075
Patent Number:	7139680
Patent Number:	7562830
Application Number:	13623694
Patent Number:	6800966
Patent Number:	6714070
Patent Number:	6815039
Patent Number:	6815846
Patent Number:	7222533
Patent Number:	7501834
Patent Number:	7775118
Patent Number:	8217475
Patent Number:	8082807
Patent Number:	8089735
Patent Number:	8472194
Patent Number:	8645063
Patent Number:	8573057
Patent Number:	7334489
Patent Number:	5949288
Patent Number:	6147541
Patent Number:	5966617
Patent Number:	5824889
Patent Number:	6211558
Patent Number:	5923952

Property Type	Number
Patent Number:	6041658
Patent Number:	5929754
Patent Number:	5929498
Patent Number:	6008113
Patent Number:	6178829
Patent Number:	6495388
Patent Number:	6605940
Patent Number:	6911819
Patent Number:	6311566
Patent Number:	6564642
Patent Number:	6505398
Patent Number:	6583631
Patent Number:	6581468
Patent Number:	6584853
Patent Number:	6849807
Application Number:	10607036
Patent Number:	7028551
Patent Number:	7251997
Patent Number:	7513475
Patent Number:	7254897
Patent Number:	7162926
Patent Number:	7353608
Patent Number:	7395718
Patent Number:	7515039
Patent Number:	7395719
Patent Number:	7571065
Patent Number:	8240217
Patent Number:	8224611
Patent Number:	8196475
Application Number:	13408761
Application Number:	13707791
Application Number:	14157235
Application Number:	14158213
Application Number:	14374667

CORRESPONDENCE DATA

Fax Number: (650)838-5109

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.

PATENT

REEL: 037927 FRAME: 0607

Phone: 650-838-3743
Email: JLIK@SHEARMAN.COM
Correspondent Name: MARK LANGER
Address Line 1: 1460 EL CAMINO REAL, 2ND FLOOR
Address Line 2: SHEARMAN & STERLING LLP
Address Line 4: MENLO PARK, CALIFORNIA 94025

ATTORNEY DOCKET NUMBER:	35613/12262
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NAME OF SUBMITTER:	MARK LANGER
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SIGNATURE:	/MARK LANGER/
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DATE SIGNED:	02/25/2016
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Total Attachments: 9

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PATENT SECURITY AGREEMENT

This Patent Security Agreement (as amended, amended and restated, supplemented or otherwise modified from time to time, the “**Patent Security Agreement**”) dated February 24, 2016 is made by the Persons listed on the signature pages hereto (each, a “**Grantor**” and, collectively, the “**Grantors**”), in favor of Morgan Stanley Senior Funding, Inc., as collateral agent (the “**Collateral Agent**”) for the Secured Parties (as defined in the Credit Agreement referred to below).

WHEREAS, SENSATA TECHNOLOGIES B.V., a private limited liability company (*besloten vennootschap met beperkte aansprakelijkheid*) incorporated under the laws of the Netherlands, SENSATA TECHNOLOGIES FINANCE COMPANY, LLC, a Delaware limited liability company, and SENSATA TECHNOLOGIES INTERMEDIATE HOLDING B.V., a private limited liability company (*besloten vennootschap met beperkte aansprakelijkheid*) incorporated under the laws of the Netherlands, have entered into a Credit Agreement dated as of May 12, 2011 (as amended, amended and restated, supplemented or otherwise modified from time to time, the “**Credit Agreement**”) with the Lenders party thereto and MORGAN STANLEY SENIOR FUNDING, INC., as administrative agent.

WHEREAS, as a condition precedent to (i) the making of the Loans, (ii) the issuance of Letters of Credit by the Lenders under the Credit Agreement, (iii) the Bilateral Obligations provided by the Bilateral Providers from time to time and (iv) the entry into Secured Hedge Agreements by the Hedge Banks from time to time, each Grantor has executed and delivered that certain Domestic Security Agreement dated as of May 12, 2011 made by the Grantors to the Collateral Agent (as amended, amended and restated, supplemented or otherwise modified from time to time, the “**Security Agreement**”). Terms defined in the Security Agreement and not otherwise defined herein are used herein as defined in the Security Agreement. Terms defined in the Credit Agreement and not otherwise defined herein or in the Security Agreement are used herein as defined in the Credit Agreement.

