

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
NEC LABORATORIES AMERICA, INC.	01/13/2015
RECEIVING PARTY DATA	
Name:	NEC CORPORATION
Street Address:	7-1, SHIBA 5-CHOME
Internal Address:	MINATO-KU
City:	TOKYO
State/Country:	JAPAN
Postal Code:	108-8001
PROPERTY NUMBERS Total: 152	
Property Type	Number
Patent Number:	8625695
Patent Number:	8643656
Patent Number:	8644180
Patent Number:	8654439
Patent Number:	8654663
Patent Number:	8654722
Patent Number:	8655035
Patent Number:	8660030
Patent Number:	8660077
Patent Number:	8660202
Patent Number:	8660205
Patent Number:	8660598
Patent Number:	8661135
Patent Number:	8682086
Patent Number:	8687527
Patent Number:	8688520
Patent Number:	8688792
Patent Number:	8693890
Patent Number:	8694644

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Property Type	Number
Patent Number:	8699621
Patent Number:	8699625
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Patent Number:	8892857

Property Type	Number
Patent Number:	8893103
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Patent Number:	8918770
Patent Number:	8923239
Patent Number:	8923457
Patent Number:	8923907
Patent Number:	8924787
Patent Number:	8924938

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	2014 PATENT TRANSFER
NAME OF SUBMITTER:	JILL BEHR
SIGNATURE:	/Jill Behr/
DATE SIGNED:	01/13/2015

Total Attachments: 5

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PATENT ASSIGNMENT

WHEREAS, NEC Laboratories America, Inc., a New York corporation, having a place of business at 4 Independence Way, Suite 200, Princeton, New Jersey 08540, is an owner and assignee of record of the patent listed below;

WHEREAS, NEC Corporation, a Japanese corporation, having its principal place of business at 7-1, Shiba 5-chome, Minatu-ku, Tokyo, Japan 108-8001 is desirous of obtaining a title to the patents listed in Table 1 below;

NOW, THEREFORE, for valuable consideration, receipt of which is hereby acknowledged, NEC Laboratories America, Inc., hereby sells, assigns and transfers to NEC Corporation, its successors and assigns, its entire right, title and interest in each of the following United States patents listed below:

Docket #	Title	Patent #	Issue Date	Serial #	Filing Date	Inventor(s)
10030	Feed-Forward Control Signaling and Decoding Schemes	8,625,695	1/7/2014	13/115,162	5/25/2011	Narayan Prasad ; Sampath Rangarajan ; Mohammad Khojastepour
10048	Energy-Aware Task Consolidation on Graphics Processing Unit (GPU)	8,643,656	2/4/2014	13/227,865	9/8/2011	Srimat Chakradhar ; DONG LI ; SURENDRA BYNA
10061	MU-MIMO-OFDMA Methods and Systems for Signaling Multi-Rank CQIs and Precoders	8,644,180	2/4/2014	13/080,403	4/5/2011	Guosen Yue ; Mohammad Khojastepour ; Narayan Prasad ; Sampath Rangarajan ; MEILONG JIANG
10036	Look-Up Table and Digital Transmitter Based Architecture for Fiber Nonlinearity Compensation	8,654,439	2/18/2014	13/081,707	4/7/2011	Ting Wang ; Dayou Qian
09107	MU-MIMO-OFDMA Systems and Methods for Multi-Rank CQI Computation and Precoder Selection	8,654,663	2/18/2014	13/080,374	4/5/2011	Mohammad Khojastepour ; Narayan Prasad ; MEILONG JIANG ; Guosen Yue ; Sampath Rangarajan
