

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4030915

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST IN PATENTS
CONVEYING PARTY DATA	
Name	Execution Date
CERBERUS BUSINESS FINANCE, LLC	08/29/2016
RECEIVING PARTY DATA	
Name:	ACLARA TECHNOLOGIES LLC
Street Address:	945 HORNET DRIVE
City:	HAZELWOOD
State/Country:	MISSOURI
Postal Code:	63042
Name:	ACLARA METERS LLC F/K/A MRH METERS LLC
Street Address:	945 HORNET DRIVE
City:	HAZELWOOD
State/Country:	MISSOURI
Postal Code:	63042
PROPERTY NUMBERS Total: 178	
Property Type	Number
Application Number:	61164049
Application Number:	12731825
PCT Number:	US0886183
Application Number:	11836354
Application Number:	12377177
Application Number:	60837354
Application Number:	11836381
Application Number:	60837349
Application Number:	60780152
Application Number:	11682747
Application Number:	11270789
Application Number:	10430786
Application Number:	10645468
Patent Number:	4658238
Application Number:	07185792

PATENT

Property Type	Number
Application Number:	07227343
Application Number:	07421794
Application Number:	07481247
Application Number:	07809588
Application Number:	07722134
Application Number:	08086085
Application Number:	07982633
Application Number:	08242597
Application Number:	08966447
PCT Number:	US0860731
PCT Number:	US0775547
PCT Number:	US0763393
PCT Number:	US0643084
PCT Number:	US9209003
PCT Number:	US9209001
PCT Number:	US9304922
PCT Number:	US0954482
Application Number:	12549472
PCT Number:	US0956638
Application Number:	12558122
Application Number:	05590941
Application Number:	05860656
Application Number:	06197043
PCT Number:	US2012065764
Application Number:	61562787
PCT Number:	US2012064162
Application Number:	61559794
Application Number:	13669773
Application Number:	08743162
Application Number:	11186312
Application Number:	11063200
Application Number:	11075506
PCT Number:	US1987003241
Patent Number:	4795892
Patent Number:	5146067
PCT Number:	US9700043
Application Number:	09164804
PCT Number:	US2006033471

Property Type	Number
Application Number:	11232072
PCT Number:	US9820379
Application Number:	08949440
Application Number:	09303173
Application Number:	09703298
Application Number:	12146154
Application Number:	61182483
Application Number:	12613217
Application Number:	12026951
Application Number:	61447365
Application Number:	13407265
PCT Number:	US2011022221
Application Number:	12692919
PCT Number:	US2011051915
Application Number:	61386720
Application Number:	13233173
PCT Number:	US2011045740
Application Number:	61373589
Application Number:	13205355
PCT Number:	US2011047525
Application Number:	61373586
PCT Number:	US2011062510
Application Number:	61442956
Application Number:	12020763
Application Number:	61437094
Application Number:	13347242
Application Number:	12105258
Application Number:	13407595
Application Number:	61885296
Application Number:	61837443
Patent Number:	5617084
Patent Number:	5719564
Application Number:	09059323
Application Number:	61154037
Application Number:	12709913
Application Number:	12832332
PCT Number:	US2010057245
Application Number:	61264625

Property Type	Number
PCT Number:	US2010057054
Application Number:	14156765
Application Number:	60556619
Application Number:	11092287
Application Number:	61788957
Application Number:	08767371
Application Number:	08898314
PCT Number:	US1028592
Application Number:	10858823
Application Number:	11893170
Application Number:	12345702
Application Number:	13071748
Application Number:	12614100
Application Number:	12893038
Application Number:	13288019
Application Number:	12986397
Application Number:	13029460
Application Number:	13192001
Application Number:	13047596
Application Number:	13105273
Application Number:	13093474
Application Number:	13005826
Application Number:	12984260
Application Number:	12948986
Application Number:	13074399
Application Number:	13194246
Application Number:	13197117
Application Number:	13297612
Application Number:	13367202
Application Number:	13014742
Application Number:	13229038
Application Number:	13212818
Application Number:	13115145
Application Number:	13210499
Application Number:	13191391
Application Number:	13253199
Application Number:	13356290
Application Number:	13231825

Property Type	Number
Application Number:	13224208
Application Number:	13275121
Application Number:	13277846
Application Number:	14103287
Application Number:	13227199
Application Number:	13345335
Application Number:	13228924
Application Number:	13228968
Application Number:	13670285
Application Number:	13670280
Application Number:	13230409
Application Number:	13230007
Application Number:	13232196
Application Number:	13253531
Application Number:	13232224
Application Number:	14690500
Application Number:	13419865
Application Number:	13267711
Application Number:	14675231
Application Number:	13370880
Application Number:	13328742
Application Number:	13327006
Application Number:	13327033
Application Number:	13326977
Application Number:	13711046
Application Number:	13436821
Application Number:	13296188
Application Number:	13841697
Application Number:	14152167
Application Number:	13898290
Application Number:	14139157
Application Number:	14175833
Application Number:	14454861
Application Number:	14447053
Application Number:	14600413
Application Number:	08564543
Application Number:	08872035
Application Number:	08564971

Property Type	Number
Application Number:	08857322
Application Number:	09168370
Application Number:	09606270
Application Number:	09606769
Application Number:	09606881
Application Number:	09682144
Application Number:	09826792
Application Number:	10913100
Application Number:	11499961
PCT Number:	US1510747
PCT Number:	US1469302

CORRESPONDENCE DATA

Fax Number: (212)593-5955

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.

Phone: 212-756-2132

Email: scott.kareff@srz.com

Correspondent Name: S. KAREFF C/O SCHULTE ROTH & ZABEL LLP

Address Line 1: 919 THIRD AVEUNUE

Address Line 2: 25TH FLOOR

Address Line 4: NEW YORK, NEW YORK 10022

ATTORNEY DOCKET NUMBER:	014951-1438
NAME OF SUBMITTER:	SCOTT KAREFF (014951-1438)
SIGNATURE:	/kc for sk/
DATE SIGNED:	08/30/2016

Total Attachments: 51

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RELEASE OF SECURITY INTEREST IN PATENTS

This RELEASE OF SECURITY INTEREST IN PATENTS (this "Release"), dated as of August 29, 2016 (the "Effective Date"), is made by CERBERUS BUSINESS FINANCE, LLC, in its capacity as agent for the Lenders (the "Agent"), in favor of each grantor party identified on the signature pages hereto (each, a "Grantor" and collectively, the "Grantors").

WHEREAS, reference is made to that certain Term Loan and Security Agreement, dated as of March 28, 2014 (as supplemented, amended, amended and restated, supplemented or otherwise modified from time to time, the "Term Loan and Security Agreement") by and among Meter Readings Holding, LLC, a Delaware limited liability company ("Parent Holdco"), Aclara Technologies LLC, an Ohio limited liability company ("Aclara"), Aclara International LLC, a Missouri limited liability company ("Aclara International"), Aclara Meters LLC f/k/a MRH Meters LLC, a Delaware limited liability company ("Aclara Meters"), Smart Grid Solutions, LLC, a Delaware limited liability company ("SG") and Aclara International Holdings, Inc., a Delaware corporation ("Aclara Holdings"), and together with each Person from time to time joined as a party thereto as a "Borrower" in accordance with the terms thereof, and all of their respective permitted successors and assigns, "Borrowers" and each a "Borrower"), the lenders from time to time party thereto (the "Lenders"), and Agent.

WHEREAS, pursuant to the Term Loan and Security Agreement, the Grantors executed and delivered a Patent Security Agreement, dated as of March 28, 2014 (the "Aclara Patent Security Agreement") and a Patent Security Agreement, dated as of December 21, 2015 (the "Aclara Meters Patent Security Agreement") and, collectively with the Aclara Patent Security Agreement and the Term Loan and Security Agreement, the "Security Agreements"), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Aclara Patent Security Agreement was recorded with the United States Patent and Trademark Office on March 28, 2014 at Reel/Frame 032554/0912 and the Aclara Meters Patent Security Agreement was recorded with the United States Patent and Trademark Office on December 22, 2015 at Reel/Frame 037362/0603.