WHEREAS, under the terms of the Security Agreement, the Grantors have granted to the Collateral Agent, for the ratable benefit of the Secured Parties, a security interest in, among other property, certain Patents of the Grantors constituting Material Intellectual Property Collateral, and have agreed as a condition thereof to execute this Patent Security Agreement for recording with the U.S. Patent and Trademark Office.

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

Section 1. Grant of Security. Each Grantor hereby grants to the Collateral Agent for the ratable benefit of the Secured Parties a security interest in such Grantor’s right, title and interest in and to the following (all of the following items or types of property being herein collectively referred to as the “**Patent Collateral**”), whether now owned or hereafter acquired or arising:

- (i) each Patent constituting Material Intellectual Property Collateral owned by the Grantor, including, without limitation, each Patent referred to in Schedule 1 hereto;
- (ii) all issuances and applications for registration for any of the foregoing, together with all reissues, divisions, continuations, continuations-in-part, extensions and reexaminations thereof;
- (iii) all rights in the foregoing provided by international treaties or conventions, all rights corresponding thereto throughout the world and all other rights of any kind whatsoever of such Grantor accruing thereunder or pertaining thereto; and

(iv) any and all proceeds of, collateral for, income, royalties and other payments now or hereafter due and payable with respect to, and supporting obligations relating to, any and all of the foregoing, including, without limitation, all proceeds of any and all claims for damages and injunctive relief for past, present and future infringement, dilution, misappropriation, violation, misuse or breach with respect to any of the foregoing, with the right, but not the obligation, to sue for and collect, or otherwise recover, such damages.

Section 2. Recordation. Each Grantor authorizes and requests that the Commissioner for Patents and any other applicable government officer record this Patent Security Agreement.

Section 3. Execution in Counterparts. This Patent Security 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.

Section 4. Grants, Rights and Remedies. This Patent Security Agreement has been executed and delivered by the Grantors for the purpose of recording the grant of security interest herein with the U.S. Patent and Trademark Office. The security interest granted hereby has been granted to the Collateral Agent in connection with the Security Agreement and is expressly subject to the terms and conditions thereof and does not modify its terms or conditions or create any additional rights or obligations for any party thereto or hereto. The Security Agreement (and all rights and remedies of the Collateral Agent thereunder) shall remain in full force and effect in accordance with its terms.

Section 5. Governing Law. This Patent Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

BEI NORTH AMERICA LLC

By: 

Name: Jeffrey Cote

Title: Vice President

CRYDOM, INC.

By: 

Name: Jeffrey Cote

Title: Vice President

CUSTOM SENSORS & TECHNOLOGIES,
INC.

By: 

Name: Jeffrey Cote

Title: Vice President

KAYLICO CORPORATION

By: 

Name: Jeffrey Cote

Title: Vice President

**Schedule 1
to Patent
Security Agreement**

U.S. Patents and Patent Applications

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	08/634691	18-Apr-1996	5956464	21-Sep-1999	BEI North America LLC	Fuzzy Logic Controlled Endometrium Ablator
US	08/781199	10-Jan-1997	5850199	15-Dec-1998	BEI North America LLC	Mobile Tracking Antenna Made By Semiconductor Technique
US	09/211021	14-Dec-1998	6160331	12-Dec-2000	BEI North America LLC	Apparatus And Method For Reducing Noise And Vibration In An Electric Motor
US	09/390885	7-Sep-1999	6304076	16-Oct-2001	BEI North America LLC	Angular Position Sensor With Inductive Attenuating Coupler
US	09/764840	17-Jan-2001	6448759	10-Sep-2002	BEI North America LLC	Non-contact linear Position Sensor for motion control applications With Inductive Attenuating Coupler
US	09/904067	11-Jul-2001	6772646	10-Aug-2004	BEI North America LLC	Differential Capacitive Torque Sensor
US	09/935374	22-Aug-2001	6520031	18-Feb-2003	BEI North America LLC	Non Contacting Torque Sensor
US	09/970339	2-Oct-2001	6564654	20-May-2003	BEI North America LLC	Vertical Movement Differential Capacitive Torque Sensor
US	10/006092	6-Dec-2001	6545621	8-Apr-2003	BEI North America LLC	Digitally Programmable Pulse-Width Modulation (Pwm)
US	10/143,500	7-May-2002	6789041	7-Sep-2004	BEI North America LLC	Bi-Directional Signal Converter
US	10/406099	2-Apr-2003	6831538	14-Dec-2004	BEI North America LLC	Linear Voice Coil Actuator As A Controllable Electromagnetic Compression Spring
US	10/693394	24-Oct-2003	8363881	29-Jan-2013	BEI North America LLC	Closed-Ended Linear Voice Coil Actuator With Improved Force Characteristic
US	10/813329	29-Mar-2004	6985018	10-Jan-2006	BEI North America LLC	Programmable Multi-Turn, Pulse Width Modulation Circuit