09082	Efficient Channel Search with Sequential Probability Ratio Testing	8,654,722	2/18/2014	13/029,675	2/17/2011	YAN XIN ; Guosen Yue
09098	Epithelial Structure Detector and Related Methods	8,655,035	2/18/2014	13/105,399	5/11/2011	Christopher Malon ; Atsushi Marugame ; Eric Cosatto
10025	High Performance and Low Complexity Scheduling Method for Adaptive Resource Usage in OFDMA Wireless Relay Networks	8,660,030	2/25/2014	13/192,878	7/28/2011	Sampath Rangarajan ; Karthikeyan Sundaresan
080908	Method and System for Conveying Scheduling Information of Overlapping Co-Scheduled Users in an OFDMA-MU-MIMO System	8,660,077	2/25/2014	13/296,394	11/15/2011	Sampath Rangarajan ; Narayan Prasad ; MEILONG JIANG ; Xiaodong Wang ; Mohammad Khojastepour
10034	Robust Precoder and Receiver Filter Design for Gaussian Interference Channel	8,660,202	2/25/2014	13/234,945	9/16/2011	Narayan Prasad ; Sampath Rangarajan ; JUBIN JOSE ; Mohammad Khojastepour
11015	Energy Efficient Constellation Method and System	8,660,205	2/25/2014	13/487,246	6/3/2012	LEI XU ; Ivan Djorjdevic ; Ting Wang
09049	Systems and Methods for Prioritizing Beams to Enable Efficient Determination of Suitable Communication Links	8,660,598	2/25/2014	12/941,575	11/8/2010	Sampath Rangarajan ; Narayan Prasad ; KISHORE RAMACHANDRAN
10071	System and Method for Providing a Platform as a Service (PaaS) With a Materialized Shared Space	8,661,135	2/25/2014	13/268,062	10/7/2011	Jagan Sankaranarayanan ; Junichi Tatemura ; Vahit Hacigumus
10013	Systems and Methods for Determining Image Representations at a Pixel Level	8,682,086	3/25/2014	13/109,997	5/18/2011	Kai Yu ; Yuanqing Lin
10029	Low Complexity Link Adaptation for LTE/LTE-A Uplink with Turbo Receiver	8,687,527	4/1/2014	13/234,885	9/16/2011	Sampath Rangarajan ; Guosen Yue ; Narayan Prasad ; MEILONG JIANG
10075	Opportunistic Allocation of Advertisement Delivery with Cellular Basestation Overloads	8,688,520	4/1/2014	13/315,959	12/9/2011	Sampath Rangarajan ; RAVINDRANATH KOKKU ; HONGHAI ZHANG ; Rajesh Mahindra
100078	Methods and Systems for Discovering Configuration Data	8,688,792	4/1/2014	13/102,807	5/6/2011	CHUNXIAO LI ; Guofei Jiang ; Atul Singh
10035	Look-up Table and Digital Transmitter Based Architecture for Fiber Nonlinearity Compensation	8,693,890	4/8/2014	13/081,693	4/7/2011	Ting Wang ; Dayou Qian
11045	Network-Aware Coordination of Virtual Machine Migrations in Enterprise Data Centers and Clouds	8,694,644	4/8/2014	13/485,924	6/1/2012	Haifeng Chen ; Guofei Jiang
10052	Precoding Selection for Retransmission in Uplink MIMO Hybrid ARQ	8,699,621	4/15/2014	13/252,650	10/4/2011	Guosen Yue ; MEILONG JIANG ; Narayan Prasad ; Sampath Rangarajan
10091	Generalized OFDM (GOFDM) for Ultra-High-Speed Serial Optical Transport Networks	8,699,625	4/15/2014	13/270,211	10/10/2011	Ting Wang ; Ivan Djorjdevic ; LEI XU
08086	Optimal DC Bias for IM/DD Optical OFDM System with Iterative Decoding	8,699,640	4/15/2014	12/630,167	12/3/2009	Huy-Dung Han ; Junqiang Hu ; Ting Wang
10121	Adaptive Cross Partition for Learning Weak Classifiers	8,699,752	4/15/2014	13/441,925	4/9/2012	CHANG HUANG
