

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT7055027

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	FIRST LIEN PATENT SECURITY AGREEMENT RELEASE
CONVEYING PARTY DATA	
Name	Execution Date
BANK OF AMERICA, N.A.	12/01/2021
RECEIVING PARTY DATA	
Name:	NEUSTAR, INC.
Street Address:	21575 RIDGETOP CIRCLE
City:	STERLING
State/Country:	VIRGINIA
Postal Code:	20166
Name:	MARKETSHARE PARTNERS LLC
Street Address:	21575 RIDGETOP CIRCLE
City:	STERLING
State/Country:	VIRGINIA
Postal Code:	20166
Name:	AGGREGATE KNOWLEDGE, INC.
Street Address:	21575 RIDGETOP CIRCLE
City:	STERLING
State/Country:	VIRGINIA
Postal Code:	20166
Name:	NEUSTAR INFORMATION SERVICES, INC.
Street Address:	21575 RIDGETOP CIRCLE
City:	STERLING
State/Country:	VIRGINIA
Postal Code:	20166
Name:	NEUSTAR IP INTELLIGENCE, INC.
Street Address:	21575 RIDGETOP CIRCLE
City:	STERLING
State/Country:	VIRGINIA
Postal Code:	20166
PROPERTY NUMBERS Total: 108	

Property Type	Number
Application Number:	15063363
Application Number:	15295994
Application Number:	15166771
Application Number:	15155264
Application Number:	14967937
Application Number:	14965857
Application Number:	14922486
Application Number:	14808458
Application Number:	14705744
Application Number:	14688184
Application Number:	14687635
Application Number:	14678800
Application Number:	14678793
Application Number:	14659440
Application Number:	14642680
Application Number:	14543613
Application Number:	14535109
Application Number:	14534443
Application Number:	15463107
Application Number:	14494761
Application Number:	14336570
Application Number:	14321495
Application Number:	13948976
Application Number:	13942266
Application Number:	15463152
Application Number:	13899241
Application Number:	13837785
Application Number:	15422362
Application Number:	13834873
Application Number:	13796820
Application Number:	13784710
Application Number:	15613606
Application Number:	14025476
Application Number:	14025157
Application Number:	14104905
Application Number:	13551037
Application Number:	13544871
Application Number:	13484182

Property Type	Number
Application Number:	13465891
Application Number:	13442759
Application Number:	13349987
Application Number:	13085323
Application Number:	13336527
Application Number:	13309860
Application Number:	13302861
Application Number:	13297531
Application Number:	13235219
Application Number:	13221507
Application Number:	15374354
Application Number:	13215939
Application Number:	13192686
Application Number:	12975012
Application Number:	12942213
Application Number:	12908287
Application Number:	12902619
Application Number:	12823899
Application Number:	12705268
Application Number:	15487178
Application Number:	12609440
Application Number:	12509622
Application Number:	15408305
Application Number:	12008181
Application Number:	12072454
Application Number:	15347694
Application Number:	15347710
Application Number:	12274154
Application Number:	12237144
Application Number:	15478011
Application Number:	12215960
Application Number:	12214511
Application Number:	12198573
Application Number:	12163659
Application Number:	11948771
Application Number:	11935598
Application Number:	11855745
Application Number:	11840859

Property Type	Number
Application Number:	11778006
Application Number:	11768433
Application Number:	11690289
Application Number:	11673485
Application Number:	11613984
Application Number:	11537740
Application Number:	11462167
Application Number:	11369562
Application Number:	11073149
Application Number:	11142890
Application Number:	11142889
Application Number:	11136086
Application Number:	10828638
Application Number:	10732147
Application Number:	10686135
Application Number:	10686102
Application Number:	10685991
Application Number:	10685692
Application Number:	10665076
Application Number:	10082669
Application Number:	09825675
Application Number:	09690661
Application Number:	09678752
Application Number:	09596024
Application Number:	09477181
Application Number:	09211475
Application Number:	09162187
Application Number:	09162186
Application Number:	09100567
Application Number:	08939023
Application Number:	08907323
Application Number:	08906751