WHEREAS, pursuant to the Security Agreements, the Grantors pledged and granted to the Agent a lien on and security interest in all of their rights, title and interest in and to certain collateral identified in said Security Agreements, including, without limitation the Patents set forth on Schedule I hereto (collectively the Patents together with all reissues, extensions and reexaminations thereof and amendments thereto, the underlying inventions thereof, all rights of the Grantor(s) accruing under any of the foregoing by applicable law, international treaties and conventions throughout the world, any and all royalties, fees, income, payments and other proceeds now or hereafter due or payable with respect to the foregoing, and 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, 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, the "Released Patent Collateral"); and

WHEREAS, the Grantor(s) have requested that the Agent enter into this Release in order to effectuate, evidence and record the release and reassignment to the Grantor(s) of any and all right, title and interest the Agent and the Lenders may have in the Released Patent Collateral pursuant to the Security Agreements.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, each of the Grantors and 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 Agreements, as applicable.

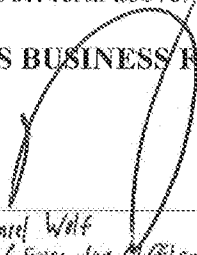
2. Release of Collateral. The Agent, on behalf of itself and the Lenders and any other secured parties represented by the Agent, and their respective successors, legal representatives and assigns, without representation or warranty of any kind, hereby releases, discharges, terminates and cancels all of its security interest in and to the Released Patent Collateral, arising under the Security Agreements. If and to the extent that the Agent has acquired any right, title or interest in and to the Released Patent Collateral under the Patent Security Agreements, the Agent, without representation or warranty of any kind, hereby re-transfers, re-conveys and re-assigns such right, title or interest to the Grantors.

3. Further Assurances. The Agent agrees to take any necessary further actions, and provide to each 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 each Grantor, at such Grantor's sole cost and expense, to more fully and effectively effectuate the purposes of this Release.

4. GOVERNING LAW. THIS RELEASE SHALL BE GOVERNED EXCLUSIVELY UNDER THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO CONFLICTS OF LAW OR CHOICE OF LAW PRINCIPLES.

IN WITNESS WHEREOF, each of the Grantors and the Agent has caused this Release to be executed by its duly authorized representative as of the date first set forth above:

CERBERUS BUSINESS FINANCE, LLC,
as Agent

By: 

Name: *Daniel Wolf*

Title: *Chief Executive Officer*

GRANTORS:

ACLARA TECHNOLOGIES LLC

By: Kurt R. Bruenning
Name: Kurt R. Bruenning
Title: Chief Executive Officer
and Secretary

ACLARA METERS LLC

By: Kurt R. Bruenning
Name: Kurt R. Bruenning
Title: Chief Executive Officer
and Secretary

Release of Security Interests in Patents

PATENT
REEL: 039880 FRAME: 0918

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SCHEDULE I

PATENTS

[See attached]

SCHEDULE I
TO
PATENT SECURITY AGREEMENT

Patents

Aclara Technologies LLC Patents and Applications

Docket No.: EP20-00081
Title: Under Frequency/Under Voltage Detection In A Demand Response Unit
Attorney(s): Polster Lieder
Inventor(s): Fleck, Christopher

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2010/028592	25-Mar-2010			
United States of America	PRO	Pending	61/164,049	27-Mar-2009		27-Mar-2010	
United States of America	PRI	Published	12/731,825	25-Mar-2010			

Docket No.: EP20-00082
Title: Achieving Energy Demand Response Using Price Signals and Load Control Transponder
Attorney(s): Polster Lieder
Inventor(s): Haynes, David D

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	2008/086183	10-Dec-2008			
United States of America	ORD	Pending	12/809,134	11-Jan-2012			

Note: Response to Office Action at USPTO due March 11, 2014.

Docket No.: EP20-00083

Title: Detection of Fast Poll Responses in a TWACS Inbound

Attorney(s): Polster Lieder

Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US07/0075548	09-Aug-2007			
United States of America	ORD	Granted	11/836,354	09-Aug-2007	8,040,251	18-Oct-2011	16-Jun-2030
United States of America	PCT	Granted	12/377,177	11-Feb-2009	8456285	04-Jun-2013	22-May-2029
United States of America	PRO	Completed	60/837,354	11-Aug-2006		11-Aug-2007	

Docket No.: EP20-00084

Title: Method of Correcting Message Errors Using Cyclic Redundancy Checks

Attorney(s): Polster Lieder

Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US2007/075547	09-Aug-2007			
United States of America	ORD	Granted	11/836,381	09-Aug-2007	7,831,884	09-Nov-2010	09-Aug-2027
United States of America	PRO	Completed	60/837,349	11-Aug-2006		11-Aug-2007	

Docket No.: EP20-00085

Title: Intelligent Fault Detector System and Method

Attorney(s): Polster Lieder

Inventor(s): Mak, Sioc T

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US2007/063393	06-Mar-2007			

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United States of America	PRO	Completed	60/780,152	08-Mar-2006	08-Mar-2007	7,496,430	08-Mar-2007	06-Mar-2027
United States of America	PRI	Granted	11/682,747	06-Mar-2007			24-Feb-2009	

Docket No.: EP20-00087

Title: Tamper Detection Apparatus For Electrical Meters

Attorney(s): Polster Lieder

Inventor(s): Soni, Devendra K

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US2006/043084	02-Nov-2006			
United States of America	PRI	Granted	11/270,789	09-Nov-2005	7,432,823	07-Oct-2008	30-Nov-2026

Docket No.: EP20-00090

Title: Concurrent Phase Communication in TWACS

Attorney(s): Polster Lieder

Inventor(s): Hammond, Benjamin A; Hessling, Jr., John B; Lagerstrom, Krister

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	10/430,786	06-May-2003	6,940,396	06-Sep-2005	16-Jan-2024

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Docket No.: EP20-00091
Title: Quality of Service Terrain Map for Utilities
Attorney(s): Polster Lieder
Inventor(s): Haynes, David D

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	10/645,468	21-Aug-2003	7,180,517	20-Feb-2007	05-Oct-2023

Docket No.: EP20-00092
Title: Method and Apparatus for Generating Intelligence on a Carrier
Attorney(s): Polster Lieder

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Expired	411,035	24-Aug-1982	4,658,238	14-Apr-1987	14-Apr-2004

Docket No.: EP20-00093
Title: Method and Apparatus for Extracting Inbound Information Generated Line-to-Line in a Multi-Phase Electric Distribution
Attorney(s): Polster Lieder
Inventor(s): Mak, Sioe T

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	07/185,792	25-Apr-1988	4,918,422	17-Apr-1990	25-Apr-2008

Docket No.: EP20-00095
Title: Integrated Meter Transponder

Attorney(s): Polster Lieder
Inventor(s): Aubuchon, Mark E; Wyler, Craig S
Country **Case Type** **Status** **Application Number** **Filing Date** **Patent Number** **Issue Date** **Expiration Date**
United States of America PRI Granted 07/227,343 02-Aug-1988 4,998,102 05-Mar-1991 02-Aug-2008

Docket No.: EP20-00096
Title: Simultaneous Inbound Multi-Channel Communication System Using Electricity Distribution Network
Attorney(s): Polster Lieder
Inventor(s): Mak, Sioe T

Country **Case Type** **Status** **Application Number** **Filing Date** **Patent Number** **Issue Date** **Expiration Date**
United States of America PRI Granted 07/421,794 16-Oct-1989 4,963,853 16-Oct-1990 16-Oct-2009