09070A	Method and System for Customizable Flow Management in a Cellular Basestation	8,700,047	4/15/2014	13/732,468	1/2/2013	Sampath Rangarajan ; HONGHAI ZHANG ; Rajesh Mahindra ; RAVINDRANATH KOKKU
10053	MU-MIMO-OFDMA Multi-Rank CQI and Precoder Signaling Schemes	8,705,392	4/22/2014	13/080,416	4/5/2011	Mohammad Khojastepour ; Guosen Yue ; MEILONG JIANG ; Narayan Prasad ; Sampath Rangarajan

10087C	Optical Switching Network	8,705,954	4/22/2014	13/078,980	4/3/2011	YUEPING ZHANG ; KISHORE RAMACHANDRAN ; ANKIT SINGLA ; Atul Singh ; LEI XU
10003	An Applicable CFO Estimator with Low-Complexity and High-Accuracy for CO-OFDM Systems	8,705,956	4/22/2014	13/086,724	4/14/2011	Dayou Qian ; MINGZHENG CAO
10041	K-Alternate Channel Selection Procedure for the Routing, Wavelength Assignment, and Spectrum Allocation in the Flexible Optical WDM Networks	8,705,963	4/22/2014	13/236,460	9/19/2011	Ankitkumar Patel ; Philip Ji
10012	Feature Set Embedding for Incomplete Data	8,706,668	4/22/2014	13/151,480	6/2/2011	Iain Melvin ; DAVID GRANGIER
10077	Scenario-driven Concurrency Bugs: Model and Check	8,707,272	4/22/2014	13/343,361	1/4/2012	Malay Ganai
10031	Embedding Class Hierarchy Into Object Models for Multiple Class Inheritance	8,707,278	4/22/2014	13/251,463	10/3/2011	Franjo Ivancic ; Aarti Gupta ; Gogul Balakrishnan ; JING YANG ; NAOTO MAEDA ; NISHANT SINHA
10089	Multitaper Wideband Spectrum Sensing Systems and Methods	8,717,922	5/6/2014	13/284,442	10/28/2011	Sampath Rangarajan ; KYUNGTAEE KIM ; YAN XIN
08009A	Multi-Resolution Precoding Codebook	8,717,997	5/6/2014	13/439,301	4/4/2012	Mohammad Khojastepour ; Xiaodong Wang
10040	Rate Selection Procedure for Channel Selection in Flexible WDM Networks	8,718,097	5/6/2014	13/234,979	9/16/2011	Ankitkumar Patel ; Philip Ji
09051	Indexing Methods and Systems	8,718,156	5/6/2014	12/940,777	11/5/2010	Mohammad Khojastepour ; Sampath Rangarajan
10064A	Multi-User Multiple Input Multiple Output Wireless Communications	8,718,174	5/6/2014	13/562,738	7/31/2012	Mohammad Khojastepour ; Guosen Yue ; Sampath Rangarajan ; MEILONG JIANG ; Narayan Prasad
10057	Efficient MAC Protocol for OFDMA Passive Optical Networks (PONs)	8,718,473	5/6/2014	13/270,209	10/10/2011	Jingjing Zhang ; Ting Wang
10062	Chromatic Dispersion Compensation Using Sign Operations and Lookup Tables	8,718,474	5/6/2014	13/267,131	10/6/2011	Dayou Qian ; Ting Wang ; Tsutomu Tajima ; Junqiang Hu ; Yoshiaki Aono
07043	Coherent Optical Orthogonal Frequency Division Multiplexing Reception Using Self Optical Carrier Extraction	8,718,490	5/6/2014	12/183,332	7/31/2008	LEI XU ; Ting Wang ; Yutaka Yano ; Junqiang Hu ; Dayou Qian
11080	Systems and Methods for Using Electric Vehicles as Mobile Energy Storage	8,718,850	5/6/2014	13/646,658	10/5/2012	Ratnesh Sharma ; Mohammad Chehrehghani Bozchalu
11001	Four-Dimensional Nonbinary LDPC-Coded Modulation Schemes for Ultra High-Speed Optical Fiber Communication	8,719,656	5/6/2014	13/441,808	4/6/2012	Ivan Djordjevic ; Ting Wang ; Murat Arabaci ; LEI XU
10117	Donut Domains: Efficient Non-Convex Domains for Abstract Interpretation	8,719,790	5/6/2014	13/428,608	3/23/2012	Khalil Ghorbal ; Franjo Ivancic ; Gogul Balakrishnan ; NAOTO MAEDA