CORRESPONDENCE DATA

Fax Number: (650)838-5109

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ATTORNEY DOCKET NUMBER: 37051-109

NAME OF SUBMITTER: SOPHIE ZANDER

SIGNATURE: /SOPHIE ZANDER/

DATE SIGNED: 12/03/2021

Total Attachments: 15

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PATENT SECURITY AGREEMENT RELEASE

This PATENT SECURITY AGREEMENT RELEASE (this "Release"), dated December 1, 2021, is made by and between NEUSTAR, INC., a Delaware corporation, MARKETSHARE PARTNERS LLC, a Delaware limited liability company, AGGREGATE KNOWLEDGE, INC., a Delaware corporation, NEUSTAR INFORMATION SERVICES, INC., a Delaware corporation, and NEUSTAR IP INTELLIGENCE, INC., a Delaware corporation (collectively, the "Grantors"), and BANK OF AMERICA, N.A., in its capacity as collateral agent (in such capacity, the "Collateral Agent"). All capitalized terms used herein and not otherwise defined shall have the meaning assigned to such terms in the Security Agreement or Patent Security Agreement (each as defined below).

WHEREAS, the Grantors are party to that certain Security Agreement dated as of August 8, 2017 (as amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), by and among the Grantors, the other grantors party thereto, and the Collateral Agent;

WHEREAS, under the terms of the Security Agreement, the Grantors have granted to the Collateral Agent, a security interest in, among other property, all Patent Collateral of the Grantors, and agreed as a condition thereof to execute that certain Patent Security Agreement, dated as of August 8, 2017, by and between the Grantors and the Collateral Agent (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Patent Security Agreement"), affirming the grant of security interest under the Security Agreement;

WHEREAS, the Patent Security Agreement was recorded with the United States Patent and Trademark Office on August 22, 2017 at Reel 043633 and Frame 0440; and

WHEREAS, the Collateral Agent wishes to release its security interest in and to the Patent Collateral of the Grantors, including the Patents listed on Schedule A hereto that was granted pursuant to the Security Agreement and the Patent Security Agreement.

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

SECTION 1. Release of Grant of Security. The Collateral Agent hereby releases, without any recourse, representation, warranty or other assurance of any kind, its right, title and interest in and to the Patent Collateral of the Grantors, including the Patents listed on Schedule A hereto that was granted to it pursuant to the Security Agreement and the Patent Security Agreement.

SECTION 2. Recordation. The Collateral Agent authorizes and requests, at the Grantors' sole cost and expense, that the United States Patent and Trademark Office and any other applicable government office record this Release.

SECTION 3. Governing Law. THIS RELEASE AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER AND ALL CLAIMS AND CONTROVERSIES ARISING OUT OF THE SUBJECT MATTER HEREOF WHETHER SOUNDING IN CONTRACT LAW, TORT LAW OR OTHERWISE SHALL BE GOVERNED

BY, AND SHALL BE CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO CONFLICTS OF LAW PROVISIONS THAT WOULD RESULT IN THE APPLICATION OF ANY OTHER LAW.

[Signature Page Follows]

IN WITNESS WHEREOF, the Collateral Agent has caused this Release to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

BANK OF AMERICA, N.A.