Docket No.: EP20-00097
Title: Carrier Stability Erasure Filling System for Communications Over Electricity Distribution Network
Attorney(s): Polster Lieder
Inventor(s): Maginnis, Richard L; Franzen, Kevin J; Mak, Sioe T

Country **Case Type** **Status** **Application Number** **Filing Date** **Patent Number** **Issue Date** **Expiration Date**
United States of America PRI Granted 07/481,247 20-Feb-1990 4,996,513 26-Feb-1991 20-Feb-2010

Docket No.: EP20-00098
Title: Inbound Communications Using Electricity Distribution
Attorney(s): Polster Lieder

Inventor(s): Franzen, Kevin J; Mak, Sioe T

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	US92/09003	27-Oct-1992			
United States of America	PRI	Granted	07/809,588	17-Dec-1991	5,262,755	16-Nov-1993	17-Dec-2011

Docket No.: EP20-00099
Title: Outbound Signal Detector System and Method
Attorney(s): Polster Lieder
Inventor(s): Hessling, Jr., John B

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	US92/09001	26-Oct-1992			
United States of America	PRI	Granted	07/722,134	27-Jun-1991	5,198,796	30-Mar-1993	27-Jun-2011

Docket No.: EP20-00100
Title: Method of Receiving Unsolicited Messages on an Electrical Distribution Network Communications System
Attorney(s): Polster Lieder
Inventor(s): Mak, Sioe T

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	08/086,085	06-Jul-1993	5,486,805	23-Jan-1996	06-Jul-2013

Docket No.: EP20-00101
Title: Waterproof, Gasketless Enclosure
Attorney(s): Polster Lieder
Inventor(s): Wyler, Craig S

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
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Patent Cooperation Treaty	ORD	Completed	US93/04922	25-May-1993	5,310,075	10-May-1994	27-Nov-2012
United States of America	PRI	Granted	07/982,633	27-Nov-1992			

Docket No.: EP20-00102

Title: Linear Alternating Current Interface for Electronic Meters

Attorney(s): Polster Lieder

Inventor(s): Mak, Sioe T; Ramey, Brian C

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	08/242,597	13-May-1994	5,696,441	09-Dec-1997	09-Dec-2014

Docket No.: EP20-00103

Title: Current Level Control for TWACS Inbound Communications

Attorney(s): Polster Lieder

Inventor(s): Kelly, Dennis L

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	08/966,447	07-Nov-1997	5,933,072	03-Aug-1999	07-Nov-2017

Docket No.: EP20-00113

Title: Detection of Outbound Message Signals in a Power Line Two-Way Communications System

Attorney(s): Polster Lieder

Inventor(s): Spencer, Quentin; Hessling, Jr., John B; Hammond, Benjamin A; Kelley, Dennis; Rieken, David; Davis, William J; Walker II, Michael R

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2008/060731	18-Apr-2008			

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United States of America ORD Published 12/596,987 22-Oct-2009

Docket No.: EP20-00114

Title: A General Method for Low-Frequency Data Transmission on a Power Line

Attorney(s): Polster Lieder

Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US2009/054482	20-Aug-2009			
United States of America	ORD	Granted	12/549,472	28-Aug-2009	8,401,093	19-Mar-2013	18-Jan-2032

Docket No.: EP20-00115

Title: Method for Load Control Using Temporal Measurements of Energy for Individual Pieces of Equipment

Attorney(s): Polster Lieder

Inventor(s): Fleck, Christopher; Virkus, Mark; Kobeszka, Edward

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	2009/056638	11-Sep-2009			
United States of America	ORD	Granted	12/558,122	11-Sep-2009	8,433,452	30-Apr-2013	15-Sep-2031

Docket No.: EP20-00117

Title: Cycloconverter Apparatus and Method for Working into an Active Load

Attorney(s): Polster Lieder

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Expired	676,468	13-Apr-1976	4,105,897	08-Aug-1978	13-Apr-1996

Docket No.: EP20-00118

Title: Method and Apparatus for Transmitting Intelligence Over a Carrier Wave

Attorney(s): Polster Lieder

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
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Assignment for Security - Patents

United States of America	CIP	Expired	590,941	01-Jul-1975	4,106,007	08-Aug-1978	08-Aug-1995
United States of America	DIV	Expired	860,656	14-Dec-1977	4,218,655	19-Aug-1980	19-Aug-1997

Docket No.: EP20-00119

Title: Method and Apparatus for Communication Over Electric Power Lines

Attorney(s): Polster Lieder

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	CON	Expired	197,043	15-Oct-1980	4,400,688	23-Aug-1983	23-Aug-2000

Docket No.: EP20-00129

Title: Metrology Timekeeping Systems and Methods

Attorney(s): Senniger Powers

Inventor(s): Haynes, David D

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	2012/065764	19-Nov-2012			
United States of America	PRO	Pending	61/562,787	22-Nov-2011		22-Nov-2012	

Docket No.: EP20-00133

Title: TWACS Pulse Inductor Reversal Circuit

Attorney(s): Polster Lieder

Inventor(s): Drumeller, Joshua K

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	2012/064162	08-Nov-2012			
United States of America	PRO	Pending	61/559,794	15-Nov-2011		15-Nov-2012	
United States of America	ORD	Published	13/669,773	06-Nov-2012			

Assignment for Security - Patents

Docket No.: EP20-00134

Title: Device for Energy Load Control

Attorney(s):

Inventor(s): Hodge, James Graham; Holliday, Philip A

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	95NZ68	27-Jul-1995			
United States of America	CON	Granted	08/743,162	04-Nov-1996	5,903,213	11-May-1999	27-Jul-2015

Note: From CIC acquisition.

Docket No.: EP20-00135

Title: Device for the Operation of Appliances, Utilities and Services Within a Building

Attorney(s):

Inventor(s): Hodge, James Graham; Holliday, Philip A; Bridgman, Gary C

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	NZ1996/000110	04-Oct-1996			

Note: From CIC acquisition.

Docket No.: EP20-00136

Title: Method for Increasing Burst Capacity and/or Inbound Signal Strength by Innovative Approach for Electrical Energy

Assignment for Security - Patents

Meters Used for Automated Meter Reading

Attorney(s): Polster Lieder

Inventor(s): Soni, Devendra K

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	11/186,312	21-Jul-2005	7,312,693	25-Dec-2007	21-Jul-2025

Docket No.: EP20-00138

Title: Smart Disconnect Switch Interbase (SmartDSI) for Automated Meter Reading (AMR) Network or AMR System

Attorney(s):

Inventor(s): Soni, Devendra K

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	11/063,200	22-Feb-2005	7,130,722	31-Oct-2006	22-Feb-2025

Docket No.: EP20-00139

Title: A Super-Fast Polling Scheme for Determining the Presence of Individual Meters on the Power Line

Attorney(s):

Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	11/075,506	09-Mar-2005	7,227,462	05-Jun-2007	24-Sep-2025

Docket No.: EP20-00141

Title: Prepayment Metering System Using Encoded Purchase Cards

Attorney(s):

Inventor(s): Sloan, Joseph W

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	87US3241	07-Dec-1987			

Note: From CIC acquisition.

Docket No.: EP20-00142

Title: Pre-paid Commodity System

Attorney(s):

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Expired	130,548	09-Dec-1987	4,795,892	03-Jan-1989	09-Dec-2007

Docket No.: EP20-00143

Title: Prepayment Metering System Using Encoded Purchase Cards From Multiple Locations

Attorney(s):

Inventor(s): Sloan, Joseph W; Snyder, Harry P; Foster, Joseph W; Day, Mark C; Berg, Timothy G; Jarreau, Michael; Miller, Mark P; Bush, A. Michael

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	WO91US271	11-Jan-1991			
United States of America	PRI	Granted	464,328	12-Jan-1990	5,146,067	08-Sep-1992	12-Jan-2010

Note: From CIC acquisition.