10074	Scope Bounding with Automated Specification Inference for Scalable Software Model Checking	8,719,793	5/6/2014	13/314,738	12/8/2011	Aarti Gupta ; Franjo Ivancic ; NAOTO MAEDA ; SRIRAM SANKARANARAYANAN
10046	Interprocedural Exception Method	8,719,802	5/6/2014	13/249,298	9/30/2011	NAOTO MAEDA ; PRAKASH PRABHU ; Gogul Balakrishnan ; Franjo Ivancic ; Aarti Gupta
10079	Resource Allocation in 4G MIMO Cellular Uplink	8,724,573	5/13/2014	13/343,398	1/4/2012	Narayan Prasad ; Guosen Yue ; HONGHAI ZHANG ; MEILONG JIANG ; Sampath Rangarajan
10026	Multicast Video and Data Delivery with Beamforming Antennas in Indoor Wireless Networks	8,724,605	5/13/2014	13/193,657	7/29/2011	HONGHAI ZHANG ; Sampath Rangarajan ; Yuanxi Jiang
10132	Carrier and Subcarrier Hopping for Optical OFDM Security	8,724,998	5/13/2014	13/478,892	5/23/2012	LEI XU ; Dayou Qian ; Ting Wang
10126	POLMUX-OFDM-DD Transmitter and Receiver for Reduced Complexity and Overhead in Optical Access/Metro Transmission	8,724,999	5/13/2014	13/446,206	4/13/2012	Neda Cvijetic ; Ting Wang ; Narayan Prasad ; Yue-Kai Huang
10049	Digital Signal-to-Signal Beat Noise Reduction for Filter-Less Coherent Receiving System	8,725,006	5/13/2014	13/270,210	10/10/2011	Yue-Kai Huang ; Dayou Qian ; Ezra Ip ; Philip Ji ; Tsutomu Tajima ; Yoshiaki Aono
10086	Systems and Methods for Application Dependency Discovery	8,725,871	5/13/2014	13/284,350	10/28/2011	Vishal Singh ; VIGNESH TRICHYRAVI ; Min Ding ; Srimat Chakradhar
10015	System and Methods for Finding Hidden Topics of Documents and Preference Ranking Documents	8,738,547	5/27/2014	13/083,391	4/8/2011	Bing Bai ; Yanjun Qi ; XI CHEN
11006	Multidimensional Hybrid Modulations for Ultra-High-Speed Optical Transport	8,743,984	6/3/2014	13/441,814	4/6/2012	LEI XU ; Ivan Djordjevic ; Ting Wang
06036UA	Quantized Precoding Over a Set of Parallel Channels	8,743,989	6/3/2014	13/524,258	6/15/2012	Mohammad Khojastepour
06036X	Method for Transmitting an Information Sequence	8,743,990	6/3/2014	13/547,372	7/12/2012	Mohammad Khojastepour
06036UB	Method for Transmitting an Information Sequence	8,743,991	6/3/2014	13/547,587	7/12/2012	Mohammad Khojastepour
06036E	Method for Transmitting an Information Sequence	8,750,149	6/10/2014	13/297,627	11/16/2011	Mohammad Khojastepour
10129	Methods for Improving Multiuser MIMO Downlink Transmissions	8,750,358	6/10/2014	13/441,231	4/6/2012	MEILONG JIANG ; Mohammad Khojastepour ; Narayan Prasad ; Sampath Rangarajan ; Guosen Yue
11009A	Enhancements of Download Multi-User Multiple-Input Multiple-Output Wireless Communications	8,761,129	6/24/2014	13/456,845	4/26/2012	Guosen Yue ; Sampath Rangarajan ; Narayan Prasad ; MEILONG JIANG ; Mohammad Khojastepour
11074	Object-Centric Spatial Pooling for Image Classification	8,761,510	6/24/2014	13/676,494	11/14/2012	Kai Yu ; FEI LI ; Olga Russakovsky ; Yuanqing Lin
10055	Coded Multidimensional Pulse Amplitude Modulation for Ultra-High-Speed Optical Transport	8,761,608	6/24/2014	13/251,218	10/1/2011	Ivan Djordjevic ; Ting Wang ; LEI XU

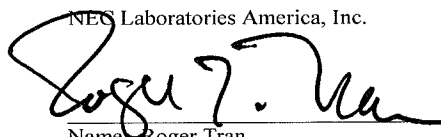
08023	16 Quadrature Amplitude Modulation Optical Signal Transmitter	8,761,612	6/24/2014	12/562,260	9/18/2009	Jianjun Yu ; Ting Wang ; Dayou Qian