as Collateral Agent

By: Melissa Mullis

Name: Melissa Mullis

Title: Vice President

SCHEDULE A
U.S. Patent Registrations and Patent Applications

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
FLEXIBLE CACHING OF RESOURCE ORIENTED WEB SERVICES	9602622	03/21/2017	15/063363	03/07/2016	NEUSTAR, INC.	PATENTED
[Unpublished]			15/463152 ¹	03/20/2017	NEUSTAR, INC.	PENDING
COMPUTING DEVICE AND SYSTEM FOR RENDERING CONTACT INFORMATION THAT IS RETRIEVED FROM A NETWORK SERVICE	20170111498	04/20/2017	15/295994	10/17/2016	NEUSTAR, INC.	PENDING
METHOD AND SYSTEM FOR DETECTING NETWORK COMPROMISE	9674222	06/06/2017	2016166771	05/27/2016	NEUSTAR, INC.	PATENTED
[Unpublished]			15/613606 ²	06/05/2017	NEUSTAR, INC.	PENDING
METHODS AND SYSTEMS FOR DEVICE AUTHENTICATION	20160261413	09/08/2016	15/155264	05/16/2016	NEUSTAR, INC.	PENDING
DOMAIN NAME SYSTEM AND METHOD OF OPERATING USING RESTRICTED CHANNELS	20170171206	06/15/2017	14/967937	12/14/2015	NEUSTAR, INC.	PENDING
PRIVACY-AWARE QUERY MANAGEMENT SYSTEM	20170169253	06/15/2017	14/965857	12/10/2015	NEUSTAR, INC.	PENDING
SECURE DOMAIN NAME SYSTEM	9648004	05/09/2017	14/922486	10/26/2015	NEUSTAR, INC.	PATENTED
[Unpublished]			15/478011 ³	04/03/2017	NEUSTAR, INC.	PENDING

1 15/463,152 filed on 03-20-2017 which is Pending claims the benefit of 15/063,363

2 15/613,606 filed on 06-05-2017 which is Pending claims the benefit of 15/166,771

3 15/478,011 filed on 04-03-2017 which is Pending claims the benefit of 14/922,486

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
SYSTEM AND METHOD FOR DELIVERING TEXT MESSAGES TO CALL CENTERS	9521240	12/13/2016	14/808458	07/24/2015	NEUSTAR, INC.	PATENTED
[Unpublished]			15/374354 ⁴	12/09/2016	NEUSTAR, INC.	PENDING
METHODS AND SYSTEMS FOR CACHING DATA USING BEHAVIORAL EVENT CORRELATIONS	20150309935	10/29/2015	14/705744	05/06/2015	AGGREGATE KNOWLEDGE, INC.	PENDING
MULTI-TOUCH ATTRIBUTION MODEL FOR VALUING IMPRESSIONS AND OTHER ONLINE ACTIVITIES	20150220974	08/06/2015	14/688184	04/16/2015	AGGREGATE KNOWLEDGE, INC.	PENDING
METHOD AND SYSTEM TO ASSOCIATE A GEOGRAPHIC LOCATION INFORMATION WITH A NETWORK ADDRESS USING A COMBINATION OF AUTOMATED AND MANUAL PROCESSES	9413712	08/09/2016	14/687635	04/15/2015	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
AUTOMATICALLY PRESCRIBING TOTAL BUDGET FOR MARKETING AND SALES RESOURCES AND ALLOCATION ACROSS SPENDING CATEGORIES	20150356572	12/10/2015	14/678800	04/03/2015	MARKETSHARE PARTNERS LLC	ABANDONED 11/11/2016
[Unpublished]			15/347710 ⁵	11/09/2016	MARKETSHARE PARTNERS LLC	PENDING
AUTOMATICALLY PRESCRIBING TOTAL BUDGET FOR MARKETING AND SALES RESOURCES AND ALLOCATION ACROSS SPENDING CATEGORIES	20150356598	12/10/2015	14/678793	04/03/2015	MARKETSHARE PARTNERS LLC	ABANDONED
[Unpublished]			15/347694	11/09/2016	MARKETSHARE PARTNERS LLC	PENDING
AUTOMATICALLY PRESCRIBING TOTAL BUDGET FOR MARKETING	20150294351	10/15/2015	14/659440	03/16/2015	MARKETSHARE PARTNERS LLC	ABANDONED

⁴ 15/374,354 filed on 12-09-2016 which is Pending claims the benefit of 14/808,458

⁵ 15/347,710 filed on 11-09-2016 which is Pending claims the benefit of 14/678,800