Docket No.: EP20-00145

Title: Distributed Frequency Relay

Attorney(s):**Inventor(s):** Hodge, James Graham; Sutton, Roger Anthony

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	97/00043	01-Apr-1997			
United States of America	CON	Granted	09/164,804	01-Oct-1998	6,314,378	06-Nov-2001	01-Apr-2016

Note: From CIC acquisition.

Docket No.: EP20-00146**Title:** A Set of Irregular LDPC Codes with Random Structure and Low Encoding Complexity**Attorney(s):** JJM**Inventor(s):** Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US2006/033471	29-Aug-2006			
United States of America	PRI	Granted	11/232,072	21-Sep-2005	7,523,375	21-Apr-2009	24-Mar-2026

Docket No.: EP20-00148**Title:** System and Method for Communication Between Remote**Attorney(s):****Inventor(s):** Colton, Laurence J

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Completed	98US20379	29-Sep-1998			
United States of America	PRI	Granted	08/949,440	16-Oct-1997	5,986,574	16-Nov-1999	16-Oct-2017
United States of America	CON	Granted	09/303,173	30-Apr-1999	6,239,722	29-May-2001	16-Oct-2017
United States of America	CON	Granted	09/703,298	01-Nov-2000	6,509,841	21-Jan-2003	20-Jan-2018

Assignment for Security - Patents

Note: From CIC acquisition.

Docket No.: EP20-00149
Title: Compression Scheme for Interval Data
Attorney(s): Polster Lieder
Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	12/146,154	25-Jun-2008	7,733,245 B	08-Jun-2010	04-Jul-2028

Docket No.: EP20-00151
Title: Point-To-Point Communications Systems Particularly For Use In Power Distribution System
Attorney(s): Polster Lieder
Inventor(s): Rieken, David

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRO	Completed	61/182,483	29-May-2009		29-May-2010	
United States of America	ORD	Granted	12/613,217	05-Nov-2009	8,401,039	19-Mar-2013	23-May-2031

Docket No.: EP20-00152
Title: Simultaneous Detection of Communications Signals on all Phases of a Multi-Phase Power Distribution Network
Attorney(s): Polster Lieder
Inventor(s): Spencer, Quentin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	12/026951	28-Feb-2012			
United States of America	PRO	Pending	61/447,365	28-Feb-2011		28-Feb-2012	

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United States of America ORD Published 13/407,265 28-Feb-2012

Docket No.: EP20-00153

Title: Transient Detector and Fault Classifier for a Power Distribution System

Attorney(s): Polster Lieder

Inventor(s): Abiprojo, Priotomo; Gregg, Gordon; Rieken, David

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	PRI	Published	US2011/022221	24-Jan-2011			
United States of America	PRI	Granted	12/692,919	25-Jan-2010	8,336,352	25-Dec-2012	25-Jan-2030

Docket No.: EP20-00154

Title: Load Control Apparatus With Peak Reduction In Aggregate

Attorney(s): Senniger Powers

Inventor(s): Fleck, Christopher

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2011/051915	16-Sep-2011			
United States of America	PRO	Pending	61/386,720	27-Sep-2010		27-Sep-2011	
United States of America	ORD	Published	13/233,173	15-Sep-2011			

Docket No.: EP20-00155

Title: Digital Two Way Automatic Communication System (TWACS) Outbound Receiver and Method

Attorney(s): Senniger Powers

Inventor(s): Rieken, David

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
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Assignment for Security - Patents

Patent Cooperation Treaty	ORD	Published	2011/045740	28-Jul-2011
United States of America	PRO	Pending	61/373,589	13-Aug-2010
United States of America	ORD	Published	13/205,355	08-Aug-2011

Docket No.: EP20-00156
Title: Agile Switched-Load Resonating Transmitter For Passband Power Line Communication
Attorney(s): Polster Lieder
Inventor(s): Rieken, David; Langenberg, Daniel

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	US11/47525	12-Aug-2011			
United States of America	PRO	Pending	61/373,586	13-Aug-2010		13-Aug-2011	
United States of America	ORD	Published	13/816,386	11-Feb-2013			

Docket No.: EP20-00157
Title: Mains-Synchronous Power-Line Communications System and Method
Attorney(s): Senniger Powers
Inventor(s): Rieken, David

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2011/062510	30-Nov-2011			
United States of America	PRO	Pending	61/442,956	15-Feb-2011		15-Feb-2012	
United States of America	PCT	Published	13/988,461	02-Jul-2013			

Assignment for Security - Patents

Docket No.: EP20-00158
Title: Utility Electric Meter Web Server
Attorney(s): Polster Lieder
Inventor(s): Langenberg, Daniel; Fleck, Christopher; Steidtmann, David

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	12/020763	10-Jan-2012			
United States of America	PRO	Pending	61/437,094	28-Jan-2011		28-Jan-2012	
United States of America	ORD	Published	13/347,242	10-Jan-2012			

Docket No.: EP20-00159
Title: Device, and Associated Method, for Monitoring a Meter
Attorney(s): Scheef & Stone
Inventor(s): Verdell Whitson, Ovie

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	CIP	Granted	12/105,258	17-Apr-2008			
United States of America	CON	Pending	13/407,595	28-Feb-2012	8,126,665	28-Feb-2012	28-Mar-2025

Docket No.: EP20-00161
Title: TWACS Transmitter and Receiver
Attorney(s): Senniger Powers

Inventor(s): Rieken, David; Hessling, Jr., John B

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRO	Pending	61/885,296	01-Oct-2013		01-Oct-2014	

Docket No.: EP20-00167
Title: Demand Response System With Field Area Network Gateway
Attorney(s): Senniger Powers
Inventor(s): Haynes, David D

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRO	Pending	61/837,443	20-Jun-2013		20-Jun-2014	

Docket No.: EP23-00002
Title: Apparatus for Communicating Utility Usage-Related Information from a Utility Usage Location to a Utility Usage
Attorney(s):
Inventor(s): Sears, Lawrence M.

Country	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date	
United States of America	CON	Granted	547,408	24-Oct-1995	5,617,084	01-Apr-1997	10-Sep-2013

Docket No.: EP23-00003
Title: Utility Meter Reading System
Attorney(s):
Inventor(s): Sears, Lawrence M.

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	644,501	10-May-1996	5,719,564	17-Feb-1998	10-May-2016

Docket No.: EP23-00004
Title: Meter Transmission Unit for use with a Pit Set Utility Meter
Attorney(s):
Inventor(s): Sears, Lawrence M.

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	PRI	Granted	09/059,323	13-Apr-1998	6,072,405	06-Jun-2000	13-Apr-2018

Docket No.: EP23-00005
Title: Wireless Broadband Communications Network for a Utility
Attorney(s): Polster Lieder
Inventor(s): Smith, Ronald; Thompson, Mark

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Pending	19-Feb-2010				
United States of America	PRI	Pending	61/154,037	20-Feb-2009			
United States of America	ORD	Granted	12/709,913	22-Feb-2010	8,441,372	14-May-2013	16-Aug-2031

Docket No.: EP23-00007
Title: Planar Dipole Antenna
Attorney(s): Brinks Gilson

Inventor(s): Wilbur, Mark; Pollock, James; Hennigan, Justin

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
United States of America	ORD	Granted	12/832,332	08-Jul-2010	8,427,337	23-Apr-2013	08-Jul-2030

Docket No.: EP23-00008

Title: Random Number Generator

Attorney(s): Brinks Gilson

Inventor(s): Emelko, Glenn A; Gillooly, Gregory B.