10111	Multiple Stage Hybrid Spectrum Sensing Methods and Systems for Cognitive Radio	8,761,677	6/24/2014	13/408,175	2/29/2012	YAN XIN ; KYUNGTAE KIM ; Sampath Rangarajan
11106	Systems and Methods for Stochastically Using Electric Vehicles as Mobile Energy Storage	8,762,189	6/24/2014	13/646,616	10/5/2012	Ratnesh Sharma ; Mohammad Chehreghani Bozchalu
11019	Systems and Methods for Optimizing Microgrid Capacity and Storage Investment Under Environmental Regulations	8,762,196	6/24/2014	13/543,819	7/7/2012	Yanyi He ; Ratnesh Sharma
10092	Replica-based Load Balancing in Multi-tenant Databases	8,762,323	6/24/2014	13/270,218	10/10/2011	Vahit Hacigumus ; Yun Chi ; Wang-Pin Hsiung ; HYUN MOON
11075	Query Specific Fusion for Image Retrieval	8,762,390	6/24/2014	13/679,317	11/16/2012	Shaoting Zhang ; Ming Yang ; Kai Yu
11065	Cross-Layer System Architecture Design	8,762,794	6/24/2014	13/299,578	11/18/2011	ANAND RAGHUNATHAN ; HYUNGMIN CHO ; Srimat Chakradhar
09060	CONSTRAINT-CONSCIOUS OPTIMAL SCHEDULING FOR CLOUD INFRASTRUCTURES	8,762,997	6/24/2014	12/818,514	6/28/2010	Yun Chi ; Vahit Hacigumus ; HYUN MOON
10073	System and Method for Gathering Context Parameters to Determine a Mobile User Context	8,763,010	6/24/2014	13/268,082	10/7/2011	Vahit Hacigumus ; Jagan Sankaranarayanan ; Junichi Tatemura
11002	Multimode Optical Amplifier with Close-Loop Modal Gain Control	8,767,288	7/1/2014	13/444,371	4/11/2012	NENG BAI ; Ezra Ip
10002	Dynamic Resource Partitioning for Long-Term Fairness to Non-Elastic Traffic on a Cellular Basestation	8,767,553	7/1/2014	13/170,665	6/28/2011	RAVINDRANATH KOKKU ; Rajesh Mahindra ; HONGHAI ZHANG ; Sampath Rangarajan
10107	Femtocell Resource Management for Interference Mitigation	8,767,580	7/1/2014	13/408,487	2/29/2012	Jongwon Yoon ; Karthikeyan Sundaresan ; Mustafa Arslan
10030A	FEED-FORWARD CONTROL SIGNALING AND DECODING SCHEMES	8,767,665	7/1/2014	13/967,582	8/15/2013	Mohammad Khojastepour ; Sampath Rangarajan ; Narayan Prasad
10105	An Efficient Square-Root Free 2 Symbol Max-Log Receiver	8,767,888	7/1/2014	13/433,873	3/29/2012	Neda Cvijetic ; Narayan Prasad ; Ting Wang ; Sampath Rangarajan
10050	Four-dimensional Optical Multiband-OFDM for Beyond 1.4 Tb/s Serial Optical Transmission	8,768,175	7/1/2014	13/251,214	10/1/2011	Ivan Djordjevic ; Ting Wang ; LEI XU
10059	Admission Control in Cloud Databases Under Services Level Agreements	8,768,875	7/1/2014	13/251,215	10/1/2011	Shenghuo Zhu ; Vahit Hacigumus ; Yun Chi ; Junichi Tatemura ; Pengcheng Xiong
09056	Universal Causality Graphs For Bug Detection in Concurrent Programs	8,769,499	7/1/2014	12/907,409	10/19/2010	CHAO WANG ; VINEET KAHLOON
11027	Digital Pathology System with Low-Latency Analytics	8,774,518	7/8/2014	13/564,437	8/1/2012	Christopher Malon ; Eric Cosatto ; Hans Graf
10024	Highly Scalable SLA-Aware Scheduling for Cloud Services	8,776,076	7/8/2014	12/985,038	1/5/2011	Vahit Hacigumus ; HYUN MOON ; Yun Chi
08081A	Methods and Systems for Allocation of Macro Cell Resources in a Distributed FEMTO Cell Network and a Distributed Relay Station Network	8,780,849	7/15/2014	13/650,433	10/12/2012	Karthikeyan Sundaresan ; Sampath Rangarajan