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
AND SALES RESOURCES AND ALLOCATION ACROSS SPENDING CATEGORIES						
[Unpublished]			15/408305	01/17/2017	MARKETSHARE PARTNERS LLC	PENDING
SYSTEM AND METHOD FOR SECURE DEVICE AUTHENTICATION	20160269898	09/15/2016	14/642680	03/09/2015	NEUSTAR, INC.	PENDING
UNIFIED MARKETING MODEL BASED ON CONDUIT VARIABLES	20160140577	05/19/2016	14/543613	11/17/2014	MARKETSHARE PARTNERS LLC	PENDING
METHOD AND SYSTEM FOR PREDICTING A GEOGRAPHIC LOCATION OF A NETWORK ENTITY	20160132774	05/12/2016	14/535109	11/06/2014	NEUSTAR, INC.	PENDING
SYSTEM AND METHOD FOR FACILITATING ROUTING	9602616	03/21/2017	14/534443	11/06/2014	NEUSTAR, INC.	PATENTED
[Unpublished]			15/463107	03/20/2017	NEUSTAR, INC.	PENDING
METHOD AND APPARATUS AND COMPUTER READABLE MEDIUM FOR COMPUTING STRING SIMILARITY METRIC	20150186502	07/02/2015	14/494761	09/24/2014	NEUSTAR, INC.	PENDING
SYSTEM AND METHOD FOR IMPLEMENTING A LEARNING MODEL FOR PREDICTING THE GEOGRAPHIC LOCATION OF AN INTERNET PROTOCOL ADDRESS	9280750	03/08/2016	14/336570	07/21/2014	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD AND SYSTEM FOR FULLY ENCRYPTED REPOSITORY	20150088754	03/26/2015	14/321495	07/01/2014	NEUSTAR, INC.	PENDING
METHODS, SYSTEMS, AND APPARATUS FOR LEARNING A MODEL FOR PREDICTING CHARACTERISTICS OF A USER	9390379	07/12/2016	13/948976	07/23/2013	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD, APPARATUS, AND COMPUTER READABLE MEDIUM FOR FLEXIBLE CACHING OF RESOURCE ORIENTED WEB SERVICES	9282160	03/08/2016	13/942266	07/15/2013	NEUSTAR, INC.	PATENTED

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
[Unpublished]	20130392223	12/12/2013	13/899241	05/21/2013	NEUSTAR, INC. MARKETSHARE PARTNERS LLC	PENDING
AUTOMATED SPECIFICATION, ESTIMATION, DISCOVERY OF CAUSAL DRIVERS AND MARKET RESPONSE ELASTICITIES OR LIFT FACTORS	20140278622	09/18/2014	13/837785	03/15/2013	MARKETSHARE PARTNERS LLC	ABANDONED
ITERATIVE PROCESS FOR LARGE SCALE MARKETING SPEND OPTIMIZATION	[Unpublished]		15/422362 ⁷	02/01/2017	MARKETSHARE PARTNERS LLC	PENDING
[Unpublished]	9390386	07/12/2016	13/834873	03/15/2013	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHODS, SYSTEMS, AND APPARATUS FOR PREDICTING CHARACTERISTICS OF A USER	20130246272	09/19/2013	13/796820	03/12/2013	NEUSTAR, INC.	ABANDONED
SECURE MOBILE TRANSACTIONS	9356942	05/31/2016	13/784710	03/04/2013	NEUSTAR, INC.	PATENTED
METHOD AND SYSTEM FOR DETECTING NETWORK COMPROMISE	[Unpublished]		15/613606 ⁸	06/05/2017	NEUSTAR, INC.	PENDING
METHOD AND SYSTEM FOR PERFORMING QUERY PROCESSING IN A KEY-VALUE STORE	20150074084	03/12/2015	14/025476	09/12/2013	NEUSTAR, INC.	PENDING
METHOD AND SYSTEM FOR PERFORMING TRANSACTIONAL UPDATES IN A KEY-VALUE STORE	20150074071	03/12/2015	14/25157	09/12/2013	NEUSTAR, INC.	PENDING
METHODS AND SYSTEMS FOR CACHING DATA USING BEHAVIORAL EVENT CORRELATIONS	9058279	06/16/2015	14/104905	12/12/2013	AGGREGATE KNOWLEDGE, INC.	PATENTED
SYSTEM AND METHOD FOR SHARING WEB PERFORMANCE DATA	20120284402	11/08/2012	13/551037	07/17/2012	NEUSTAR, INC.	ABANDONED