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2010/057245	18-Nov-2010			
United States of America	PRO	Pending	61/264,625	25-Nov-2009		25-Nov-2010	
United States of America	ORD	Published	13/511,405	26-Sep-2012			

Docket No.: EP23-00009

Title: Cryptographically Secure Authentication Device, System and Method

Attorney(s): Senniger Powers

Inventor(s): Emelko, Glenn A

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration Date
Patent Cooperation Treaty	ORD	Published	US2010/057054	17-Nov-2010			
United States of America	PCT	Published	13/512,095	25-May-2012			
United States of America	CON	Pending	14/156,765	16-Jan-2014			

PATENT

REEL: 039880 FRAME: 0939

Patents and applications from Metrum asset acquisition

Country	Application No.	Patent No.	Filing Date	Inventor	Title	Status
US		8,126,665	4/17/2008	Whitson	Device, and Associated Method, for Monitoring a Meter	Granted
US	60/556,619		3/26/2004	Whitson	Device, and Associated Method, for Monitoring a Meter	Abandoned
US	11/092,287		3/28/2005	Whitson	Device, and Associated Method, for Monitoring a Meter	Abandoned
US	13/407,595		2/28/2012	Whitson	Device, and Associated Method, for Monitoring a Meter	Pending
US	61/788,957		3/15/2013	Whitson	Device, and Associated Method, for Communication	Pending

Note: These items are jointly owned with Metrum Technologies, LLC pursuant to a certain Patent Co-ownership and License Agreement dated December 31, 2012. Provisional application 61/788,957 will be automatically abandoned on March 16, 2014. A non-provisional application claiming priority to the provisional may be filed before then.

Emelko patents (pre-Aclara employment):

Docket No.: EP14-000002
Title: System For Encoding Base N Data Using a Multi-Level Coding Scheme
Attorney(s):
Inventor(s): Emelko, Glenn A

Country	Case Type	Status	Application Number	Filing Date	Patent Number	Issue Date	Expiration
United States of America	PRI	Granted	08/767,371	16-Dec-1996	5,903,231	11-May-1999	16-Dec-2016
United States of America	CIP	Granted	08/898,314	22-Jul-1997	6,122,010	19-Sep-2000	16-Dec-2016

Note: Glenn Emelko has a right to repurchase these patents under certain circumstances per the Agreement for Sale of Patents of January 25, 2008.

SCHEDULE I

TO

PATENT SECURITY AGREEMENT

Patents

Patent Number	Filing Suffix	Filing Country Code	Application Number	Application Date	Patent Number	Issue Date	Expiration Date	Adjusted Expiration Date	Designated States (if applicable)	Pending actions in next 120 days
55361		S	858823	10/2/2004	6265532	9/4/2007	9/4/2027		--	NA
55361		H	1-2005-000273	6/1/2005	1-2005-000273	8/27/2010	6/1/2025		--	NA
20392		S	11/893170	8/14/2007	7693670	4/6/2010	6/6/2028	3/30/2029	--	NA
20392		N	200810145982.8	8/14/2008	200810145982.8	10/10/2012	8/14/2028		--	NA
20392		P	08161952.0	8/6/2008					CH, DE, GB	NA
34611		S	12/345702	1/2/2008	8143879 B2	3/27/2012	1/2/2028		--	NA
34611		N	200911000154.6	1/2/2009					--	-4NOV15 Request for Reexamination (agent has been instructed to file)
34611		P	09178807.5	1/2/11/2009					states not yet designated	
34611		P	2009296943	1/2/28/2009	5675091	1/9/2015	1/2/28/2029		--	NA

PATENT

REEL: 039880 FRAME: 0942

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Disig nated States (if applicable)	Pending actions in next 120 days
37094		S	071748 13/	/25/2011	818742 8	/26/2014 8	/25/2031 3	1/12/2032 1	--	NA
37094		N	1210093492. 4	/23/2012			/23/2032 3		--	-Office Action response due 8NOV15 (instructions sent to agent)
37094		P	161113.1 12	/23/2012			/23/2032 3		states not yet designated	NA
37094		N	1/DEL/2012 69	/12/2012					--	NA
37094		R	20120029231 10	/22/2012					--	NA
41483		S	614100 12/	1/6/2009	800890 7	/21/2010 9	1/6/2029 1		--	NA
41825		S	893038 12/	/29/2010	331082 8	2/11/2012 1	/29/2030 9		--	NA
41825		U	11226800 20	/21/2011	011226800 2	2/12/2013 1	/21/2031 9		--	NA
41825		R	104461-6 PI1	/12/2011			/12/2031 9		--	NA
41825		A	52340 27	/15/2011					--	NA
41825		P	11-210066 20	/27/2011	039227 5	/13/2012 7	/27/2031 9		--	NA
41825		Z	5320 59	/21/2011	95320 5	/30/2013 7	/21/2031 9		--	NA
									--	NA

PATENT

REEL: 039880 FRAME: 0943

Assignment for Security - Patents

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
42106		P	11-106764	/12/2011	778979	/17/2015	/12/2031			
42106		U	11202161	/10/2011	5		/10/2031	5	--	-office action due 4JUN16
42106		R	102305-8 PI1	/6/2011	5		/6/2031	5	--	NA
42106		A	39195	/5/2011	5		/5/2031	5	--	NA
42106		P	166233.4	/16/2011	5		/16/2031	5	states not yet designated	NA
42106		Z	2756	/10/2011	5	3 /22/2013	/10/2031	5	--	NA
43731		S	288019	12/2011	1		1/2/2031	1	--	NA
44572		S	986397	7/2011	1	9 /16/2014	7/2031	1 /10/2032	--	NA
44785		S	029460	17/2011	2	1 /8/2013	17/2031	2	--	NA
44785		U	12200681	6/2012	2	1 /9/2014	6/2032	2	--	renewal fee due 6FEB16
44785		R	2012003530- 8	16/2012	2				--	NA
44785		A	67678	9/2012	2	3 /25/2014	9/2032	2	--	maintenance fee due 9FEB16
44785		P	153976.1	6/2012	2	9 /25/2013	6/2032	2	AT, CH, DE, ES, FR, GB, IT, NL,	NA

PATENT

REEL: 039880 FRAME: 0944

Assignment for Security - Patents

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Disig nated States (if applicable)	Pending actions in next 120 days
									PL	
44785		P	20 12-030024	2 /15/2012					--	NA
44785		Z	59 8043	2 /6/2012	5 98043	1 2/3/2013	2 /6/2032		--	renewal fee due 7FEB16
44785		T	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	NA
44785		E	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	0	B	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	1	H	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	2	S	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	3	L	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	4	L	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	5	R	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
44785	6	T	12 153976.1	2 /6/2012	2 489985	9 /25/2013	2 /6/2032		--	next annuity due 6FEB16
45304		U	20 12200188	1 /12/2012					--	next annuity due 12JAN16

PATENT

REEL: 039880 FRAME: 0945

Assignment for Security - Patents

ocket	iling Suffix	iling Country Code	Ap- plication Number	A- pplication Date	P- atent Number	I- ssue Date	E- xpiration Date	A- djusted Expiration Date	Desig- nated States (if applicable)	Pending actions in next 120 days
45304	2	R	BR 10201200074 60	1 /12/2012					--	next annuity due 12JAN'16
45304	2	A	27 63885	1 /11/2012					--	next maintenance fee due 11JAN'16
45304	2	P	20 12-002932	1 /11/2012					--	office action due 27JAN'16
45304	2	Z	59 7568	1 /12/2012	5 97568	1 0/30/2013	1 /12/2032		--	next annuity due 12JAN'16
46189	2	S	13/ 192001	7 /27/2011	8 667261	3 /4/2014			--	NA
46189	2	U	20 12207024	7 /25/2012					--	NA
46189	2	A	27 83434	7 /19/2012					--	NA
46189	2	Z	60 1461	7 /25/2012	6 01461	5 /1/2014			--	-next renewal due 12JAN'16
46491	2	S	13/ 047596	3 /14/2011	8 880365	1 1/4/2014	3 /14/2031	6 /4/2031	--	NA
46491	2	N	20 1210078532. 8	3 /13/2012			3 /13/2032		--	NA
46491	2	P	12 158928.7	3 /9/2012			3 /9/2032		states not yet designated	NA
46491	2	N	56 0/DEL/2012	2 /29/2012					--	NA