11071	Receptive Field Learning for Pooled Image Features	8,781,218	7/15/2014	13/668,188	11/2/2012	CHANG HUANG ; Yangqing Jia
10123	Energy Efficient OFDM Transceiver	8,781,326	7/15/2014	13/437,139	4/2/2012	Dayou Qian ; Junqiang Hu ; Ting Wang
10042	Greedy Channel Selection Procedure for the Routing, Wavelength Assignment, and Spectrum Allocation in the Flexible Optical WDM Networks	8,781,328	7/15/2014	13/236,535	9/19/2011	Philip Ji ; Ankitkumar Patel
10118	Fast Image Classification by Vocabulary Tree Based Image Retrieval	8,787,682	7/22/2014	13/339,240	12/28/2011	Yuanqing Lin ; Xiaoyu Wang ; Kai Yu ; Ming Yang
10130	Polarization-alternating optical signal generation using CSRZ modulation	8,787,709	7/22/2014	13/435,775	3/30/2012	LEI XU ; Fatih Yaman ; Ting Wang ; Shaoliang Zhang
11029	Multi-Service Provisioning in Orthogonal Frequency Division Multiplexing-Passive-Optical Network OFDMA-PON	8,787,761	7/22/2014	13/588,335	8/17/2012	Ting Wang ; Jingjing Zhang ; Konstantinos Kanonakis ; Neda Cvijetic
10098	Optical Layer Traffic Grooming at an OFDM Subcarrier Level with Photodetection Conversion of an Input Optical OFDM to an Electrical Signal	8,787,762	7/22/2014	13/402,418	2/22/2012	Ting Wang ; Philip Ji ; Dayou Qian ; Ankitkumar Patel ; Yoshiaki Aono
11038	Computer-Guided Holistic Optimization of MapReduce Applications	8,793,674	7/29/2014	13/622,048	9/18/2012	Nishkam Ravi ; Jun Liu ; Srimat Chakradhar
11009B	Enhancements of Download Multi-User Multiple-Input/Output Wireless Communications	8,798,011	8/5/2014	13/456,881	4/26/2012	Narayan Prasad ; Mohammad Khojastepour ; Guosen Yue ; Sampath Rangarajan ; MEILONG JIANG
11049	High Speed Optical 8-QAM Modulation by Cascading Dual-Drive Mach-Zehnder Modulator with I/Q Modulator	8,798,480	8/5/2014	13/646,465	10/5/2012	Yue-Kai Huang ; Ezra Ip ; Dayou Qian
11053	Feedback-Directed Random Class Unit Test Generation Using Symbolic Execution	8,799,194	8/5/2014	13/646,390	10/5/2012	Franjo Ivancic ; Aarti Gupta ; VINEET KAHLOON ; Khalil Ghorbal ; Parasara Duggirala
10083	Calculating Virtual Machine Resource Utilization Information	8,806,487	8/12/2014	13/462,298	9/27/2011	Kenji Yoshihira ; Haifeng Chen ; Guofei Jiang ; Hui Zhang
10085A	A Method and System for Memory Aware Runtime to Support Multitenancy in Heterogeneous Clusters	8,806,503	8/12/2014	13/347,087	1/24/2012	Srimat Chakradhar ; MICHELA BECCHI ; Kittisak Sajjapongse
10020	Method and Apparatus for Predicting Application Performance Across Machines with Different Hardware Configurations	8,818,922	8/26/2014	13/171,812	6/29/2011	Kenji Yoshihira ; Guofei Jiang ; HUI KANG ; Haifeng Chen

11067A	Data Sharing Framework for Multitenant Cloud Databases	8,825,506	9/2/2014	13/666,438	11/1/2012	Jagan Sankaranarayanan ; Vahit Hacigumus ; Haopeng Zhang ; Mohamed Sarwat
10076C	Method for a Canceling Self Interference Signal Using Passive Noise Cancellation for Full-Duplex Simultaneous (in time) and overlapping (in space) Wireless Transmission and Reception on the Same Frequency Band	8,837,332	9/16/2014	13/324,998	12/13/2011	Sampath Rangarajan ; Karthikeyan Sundaresan ; Mohammad Khojastepour