6 15/463,152 filed on 03-20-2017 which is Pending claims the benefit of 13/942,266

7 15/422,362 filed on 02-01-2017 which is Pending claims the benefit of 13/837,785

8 15/613,606 filed on 06-05-2017 which is Pending claims the benefit of 13/784,710

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
AUTOMATED SPECIFICATION, ESTIMATION, DISCOVERY OF CAUSAL DRIVERS AND MARKET RESPONSE ELASTICITIES OR LIFT FACTORS	8468045	06/18/2013	13/544871	07/09/2012	MARKETSHARE PARTNERS LLC	PATENTED
SYSTEM AND METHOD FOR THE DYNAMIC GENERATION OF CORRELATION SCORES BETWEEN ARBITRARY OBJECTS	8489619	07/16/2013	13/484182	05/30/2012	AGGREGATE KNOWLEDGE, INC.	PATENTED
SYSTEM AND METHOD FOR COUNTING AND STORING EVENTS AS SCALAR QUANTITIES IN SKEWED COUNTING ENVIRONMENTS	8725779	05/13/2014	13/465891	05/07/2012	AGGREGATE KNOWLEDGE, INC.	PATENTED
MULTI-TOUCH ATTRIBUTION MODEL FOR VALUING IMPRESSIONS AND OTHER ONLINE ACTIVITIES	9037483	05/19/2015	13/442759	04/09/2012	AGGREGATE KNOWLEDGE, INC.	PATENTED
METHOD AND APPARATUS FOR IMPLEMENTING A LEARNING MODEL FOR FACILITATING ANSWERING A QUERY ON A DATABASE	8874615	10/28/2014	13/2349987	01/13/2012	NEUSTAR IP INTELLIGENCE, INC. ⁹	PATENTED
SYSTEM AND METHOD FOR SHARING WEB PERFORMANCE MONITORING DATA	8224959	07/17/2012	13/085323	04/12/2011	NEUSTAR, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	8447025	05/21/2013	13/36527	12/23/2011	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
SYSTEM AND METHOD OF MIDDLEBOX DETECTION AND CHARACTERIZATION	8463904	06/11/2013	13/309860	12/02/2011	NEUSTAR IP INTELLIGENCE, INC. ¹⁰	PATENTED
REAL-TIME PROCESS FOR DEFINING, PROCESSING AND DELIVERING A	8565404	10/22/2013	13/302861	11/22/2011	NEUSTAR INFORMATION SERVICES, INC.	PATENTED

⁹ Currently in the name Quova, Inc. (now known as NeuStar IP Intelligence, Inc.)

¹⁰ Currently in the name Quova, Inc. (now known as NeuStar IP Intelligence, Inc.)

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
HIGHLY CUSTOMIZED CONTACT LIST OVER A NETWORK						
METHOD AND APPARATUS FOR FACILITATING ANSWERING A QUERY ON A DATABASE	8965934	02/24/2015	13/297531	11/16/2011	NEUSTAR IP INTELLIGENCE, INC. ¹¹	PATENTED
METHODS AND SYSTEMS FOR CACHING DATA USING BEHAVIORAL EVENT CORRELATIONS	8627013	01/07/2014	13/235219	09/16/2011	AGGREGATE KNOWLEDGE, INC.	PATENTED
SYSTEM AND METHOD FOR DELIVERING SHORT MESSAGE SERVICE TEXT TO CALL CENTERS	9094811	07/28/2015	13/221507	08/30/2011	NEUSTAR, INC.	PATENTED
[Unpublished]			15/374,354 ¹²	12/09/2016	NEUSTAR, INC.	PENDING
SYSTEM AND METHOD FOR OBTAINING AND EXECUTING INSTRUCTIONS FROM A PRIVATE NETWORK	8504610	08/06/2013	13/215939	08/23/2011	NEUSTAR, INC.	PATENTED
SYSTEM AND METHOD FOR IMPLEMENTING A LEARNING MODEL FOR PREDICTING THE GEOGRAPHIC LOCATION OF AN INTERNET PROTOCOL ADDRESS	8788437	07/22/2014	13/192686	07/28/2011	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
ON DEMAND MULTI-LOCATION LARGE DATABASE SYNCHRONIZATION SYSTEM	8429124	04/23/2013	12/975012	12/21/2010	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
SYSTEM AND METHOD FOR THE DYNAMIC GENERATION OF CORRELATION SCORES BETWEEN ARBITRARY OBJECTS	8200677	06/12/2012	12/942213	11/09/2010	AGGREGATE KNOWLEDGE, INC.	PATENTED
SYSTEM AND METHOD FOR MANAGING AN INTERNET DOMAIN BASED ON THE GEOGRAPHIC LOCATION OF AN ACCESSING USER	8838733	09/16/2014	12/908287	10/20/2010	NEUSTAR IP INTELLIGENCE, INC.	PATENTED