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	10/842914	11-May-2004	6955097	18-Oct-2005	BEI North America LLC	Radial Movement Capacitive Torque Sensor
US	10/853330	25-May-2004	7015832	21-Mar-2006	BEI North America LLC	Pulse Width Modulation Based Digital Incremental Encoder
US	10/934,296	3-Sep-2004	7349821	25-Mar-2008	BEI North America LLC	Bi-Directional Signal Converter
US	11/258834	25-Oct-2005	7336756	26-Feb-2008	BEI North America LLC	Reprogrammable Bi-Directional Signal Converter
US	11/753725	25-May-2007	8150964	3-Apr-2012	BEI North America LLC	Wireless Industrial Data Transmission System
US	12/907754	19-Oct-2010	8378666	19-Feb-2013	BEI North America LLC	METHOD OF AND APPARATUS FOR A MULTI-TURN SENSOR
US	13/951847	26-Jul-2013			BEI North America LLC	System and method for determining Absolute Angular Position of rotating member
US	13/951858	26-Jul-2013			BEI North America LLC	System and Method for Converting Output of Sensors to Absolute Angular Position of a Rotating Member
US	14/165954	28-Jan-2014			BEI North America LLC	Polarity Insensitive Hall Effect Sensor
US	14/381691	28-Aug-2014			BEI North America LLC	Programmable Sensors
US	09/817925	27-Mar-2001	6713904	30-Mar-2004	BEI Technologies, Inc.	Linear Voice Coil Actuator With The Compensating Coils
US	10/080870	22-Feb-2002	6870285	22-Mar-2005	BEI Technologies, Inc.	Long Stroke Linear Voice Coil Actuator With The Proportional Solenoid Type Characteristic
US	10/116495	3-Apr-2002	6919660	19-Jul-2005	BEI Technologies, Inc.	Linear Brushless Dc Motor With Ironcore Composite Armature Assembly
US	10/327316	20-Dec-2002	6787943	7-Sep-2004	BEI Technologies, Inc.	Linear Voice Coil Actuator With Planar Coils
US	10/483550	3-Jul-2002	6977594	20-Dec-2005	BEI Technologies, Inc.	Inductive Position Detector
US	10/741133	19-Dec-2003	6894408	17-May-2005	BEI Technologies, Inc.	Linear Voice Coil Actuator With Compensating Coils