11061	Two-Stage Multiple Kernel Learning Method	8,838,508	9/16/2014	13/652,087	10/15/2012	Alexandru Niculescu-Mizil ; Abhishek Kumar ; KORAY KAVUKCUOGLU
08037	Wireless Network Connectivity in Data Centers	8,873,426	10/28/2014	12/499,906	7/9/2009	RAVINDRANATH KOKKU ; Sampath Rangarajan ; KISHORE RAMACHANDRAN ; Rajesh Mahindra
10078	Method for LTE Downlink Scheduling with MIMO	8,873,441	10/28/2014	13/343,192	1/4/2012	Sampath Rangarajan ; HONGHAI ZHANG ; Narayan Prasad
09067	Method and System for Virtualizing a Cellular Basestation	8,873,482	10/28/2014	13/037,442	3/1/2011	HONGHAI ZHANG ; Sampath Rangarajan ; Rajesh Mahindra ; RAVINDRANATH KOKKU
11013	Fast Methods of Learning Distance Metric for Classification and Retrieval	8,873,843	10/28/2014	13/479,256	5/23/2012	CHANG HUANG ; Shenghuo Zhu ; Kai Yu
11076	Large-Scale Strongly Supervised Ensemble Metric Learning	8,873,844	10/28/2014	13/682,780	11/21/2012	Kai Yu ; CHANG HUANG ; Shenghuo Zhu
11033	Variable Rate Optical Transmitter Based on All-Optical OFDM Super-Channel Technology	8,873,952	10/28/2014	13/588,425	8/17/2012	Yue-Kai Huang ; Ting Wang ; Philip Ji
10124	Multiple-Symbol Polarization Switching for Differential-Detection Modulation Formats	8,873,953	10/28/2014	13/523,103	6/14/2012	Takaaki Ogata ; Ting Wang ; LEI XU ; Shaoliang Zhang ; Fatih Yaman ; Yasuhiro Aoki ; Yoshihisa Inada
11042	Sleep Control for Energy Efficiency in Ethernet Passive Optical Networks	8,873,958	10/28/2014	13/628,320	9/27/2012	Ting Wang ; Jingjing Zhang ; NAOTO MAEDA
11051	802.3av Compliant Method Using Small Timescale Bandwidth Assignment for Increased ONU Downstream Energy Efficiency	8,873,959	10/28/2014	13/644,238	10/3/2012	Jingjing Zhang ; Konstantinos Kanonakis ; Neda Cvijetic
10122	A Method for Traffic Grooming, Wavelength Assignment and Spectrum Allocation	8,873,962	10/28/2014	13/435,413	3/30/2012	Yoshiaki Aono ; Ankithkumar Patel ; Jason P. Jue ; Philip Ji ; Ting Wang
09017	Generating a 400-Gbit/s Single-Channel Optical Signal	8,873,970	10/28/2014	12/789,943	5/28/2010	Philip Ji ; Ting Wang ; Dayou Qian ; JIANJUN YU
10056	Nonlinear Compensation Using an Enhanced Backpropagation Method with Subbanding	8,873,971	10/28/2014	13/269,992	10/10/2011	Ezra Ip ; NENG BAI
11112	Network-Wide Active RAN Sharing in Cellular Networks	8,874,125	10/28/2014	13/787,985	3/7/2013	HONGHAI ZHANG ; Sampath Rangarajan ; Mohammad Khojastepour ; Rajesh Mahindra
10005	Systems and Methods for Semi-Supervised Relationship Extraction	8,874,432	10/28/2014	13/078,985	4/3/2011	Bing Bai ; Xia Ning ; Pavel Kuksa ; Yanjun Qi
10011	Method and Apparatus for Full Natural-Language Parsing	8,874,434	10/28/2014	13/150,898	6/1/2011	RONAN COLLOBERT ; Bing Bai
11107	Predicting Query Execution Time	8,874,548	10/28/2014	13/711,023	12/11/2012	Junichi Tatemura ; Shenghuo Zhu ; Wentao Wu ; Yun Chi ; Vahit Hacigumus
11077B	Tenant Placement in Multitenant Cloud Databases with One-to-Many Data Sharing	8,874,587	10/28/2014	13/684,405	11/23/2012	Ziyang Liu ; Vahit Hacigumus
11024	OFSense: Light-Weight Network Sensing with OpenFlow	8,874,737	10/28/2014	13/554,632	7/20/2012	Ye Wang ; Guofei Jiang ; YUEPING ZHANG ; Vishal Singh