¹¹ Currently in the name Quova, Inc. (now known as NeuStar IP Intelligence, Inc.)

¹² 15/374,354 filed on 12-09-2016 which is Pending claims the benefit of 13/221,507

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
ISOLATING LOCAL PERFORMANCE VARIATION IN WEBSITE MONITORING	8370485	02/05/2013	12/902619	10/12/2010	NEUSTAR, INC.	PATENTED
AUTOMATED MOBILE INTELLIGENT COMMUNICATION PROCESSING SYSTEM	8457613	06/04/2013	12/823899	06/25/2010	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
METHOD FOR DISTRIBUTING CONTACT INFORMATION BETWEEN APPLICATIONS	9636053	05/02/2017	12/705268	02/12/2010	NEUSTAR, INC.	PATENTED
[Unpublished]			15/487,178 ¹³	04/13/2017	NEUSTAR, INC.	PENDING
AUTOMATED SPECIFICATION, ESTIMATION, DISCOVERY OF CAUSAL DRIVERS AND MARKET RESPONSE ELASTICITIES OR LIFT FACTORS	8244571	08/14/2012	12/609440	10/30/2009	MARKETSHARE PARTNERS LLC	PATENTED
SYSTEM AND METHOD FOR ASSESSING MOBILE APPLICATION VALUE	8126426	02/28/2012	12/509622	07/27/2009	NEUSTAR, INC.	PATENTED
[Unpublished]			15/408,305 ¹⁴	01/17/2017	MARKETSHARE PARTNERS LLC	PENDING
SYSTEM AND METHOD FOR THE DYNAMIC GENERATION OF CORRELATION SCORES BETWEEN ARBITRARY OBJECTS	7853630	12/14/2010	12/008181	01/08/2008	AGGREGATE KNOWLEDGE	PATENTED
SYSTEM AND METHOD FOR MAINTAINING METADATA CORRECTNESS	20090037431	02/05/2009	12/072454	02/26/2008	AGGREGATE KNOWLEDGE	PENDING
[Unpublished]			15/347694 ¹⁵	11/09/2016	MARKETSHARE PARTNERS LLC	PENDING

¹³ 15/487,178 filed on 04-13-2017 which is Pending claims the benefit of 12/705,268

¹⁴ 15/408,305 filed on 01-17-2017 which is Pending claims the benefit of 12/390,341

¹⁵ 15/347,694 filed on 11-09-2016 which is Pending claims the benefit of 12/051,814