PATENT

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
46491	2	P	12-051108	3 /8/2012					--	NA
46513	2	S	105273	5 /11/2011	8 812979	8 /19/2014	5 /11/2031	3 /1/2033	--	NA
46513	2	P	167386.7	5 /9/2012			5 /9/2032		states not yet designated	NA
46513	2	P	12-108084	5 /10/2012					--	NA
46532	2	S	093474	4 /25/2011	8 783464	7 /22/2014	4 /25/2031	8 /7/2032	--	NA
46532	2	P	164825.7	4 /19/2012			4 /19/2032		states not yet designated	-Rule 71(3) due 15JAN16
46532	2	P	12-095189	4 /19/2012					--	NA
46671	2	S	005826	1 /13/2011	9 057626	6 /16/2015	1 /13/2031	9 /24/2032	--	NA
46671	2	U	12200231	1 /13/2012					--	next annuity due 13JAN16
46671	2	R	12000747 9	1 /12/2012					--	next annuity due 12JAN15
46671	2	A	63878	1 /12/2012					--	next maintenance fee due 12JAN16
46671	2	P	150844.4	1 /11/2012			1 /11/2032		states not yet designated	next annuity due 11JAN16

PATENT

REEL: 039880 FRAME: 0947

Assignment for Security - Patents

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
46671	2	P	20 12-002934	1/11/2012	1				--	NA
46671	2	Z	59 7568	1/13/2012	5 97568	1 0/30/2013	1 1/13/2032		--	next renewal due 13JAN16
47108	2	S	12/ 984260	1/4/2011	8 635036	1 1/21/2014	1 4/4/2031	1 1/16/2032	--	NA
47108	2	U	20 12200060	1/4/2012	1				--	next renewal fee due 4JAN16
47108	2	R	10 20120000596	1/3/2012	1		1 1/3/2032		--	NA
47108	2	A	27 62769	1/2/2011	1				--	next maintenance fee due 29DEC15
47108	2	P	11 195343.6	1/2/2011	1		1 2/22/2031		states not yet designated	next annuity due 22DEC15
47108	2	P	20 11-285345	1/2/2011	1				--	office action due 20JAN16
47108	2	Z	59 7431	1/4/2012	5 97431	1 0/30/2013	1 4/4/2032		--	next renewal due 14JAN16
47351	2	S	12/ 948986	1/18/2010	8 688407	4 1/1/2014	1 1/18/2030	1 1/28/2031	--	NA
47351	2	U	20 11250808	1/16/2011	1				--	next renewal due 16NOV15
47351	2	R	PI1 1048310	1/16/2011	1				--	next annuity due 16NOV15
47351	2	A	27 57886	1/10/2011	1				--	next maintenance fee due 10NOV15

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PATENT

REEL: 039880 FRAME: 0948

ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
47351	2	P	189260.0 11	1/15/2011	1				not yet designated	next maintenance fee due 10NOV15
47351	2	P	11-248143 20	1/14/2011	1				--	office action due 6JAN16
47351	2	Z	6475 59	1/16/2011	5	9 /3/2013	1 1/16/2031		--	next renewal fee due 16NOV15
47935	2	S	074399 13/	2/29/2011	8	1 1/19/2013	3 2/29/2031	4 /13/2032	--	NA
47935	2	U	12201828 20	2/28/2012	3		3 2/28/2032		--	NA
47935	2	R	BR 10201200693 7-7	2/28/2012	3		3 2/28/2032		--	NA
47935	2	A	72331 27	2/22/2012	3				--	NA
47935	2	P	161900.1 12	2/28/2012	2	2 2/26/2014	3 2/28/2032		DE, ES, FR, GB, PL	NA
47935	2	P	12-072832 20	2/28/2012	3		3 2/28/2032		--	NA
47935	2	Z	9079 59	2/28/2012	5	1 2/28/2014	3 2/28/2032		--	NA
47935	2	E	161900.1 12	2/28/2012	2	2 2/26/2014	3 2/28/2032		--	NA
47935	2	B	161900.1 12	2/28/2012	2	2 2/26/2014	3 2/28/2032		--	NA

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ocket	Filing Suffix	Filing Country Code	App. Number	App. Date	Patent Number	Issue Date	Expiration Date	Adjusted Expiration Date	Designated States (if applicable)	Pending actions in next 120 days
47935	0	R	161900.1	12/28/2012	505967	2/26/2014	2/28/2032	3	--	NA
47935	1	S	161900.1	12/28/2012	505967	2/26/2014	2/28/2032	3	--	NA
47935	2	L	161900.1	12/28/2012	505967	2/26/2014	2/28/2032	3	--	NA
48076		N	1020670612.9	2/20/2010	01020670612.9	1/10/2011	2/20/2020	1	--	next annuity due 20DEC15
48101		S	194246	12/29/2011	744789	3/3/2014	2/29/2031	7	--	NA
48101		U	12207000	12/25/2012	012207000	1/10/2015			--	NA
48101		B	13376.5	12/27/2012			2/27/2032	7	--	NA
48236		S	197117	13/3/2011	682604	2/25/2014	2/31-Aug-31	3	--	NA
48236		A	83902	12/26/2012					--	NA
48236		Z	1460	12/25/2012	01460	1/1/2014	5-Jul-32	2	--	NA
48353		S	297612	1/16/2011	003063	7/7/2015	1/16/2031	1	--	NA
48804		S	367202	12/16/2012	670308	1/11/2014	6/2032	2	--	NA
48893		S	014742	12/27/2011	924168	2/30/2014	2/27/2031	1	--	NA

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48893		N	20 1210115705. 9	1 /27/2012			1 /27/2032		--	NA
48893		P	12 152341.9	1 /24/2012			1 /24/2032		states not yet designated	next annuity due 24JAN16
48893		P	20 12-006634	1 /17/2012					--	NA
49421		S	13/ 229038	9 /9/2011	8 829888	9 /9/2014	9 /9/2031	5 /9/2032	--	NA
49453		S	13/ 212818	8 /18/2011	8 872611	1 0/28/2014	8 /18/2031	8 /18/2031	--	NA
49453		U	20 12216261	8 /16/2012					--	NA
49453		R	BR 10201202070 1-0	8 /17/2012			8 /17/2032		--	NA
49453		A	27 85396	8 /9/2012					--	NA
49453		P	12 180314.2	8 /13/2012			8 /13/2032		states not yet designated	NA
49453		P	20 12-177634	8 /10/2012					--	NA
49453		Z	60 1886	8 /16/2012	6 01886	6 /4/2014	8 /16/2032		--	NA
49489		S	13/ 115145	5 /25/2011	8 830083	9 /9/2014	5 /25/2031	4 /20/2033	--	NA

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ocket	Filing Suffix	Filing Country Code	App. Number	App. Date	Patent Number	Issue Date	Expiration Date	Adjusted Expiration Date	Designated States (if applicable)	Pending actions in next 120 days
49489	2	U	A 12203142	5/22/2012					--	NA
49489	2	R	BR 10201201174 95	5/17/2012			5/17/2032		--	NA
49489	2	A	C 76612	5/10/2012					--	NA
49489	2	P	E 168356.9 12	5/16/2012	2 527793	7/30/2015	5/16/2032		states not yet designated	EP National Validation due 30DEC15
49489	2	P	J 12-117209 20	5/23/2012					--	NA
49489	2	Z	N 0147 60	5/22/2012	6 00147	3/21/2014	5/22/2032		--	NA
49506	2	S	U 210499 13/	8/16/2011	8 837101	9/16/2014	8/16/2031	9/8/2032	--	NA
49506	2	U	A 12211433 20	8/8/2012					--	NA
49506	2	R	BR 10201201892 8-3	7/30/2012					--	NA
49506	2	A	C 85367 27	8/9/2012					--	NA
49506	2	P	E 180017.1 12	8/10/2012			8/10/2032		states not yet designated	NA
49506	2	P	J 12-173524 20	8/6/2012					--	NA