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	10/860361	2-Jun-2004	7362012	22-Apr-2008	BEI Technologies, Inc.	Linear Brushless Dc Motor With Ironcore Composite Armature Assembly
US	09/121026	22-Jul-1998	6360277	19-Mar-2002	Crydom, Inc.	Addressable Intelligent Relay
US	10/702693	6-Nov-2003	7023075	4-Apr-2006	Crydom, Inc.	Teardrop Shaped Lead Frames
US	10/891881	15-Jul-2004	7139680	21-Nov-2006	Crydom, Inc.	Apparatus And Method For Standby Lighting
US	11/227819	15-Sep-2005	7562830	21-Jul-2009	Crydom, Inc.	Temperature Controller
US	13/623694	20-Sep-2012			Crydom, Inc.	High Speed Charge Control for Power Switching Devices
US	10/032358	21-Dec-2001	6800966	5-Oct-2004	Custom Sensors & Technologies, Inc.	Linear Brushless Dc Motor With Ironless Armature Assembly
US	10/072136	7-Feb-2002	6714070	30-Mar-2004	Custom Sensors & Technologies, Inc.	Differential Charge Amplifier With Built-In Testing For Rotation Rate Sensor
US	10/081123	21-Feb-2002	6815039	9-Nov-2004	Custom Sensors & Technologies, Inc.	Resistance Element for Potentiometric Devices and Method Of Manufacture
US	10/241316	10-Sep-2002	6815846	9-Nov-2004	Custom Sensors & Technologies, Inc.	Linear Voice Coil Actuator With A Latching Feature
US	11/146401	6-Jun-2005	7222533	29-May-2007	Custom Sensors & Technologies, Inc.	Torsional Rate Sensor with Momentum Balance and Mode Decoupling
US	11/159572	21-Jun-2005	7501834	10-Mar-2009	Custom Sensors & Technologies, Inc.	Voice Coil Actuator With Embedded Capacity Sensor For Motion, Position And/Or Acceleration Detection
US	12/109275	24-Apr-2008	7775118	17-Aug-2010	Custom Sensors & Technologies, Inc.	Sensor Element Assembly And Method
US	12/121070	15-May-2008	8217475	10-Jul-2012	Custom Sensors & Technologies, Inc.	Backside Controlled Mems Capacitive Sensor And Interface And Method
US	12/131879	2-Jun-2008	8082807	27-Dec-2011	Custom Sensors & Technologies, Inc.	Sensor Assembly And Method
US	12/325466	1-Dec-2008	8089735	3-Jan-2012	Custom Sensors & Technologies, Inc.	Hybrid Power Relay with Thermal Protection
US	12/774178	5-May-2010	8472194	25-Jun-2013	Custom Sensors & Technologies, Inc.	Solid State Switching Device with Integral Heatsink

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	12/976603	22-Dec-2010	8645063	4-Feb-2014	Custom Sensors & Technologies, Inc.	Method And System For Initial Quaternion And Attitude estimation
US	13/096450	28-Apr-2011	8573057	5-Nov-2013	Custom Sensors & Technologies, Inc.	Sensor Mount Vibration Reduction
US	11/363405	27-Feb-2006	7334489	26-Feb-2008	Customs Sensors & Technologies, Inc.	Dual Rate Force Transducer
US	08/899536	24-Jul-1997	5949288	7-Sep-1999	Endress + Hauser Gmbh + Co. Envec Mess- Und Regeltechnik Gmbh + Co. Vega Grieshaber Kg Kavlico Corporation	Circuit Arrangement With An Operational Amplifier
US	08/935870	23-Sep-1997	6147541	14-Nov-2000	Endress + Hauser Gmbh + Co. Envec Mess- Und Regeltechnik Gmbh + Co. Vega Grieshaber Kg Kavlico Corporation	Monolithic Mos-Sc Circuit
US	08/717024	20-Sep-1996	5966617	12-Oct-1999	Kavlico Corporation	Multiple Local Oxidation For Surface Micromachining
US	08/812683	6-Mar-1997	5824889	20-Oct-1998	Kavlico Corporation	Capacitive Oil Deterioration And Contamination Sensor
US	08/896793	18-Jul-1997	6211558	3-Apr-2001	Kavlico Corporation	Surface Micro-Machined Sensor With Pedestal
US	08/897124	18-Jul-1997	5923952	13-Jul-1999	Kavlico Corporation	Process For Making A Fusion-Bonded Semiconductor Device Having An Electrical Feed-Through
US	08/972314	18-Nov-1997	6041658	28-Mar-2000	Kavlico Corporation	Seat Cushion Pressure Sensing System and Method
US	08/984584	3-Dec-1997	5929754	27-Jul-1999	Kavlico Corporation	High-Sensitivity Capacitive Oil Deterioration And Level Sensor
US	09/040502	17-Mar-1998	5929498	27-Jul-1999	Kavlico Corporation	Fusion-Bond Electrical Feed-Through
US	09/081696	19-May-1998	6008113	28-Dec-1999	Kavlico Corporation	Tool For Wafer Bonding In A Vacuum
US	09/342365	29-Jun-1999	6178829	30-Jan-2001	Kavlico Corporation	Redundant Linkage And Sensor Assembly