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
[Unpublished]			15/347710 ¹⁶	11/09/2016	MARKETSHARE PARTNERS LLC	PENDING
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	8180041	05/15/2012	12/274154	11/19/2008	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
SECURE DOMAIN NAME SYSTEM	9172713	10/27/2015	12/237144	09/24/2008	NEUSTAR, INC.	PATENTED
[Unpublished]			15/478011 ¹⁷	04/03/2017	NEUSTAR, INC.	PENDING
CLIENT RECOMMENDATION MECHANISM	7904524	03/08/2011	12/215960	06/30/2008	AGGREGATE KNOWLEDGE	PATENTED
METHODS AND SYSTEMS FOR CACHING DATA USING BEHAVIORAL EVENT CORRELATIONS	8032714	10/04/2011	12/214511	06/18/2008	AGGREGATE KNOWLEDGE INC.	PATENTED
AUTOMATED MOBILE INTELLIGENT CALL PROCESSING SYSTEM	8611874	12/17/2013	12/198573	08/26/2008	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
MONITORING WEB SERVICE TRANSACTIONS	8892718	11/18/2014	12/163659	06/27/2008	NEUSTAR, INC.	PATENTED
METHOD AND SYSTEM FOR EVALUATING AND SELECTING TRACEROUTES TO BE USED IN DETERMINING THE GEOGRAPHIC LOCATION OF A NETWORK BLOCK	8055792	11/08/2011	11/948771	11/30/2007	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD AND SYSTEM FOR DETERMINING THE GEOGRAPHIC LOCATION OF A NETWORK BLOCK	9037694	05/19/2015	11/935598	11/06/2007	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
SYSTEM AND METHOD OF MIDDLEBOX DETECTION AND CHARACTERIZATION	8204982	06/19/2012	11/855745	09/14/2007	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
SYSTEM AND METHOD FOR USER IDENTITY PORTABILITY IN COMMUNICATION SYSTEMS	7525930	04/28/2009	11/840859	08/17/2007	NEUSTAR, INC.	PATENTED

¹⁶ 15/347,710 filed on 11-09-2016 which is Pending claims the benefit of 12/325,189

¹⁷ 15/478,011 filed on 04-03-2017 which is Pending claims the benefit of 12/237,144

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
SYSTEM AND METHOD FOR SHORT MESSAGE SERVICE AND INSTANT MESSAGING CONTINUITY	7720082	05/18/2010	11/778006	07/13/2007	NEUSTAR, INC.	PATENTED
SPATIALLY INDEXED GRAMMAR AND METHODS OF USE	8060367	11/15/2011	11/768433	06/26/2007	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
AUTOMATIC ROUTING AND INFORMATION SYSTEM FOR TELEPHONIC SERVICES	8363814	01/29/2013	11/690289	03/23/2007	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
REAL-TIME PROCESS FOR DEFINING, PROCESSING AND DELIVERING A HIGHLY CUSTOMIZED CONTACT LIST OVER A NETWORK	8064586	11/22/2011	11/673485	02/09/2007	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	8085924	12/27/2011	11/613984	12/20/2006	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
SYSTEM AND METHOD FOR OBTAINING AND EXECUTING INSTRUCTIONS FROM A PRIVATE NETWORK	8005690	08/23/2011	11/537740	10/02/2006	NEUSTAR, INC.	PATENTED
AUTOMATED CONCIERGE SYSTEM AND METHOD	8160614	04/17/2012	11/462167	08/03/2006	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
USING CROSS-SITE RELATIONSHIPS TO GENERATE RECOMMENDATIONS	7788358	08/31/2010	11/369562	03/06/2006	AGGREGATE KNOWLEDGE, INC.	PATENTED
GEO-LOCATION AND GEO-COMPLIANCE UTILIZING A CLIENT AGENT	7685279	03/23/2010	11/73149	03/04/2005	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
SYSTEMS AND METHODS FOR ISOLATING LOCAL PERFORMANCE VARIATION IN WEBSITE MONITORING	7546368	06/09/2009	11/142890	06/01/2005	NEUSTAR, INC.	PATENTED
SYSTEMS AND METHODS FOR WEBSITE MONITORING AND LOAD TESTING VIA SIMULATION	7770068	08/03/2010	11/142889	06/01/2005	NEUSTAR, INC.	PATENTED