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49506		Z	1721	8/2012	6	6	8/2032		--	NA
49833		S	191391	7/26/2011	8	4	7/26/2031		--	NA
49833		A	83290	7/19/2012					--	NA
49833		Z	1462	7/25/2012	6	5	7/25/2032		--	
49909		S	253199	1/5/2011	8	1	0/5/2031	6	--	NA
50028		S	356290	7/23/2012			7/23/2032		--	response to non-final rejection due 2/JAN16
50387		S	231825	1/13/2011			1/13/2031		--	NA
50630		S	224208	1/1/2011	8	8	1/1/2031	1	--	NA
50703		S	275121	0/17/2011	8	6	0/17/2031	1	--	NA
51071		S	277846	0/20/2011	8	2	0/20/2031	6	--	NA
51071		S	103287	2/11/2013	9	5	0/20/2031	1	--	NA
51228		S	227199	7/7/2011	8	2	7/7/2031	1	--	NA
51410		S	345335	6/6/2012			6/6/2032	1	--	NA

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ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
51412		A	39557	1/16/2014			1/16/2034		--	NA
51412		P	151479.4	1/16/2014			1/16/2034		states not yet designated	-office action due 9NOV15 -next annuity due 16JAN16
51412		P	14-008184	1/21/2014			1/21/2034		--	NA
51412		U	14200197	1/14/2014			1/14/2034		--	NA
51446		S	228924	9/9/2011	912807	2/16/2014	9/9/2031	8/8/2032	--	NA
51446		N	1210328043.3	7/7/2012			7/7/2032		--	NA
51446		P	183612.6	7/7/2012					states not yet designated	NA
51446		P	12-192742	3/3/2012					--	NA
51456		S	228968	9/9/2011			9/9/2031		--	NA
51456		N	1210329021.9	7/7/2012			7/7/2032		--	NA
51456		P	183613.4	7/7/2012					states not yet designated	NA
51456		P	12-192741	3/3/2012					--	NA

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51699		S	670285	1/6/2012			1/6/2032		--	NA
51699		A	31833	1/1/2013			1/1/2033		--	next maintenance fee due 1NOV15
51699		P	190625.7	0/29/2013			0/29/2033		states not yet designated	next annuity due 29OCT15
51699		P	13-229009	1/5/2013			1/5/2033		--	NA
51699		A	13/08282	1/5/2013			1/5/2033		--	NA
51785		S	670280	1/6/2012			1/6/2032		--	-response to non-final rejection due 15DEC15
51785		A	31828	1/1/2013			1/1/2033		--	next maintenance fee due 1NOV15
51785		P	190127.4	0/24/2013			0/24/2033		states not yet designated	NA
51785		A	13/07887	0/22/2013			0/22/2033		--	NA
51785		P	13-229879	1/6/2013			1/6/2033		--	NA
51862		S	230409	1/12/2011	664939	3/4/2014	1/12/2031		--	NA
52656		S	230007	1/12/2011			1/12/2031		--	NA
									--	NA

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ocket	iling Suffix	iling Country Code	Ap- plication Number	Ap- plication Date	P- atent Number	I- ssue Date	E- xpiration Date	A- djusted Expiration Date	Disig- nated States (if applicable)	Pending actions in next 120 days
52656		U	12216543	/30/2012						
52837		S	232196	/14/2011	8	8 /5/2014	9 /14/2031	4 /18/2032	--	NA
53108		S	253531	0/5/2011	8	5 /20/2014	1 0/5/2031	7 /19/2032	--	NA
53821		S	232224	/14/2011	9	4 /21/2015	9 /14/2031	1 0/26/2033	--	NA
53821		S	690500	/20/2015					--	NA
53947		S	419865	/14/2012			3 /14/2032		--	NA
54050		S	267711	0/6/2011	8	3 /31/2015	1 0/6/2031	7 /12/2033	--	NA
54050		U	12232950	/28/2012			9 /28/2032		--	NA
54050		R	2012025476- 0	0/5/2012			1 0/5/2032		--	NA
54050		P	187141.2	0/4/2012			1 0/4/2032		states not yet designated	-response to search report due 3DEC15 -request exam 3DEC15
54050		P	12-220937	0/3/2012			1 0/3/2032		--	NA
54050		S	675231	/31/2015			1 0/6/2031		--	NA
54175		S	370880	/10/2012			2 /10/2032		--	-response to non-final rejection due 10NOV15

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ocket	iling Suffix	iling Country Code	Ap- plication Number	A- pplication Date	P- atent Number	I- ssue Date	E- xpiration Date	A- djusted Expiration Date	Disig- nated States (if applicable)	Pending actions in next 120 days
54872	2	S	328742	2/16/2011	1		2/16/2031	1	--	NA
54824	2	S	327006	2/15/2011	8	1/20/2012	2/15/2031	1	--	NA
54826	2	S	327033	2/15/2011	8	2/25/2012	2/15/2031	1	--	NA
54845	2	S	326977	2/15/2011	8	1/15/2013	2/15/2031	1	--	NA
54845	2	U	12211434	8/8/2012	8				--	NA
54845	2	R	BR 10201202069 5-1	1/17/2012	8				--	NA
54845	2	A	85148	9/9/2012	8				--	NA
54845	2	P	12-180005	1/15/2012	8		8		states not yet designated	-request examination by 27NOV15 -respond to search report 27NOV15
54845	2	Z	1722	8/8/2012	6	4/4/2014	8/8/2032	8	--	NA
54845	2	S	711046	2/11/2012	8	7/22/2014	2/15/2031	1	--	NA
56094	2	S	436821	3/30/2012	9	5/5/2015	3/30/2032	3	--	NA

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ocket	iling Suffix	iling Country Code	Ap plication Number	A pplication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Desig nated States (if applicable)	Pending actions in next 120 days
56200	2	S	296188	1/14/2011	8	6 /17/2014	1 1/14/2031	5 /16/2032	--	NA
64236	2	S	841697	1/15/2013	3		3 /15/2033		--	NA
64236	2	A	44970	6/2014	3		3 /6/2034		--	NA
64236	2	P	159340.0	1/13/2014	3		3 /13/2034		states not yet designated	NA
64236	2	P	14-051023	1/14/2014	3		3 /14/2034		--	NA
64236	2	U	14201312	1/10/2014	3		3 /10/2034		--	NA
66285	2	S	152167	1/10/2014	1		1 /10/2034		--	-non final rejection response due 2OCT15 (Final deadline 2JAN16)
66285	2	O	PC T/US2015/01 0747	9/2015	1				states not yet designated	NA
67456	2	S	898290	1/20/2013	5		5 /20/2033		--	NA
67456	2	A	51003	8/2014	5		5 /8/2034		--	NA
67456	2	P	168347.4	1/14/2014	5		5 /14/2034		states not yet designated	NA
67456	2	P	14-096423	8/2014	5		5 /8/2034		--	NA