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	09/538127	29-Mar-2000	6495388	17-Dec-2002	Kavlico Corporation	Surface Micro-Machined Sensor With Pedestal
US	09/547511	12-Apr-2000	6605940	12-Aug-2003	Kavlico Corporation	Linear Variable Differential Transformer Assembly With Nulling Adjustment And Process For Nulling Adjustment
US	09/632223	4-Aug-2000	6911819	28-Jun-2005	Kavlico Corporation	Rotary To Linear LvdT System
US	09/669106	25-Sep-2000	6311566	6-Nov-2001	Kavlico Corporation	Redundant Linkage And Sensor Assembly
US	09/704376	2-Nov-2000	6564642	20-May-2003	Kavlico Corporation	Stable Differential Pressure Measuring System
US	09/729044	4-Dec-2000	6505398	14-Jan-2003	Kavlico Corporation	Very High Pressure Miniature Sensing and Mounting Technique
US	09/759865	12-Jan-2001	6583631	24-Jun-2003	Kavlico Corporation	Precise Dielectric Constant Sensor
US	09/815094	22-Mar-2001	6581468	24-Jun-2003	Kavlico Corporation	Independent-Excitation Cross-Coupled Differential Pressure Transducer
US	09/977931	12-Oct-2001	6584853	1-Jul-2003	Kavlico Corporation	Corrosion-Proof Pressure Transducer
US	10/166235	3-Jun-2002	6849807	1-Feb-2005	Kavlico Corporation	Seat Weight Measurement System
US	10/607036	25-Jun-2003			Kavlico Corporation	Voltage Limiter With Reverse Voltage Blocking Circuit
US	10/872055	18-Jun-2004	7028551	18-Apr-2006	Kavlico Corporation	Linearity Semi-Conductive Pressure Sensor
US	10/901829	28-Jul-2004	7251997	7-Aug-2007	Kavlico Corporation	Fuel Tank Module Control System
US	11/048131	1-Feb-2005	7513475	7-Apr-2009	Kavlico Corporation	Weight Transfer Link
US	11/106027	13-Apr-2005	7254897	14-Aug-2007	Kavlico Corporation	Integrated Tilt Sensor
US	11/198017	4-Aug-2005	7162926	16-Jan-2007	Kavlico Corporation	Lead Embedded Pressure Sensor
US	11/339040	25-Jan-2006	7353608	8-Apr-2008	Kavlico Corporation	Multiple Channel Rvdt With Dual Load Path And Fail-Safe Mechanism
US	11/405961	17-Apr-2006	7395718	8-Jul-2008	Kavlico Corporation	Reliable Piezo-Resistive Pressure Sensor
US	11/447601	5-Jun-2006	7515039	7-Apr-2009	Kavlico Corporation	Method And Apparatus For Pressure Monitoring
US	11/552064	23-Oct-2006	7395719	8-Jul-2008	Kavlico Corporation	Preformed Sensor Housing And Methods To Produce Thin Metal Diaphragms

Country	Application No.	Filing Date	Patent No.	Issue Date	Owner	Title
US	11/754971	29-May-2007	7571065	4-Aug-2009	Kavlico Corporation	Method And Apparatus For Calibration Of Sensor Signals
US	11/872596	15-Oct-2007	8240217	14-Aug-2012	Kavlico Corporation	Diaphragm Isolation Forming Through Subtractive Etching
US	12/402296	11-Mar-2009	8224611	17-Jul-2012	Kavlico Corporation	One Pin Calibration Assembly And Method For Sensors
US	12/404792	16-Mar-2009	8196475	12-Jun-2012	Kavlico Corporation	Cointegrated Mems Sensor And Method
US	13/408761	29-Feb-2012			Kavlico Corporation	Anti Backlash Coupler
US	13/707791	7-Dec-2012			Kavlico Corporation	Rotatable And Stationary Gates For Movement Control
US	14/157235	16-Jan-2014			Kavlico Corporation	Pressure Transducer with Capacitively Coupled Source Electrode
US	14/158213	17-Jan-2014			Kavlico Corporation	Pressure Transducer with Capacitively Coupled Source Electrode
US	14/374667	27-Oct-2014			Kavlico Corporation	Rotary Variable Differential Transformer (Rvdt) Sensor Assembly With Auxiliary Output Signal