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
SYSTEM AND METHOD FOR DETERMINING COST OF WEBSITE PERFORMANCE	8423634	04/16/2013	11/136086	05/24/2005	NEUSTAR, INC.	PATENTED
SYSTEM FOR LINKING INFORMATION IN A GLOBAL COMPUTER NETWORK	7167907	01/23/2007	10/828638	04/21/2004	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	7167553	01/23/2007	10/732147	12/09/2003	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
METHOD AND SYSTEM TO COLLECT GEOGRAPHIC LOCATION INFORMATION FOR A NETWORK ADDRESS UTILIZING GEOGRAPHICALLY DISPERSED DATA COLLECTION AGENTS	7809857	10/05/2010	10/686135	10/14/2003	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD AND SYSTEM TO INITIATE GEOLOCATION ACTIVITIES ON DEMAND AND RESPONSIVE TO RECEIPT OF A QUERY	7472172	12/30/2008	10/686102	10/14/2003	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD AND SYSTEM TO MODIFY GEOLOCATION ACTIVITIES BASED ON LOGGED QUERY INFORMATION	7072963	07/04/2006	10/685991	10/14/2003	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
METHOD AND SYSTEM TO ASSOCIATE GEOGRAPHIC LOCATION INFORMATION WITH A NETWORK ADDRESS USING A COMBINATION OF AUTOMATED AND MANUAL PROCESSES	9021080	04/28/2015	10/685692	10/14/2003	NEUSTAR IP INTELLIGENCE, INC.	PATENTED
TEST HARNESS FOR ENTERPRISE APPLICATION INTEGRATION ENVIRONMENT	7337361	02/26/2008	10/665076	09/16/2003	NEUSTAR, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	6661884	12/09/2003	10/082669	02/22/2002	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
METHOD AND APPARATUS FOR ESTIMATING A GEOGRAPHIC LOCATION OF A NETWORKED ENTITY	6684250	01/27/2004	09/825675	04/03/2001	NEUSTAR IP INTELLIGENCE, INC.	PATENTED

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ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	6381324	04/30/2002	09/690661	10/17/2000	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
REAL-TIME PROCESS FOR DEFINING, PROCESSING AND DELIVERING A HIGHLY CUSTOMIZED CONTACT LIST OVER A NETWORK	7243075	07/10/2007	09/678752	10/03/2000	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
SYSTEM AND METHOD FOR LINKING INFORMATION IN A GLOBAL COMPUTER NETWORK	6748426	06/08/2004	09/596024	06/15/2000	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	6185290	02/06/2001	09/477181	01/04/2000	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
ONE NUMBER, INTELLIGENT CALL PROCESSING SYSTEM	6058179	05/02/2000	09/211475	12/14/1998	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
MULTI-DIMENSIONAL PATTERN ANALYSIS	6018734	01/25/2000	09/162187	09/28/1998	AGGREGATE KNOWLEDGE, INC.	PATENTED
VIRTUAL STRUCTURED INFORMATION SYSTEM	5983232	11/09/1999	09/162186	09/28/1998	AGGREGATE KNOWLEDGE, INC.	PATENTED
AUTOMATIC ROUTING AND INFORMATION SYSTEM FOR TELEPHONIC SERVICES	6385312	05/07/2002	09/100567	06/19/1998	NEUSTAR INFORMATION SERVICES, INC.	PATENTED
METHOD OF OPTIMIZING AN N-GRAM MEMORY STRUCTURE	5966709	10/12/1999	08/939023	09/26/1997	AGGREGATE KNOWLEDGE, INC.	PATENTED
SYSTEMS AND METHOD FOR PROVIDING NETWORK ELEMENT MANAGEMENT FUNCTIONALITY FOR MANAGING AND PROVISIONING NETWORK ELEMENTS ASSOCIATED WITH NUMBER PORTABILITY	6122362	09/19/2000	08/907323	08/06/1997	NEUSTAR, INC.	PATENTED
SYSTEMS AND METHODS FOR PROVIDING ORDER AND SERVICE	6169793	01/02/2001	08/906751	08/06/1997	NEUSTAR, INC.	PATENTED

Title	Patent / Publication Number	Publication / Issue Date	Application Number	Application Date	Owner	Status
MEDIATION FOR TELECOMMUNICATIONS SYSTEMS						

PATENT

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