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67456	2	U	14202571	5/13/2014			5/13/2034		--	NA
68663	2	S	139157	1/23/2013			2/23/2033		--	NA
68663	2	O	PC T/US2014/06 9302	2/9/2014					states not yet designated	
72214	2	S	14/ 175833	2/7/2014			2/7/2034		--	-response to final action due 1NOV15 -notice of appeal/RCE due 1DEC15
72214	2	U	20 15200482	2/2/2015			2/2/2035		--	NA
72214	2	A	28 81256	5/5/2015			5/5/2035		--	NA
72214	2	P	15 154219.8	6/6/2015			6/6/2035		states not yet designated	-request exam by 12FEB2016 -respond to search report 12FEB2016
72214	2	P	20 15-019820	4/4/2015			4/4/2035		--	NA
72214	2	A	20 15/00761	2/2/2015					--	NA
75508	2	S	14/ 454861	8/8/2014			8/8/2034		--	NA
75508	2	A	28 98935	3/30/2015					--	NA
75508	2	X	MX 1A/2015/0102	7/2015					--	NA

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ocket	Filing Suffix	Filing Country Code	Application Number	Application Date	Patent Number	Issue Date	Expiration Date	Adjusted Expiration Date	Designated States (if applicable)	Pending actions in next 120 days
			82							
75508	2	R	10 E 2015018819-6	8 /5/2015					--	NA
75508	2	N	20 C 1510588888. X	8 /7/2015					--	NA
75508	2	P	20 J 15-154666	8 /5/2016					--	NA
75508	2	P	15 E 178311.5	7 /24/2015			7 /24/2035		not yet designated states	NA
75538	2	S	14/ L 447053	7 /30/2014	9 081040	7 /14/2015	9 /9/2031	9 /9/2031	--	NA
75538	2	A		7 /16/2015			7 /16/2035		--	NA
75538	2	X	MX M/A/2015/0102 82	8 /7/2015					--	NA
75538	2	R	10 E 2015018819-6	8 /5/2015					--	NA
75538	2	N	20 C 1510588888. X	8 /7/2015					--	NA
75538	2	P	20 J 15-145410	7 /23/2015			7 /23/2035		--	NA
	2			7			7		not yet designated states	NA

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75538		P	176636.7	/14/2015			/14/2035		designated	
76122		S	600413	/20/2015			/20/2035		--	NA
1ME376	1	H	013	23/1995	3	18/1999	18/2016		--	-next annuity due 19JAN'16
1ME413 X		R	P19 605750-5	1/29/1996	P 196057505	5/2003	1/29/2016		--	-next annuity due 30NOV'15
1ME413 X		A	90905	1/21/1996	2	3/2005	1/21/2016		--	-next annuity due 22NOV'15
1ME413 X		X	96	1/29/1996	1	0/19/1999	1/29/2016		--	-next annuity due 30NOV'15
1ME413 X		H	96- 54899	1/29/1996	9	1/6/2002	1/6/2022		--	-next annuity due 6NOV'15
1ME413 X		W	85 112914	0/22/1996	N 1103403	1/6/1999	1/6/2019		--	NA
1ME413 X	4	S	08/ 564543	1/30/1995	5	3/30/1997	1/30/2015		--	NA
1ME413 X	5	S	08/ 872035	9/1997	5	1/2/1999	9/2017		--	NA
1ME413 X	7	R	96 308666.5	1/29/1996	0	2/21/2009	1/29/2016		--	-next annuity due 29NOV'15

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ocket	File Suffix	iling Country Code	Ap plication Number	Ap plication Date	P atent Number	I ssue Date	E xpiration Date	A djusted Expiration Date	Disig nated States (if applicable)	Pending actions in next 120 days
1ME413 X	8	E	308666.5 96	1/29/1996	9637822.1 6	1/21/2009 1	1/29/2016 1		--	-next annuity due 29NOV15
1ME413 X	9	B	308666.5 96	1/29/1996	777125 0	1/21/2009 1	1/29/2016 1		--	-next annuity due 29NOV15
1ME413 X	0	S	308666.5 96	1/29/1996	777125 0	1/21/2009 1	1/29/2016 1		--	-next annuity due 29NOV15
1ME413 X	1	H	308666.5 96	1/29/1996	777125 0	1/21/2009 1	1/29/2016 1		--	-next annuity due 29NOV15
1ME426		S	564971 08/	1/30/1995	715390 5	1/3/1998 2	1/30/2015 1		--	NA
1ME433		S	857322 08/	1/16/1997	611772 6	1/26/2003 8	1/16/2017 5		--	NA
1ME433		N	800655.3 98	1/11/1998	155832C 1	1/30/2004 6	1/11/2018 5		--	NA
1ME433		X	PA/ a/1999/00066 1	1/15/1999	28416 2	1/10/2005 6	1/11/2018 5		--	NA
1ME433		K	3/98 47	1/14/1998	36246 1	0/13/1999 1	1/16/2017 5		--	NA
1ME441		S	168,370 09/	0/7/1998	304231 6	0/16/2001 1	0/7/2018 1		--	NA

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1ME459		S	606270 09/	29/2000	6 564159	5 /13/2003	5 /13/2023		--	NA
1ME459		A	40731 23	29/2000	2 340731	1 /5/2010	6 /29/2020		--	NA
1ME459		N	0/PCT/2001 15	29/2000	2 17461	3 /26/2008	6 /29/2020		--	NA
1ME459		K	9/2001 11	9/2001	1 37699	1 /7/2003	2 /9/2021		--	next annuity due 9FEB16
1ME472		S	606769 09/	29/2000	6 778920	8 /17/2004	6 /29/2020		--	NA
1ME472		R	006867-5 P10	29/2000	P 10006867-5	2 /25/2014	2 /25/2024		--	NA
1ME472		A	40886 23	29/2000	2 340886	5 /10/2011	6 /29/2020		--	NA
1ME472		N	8/DEL/2001 10	29/2000	2 46017	2 /9/2011	6 /29/2020		--	NA
1ME490		S	606881 09/	29/2000	6 459258	1 0/1/2002	1 0/1/2022		--	NA
1ME490		R	006930-2 P10	29/2000	6				--	NA

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ocket	File No	Country Code	Ap- plication Number	Ap- plication Date	Pat- ent Number	Issue Date	Ex- piration Date	Adjusted Expiration Date	Disig- nated States (if applicable)	Pending actions in next 120 days
1ME490	1	A	40730 23	6/29/2000	340730 2	1/17/2009 1	2/29/2020 6		--	NA
1ME490	1	K	89/ 2001	2/1/2001	37676 1	2/30/2002 1	1/1/2021 2		--	-next annuity due 1FEB16
1ME490	1	R	00 946918.0	6/29/2000	108217 1	3/3/2009 6	2/29/2020 6		--	NA
1ME490	1	E	00 946918.0	6/29/2000	0042309.3 6	3/3/2009 6	2/29/2020 6		--	NA
1ME491	1	A	23 54312	2/27/2001	354312 2	1/2/2011 7	2/27/2021 7		--	NA
1ME491	1	S	09/ 682144	2/26/2001	823273 6	1/23/2004 1	1/23/2024 1		--	-next matinenace fee due 24NOV15
D23018	F	H	253 50	4/4/1995 4	0253 5	5/5/2001 3	5/5/2018 3		--	NA
D25755	F	A	22 79802	6/6/1999 8	279802 2	9/9/2010 2	6/6/2019 8		--	NA
D25755	F	S	09/ 826792	5/5/2001 4	816360 6	1/9/2004 1	1/4/2018 8	4/15/2020	--	next maintenance fee due 9NOV15

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ocket	Filing Suffix	Filing Country Code	Appplication Number	Appplication Date	Patent Number	Issue Date	Expiration Date	Adjusted Expiration Date	Designated States (if applicable)	Pending actions in next 120 days
D25755	1	S	913100 10/	8/6/2004	548223 7	6/16/2009	8/14/2018	1/21/2020	--	NA
D25755	2	S	499961 11/	7/7/2006	652526 7	1/26/2010	8/10/2018	4/12/2020	--	NA