10009	Energy Efficient Heterogeneous Systems	8,874,943	10/28/2014	13/079,808	4/4/2011	Srimat Chakradhar ; Srihari Cadambi ; ABHINANDAN MAJUMDAR
11057	Optimum Signal Constellation Design for High-Speed Optical Transmission	8,874,987	10/28/2014	13/646,454	10/5/2012	Ivan Djordjevic ; Ting Wang ; LEI XU
11123	Method for Request Profiling in Service Systems with Kernel Events	8,875,158	10/28/2014	13/850,531	3/26/2013	Junghwan Rhee ; Hui Zhang ; Kenji Yoshihira ; Guofei Jiang
11102	Method for Scalable Analysis of Android Applications for Security Vulnerability	8,875,298	10/28/2014	13/768,439	2/15/2013	Zhenyu Wu ; Guofei Jiang ; Long Lu ; Zhichun Li
10076A	Method for a Canceling Self Interference Signal Using Active Noise Cancellation in the Air for Full Duplex Simultaneous (in time) and overlapping (in space) wireless transmission & reception on the same frequency band	8,879,433	11/4/2014	13/324,948	12/13/2011	Karthikeyan Sundaresan ; Sampath Rangarajan ; Mohammad Khojastepour
11082	Shape from Differential Motion with Unknown Reflectance	8,879,851	11/4/2014	13/716,294	12/17/2012	Manmohan Chandraker ; Kai Yu
12044	Image Segmentation for Large-Scale Fine-Grained Recognition	8,879,855	11/4/2014	13858044	4/6/2013	Anelia Angelova ; Shenghuo Zhu ; Yuanqing Lin
11052	Combined 2R/3R Regenerators Placement Procedure in Optical WDM Networks	8,879,906	11/4/2014	13/644,470	10/4/2012	Ting Wang ; Philip Ji ; Ankithkumar Patel ; Yoshiaki Aono
11047B	Latency-Aware Live Migration for Multitenant Database Platforms	8,880,477	11/4/2014	13/645,103	10/4/2012	Yun Chi ; Sean Barker ; HYUN MOON ; Vahit Hacigumus
11050	High Speed Long Codeword QC-LDPC Soft Decision Decoder	8,880,985	11/4/2014	13/646,470	10/5/2012	LEI XU ; Junqiang Hu ; Ting Wang
11008	Resource Allocation in Wide-Band MIMO Interference Channels via Submodular Optimization	8,891,391	11/18/2014	13/459,058	4/27/2012	Sampath Rangarajan ; JUBIN JOSE ; HONGHAI ZHANG ; Narayan Prasad ; Luca Venturino
11044	Coordinated Multi-Point Transmission	8,891,604	11/18/2014	13/629,034	9/27/2012	Sampath Rangarajan ; Karthikeyan Sundaresan ; Xinyu Zhang ; Mohammad Khojastepour

10063	Power Scaling for Retransmissions in Uplink MIMO Hybrid ARQ	8,891,677	11/18/2014	13/292,659	11/9/2011	Narayan Prasad ; Guosen Yue ; Sampath Rangarajan ; MEILONG JIANG
12090	Semantic-Aware Co-Indexing for Near-Duplicate Image Retrieval	8,891,908	11/18/2014	14077424	11/12/2013	Ming Yang ; Xiaoyu Wang ; Qi Tian ; Yuanqing Lin
11083	Dynamic Multidimensional Optical Networking Based on Spatial and Spectral Processing	8,891,964	11/18/2014	13/712,465	12/12/2012	Ivan Djordjevic ; Milorad Cvijetic ; Ting Wang ; Neda Cvijetic
11014	Document Classification with Weighted Supervised N-Gram Embedding	8,892,488	11/18/2014	13/483,868	5/30/2012	Bing Bai ; Yanjun Qi
10102	Contextual Weighting and Efficient Re-Ranking for Vocabulary Tree Based Image Retrieval	8,892,542	11/18/2014	13/339,227	12/28/2011	TIMOTHEE COUR ; Kai Yu ; Shenghuo Zhu ; Xiaoyu Wang ; Ming Yang
10095	Quantum Rejection Sampling	8,892,857	11/18/2014	13/362,628	1/31/2012	Martin Roetteler ; MARIS OZOLS ; JEREMIE ROLAND
12043	AUTOMATIC ASYNCHRONOUS OFFLOAD FOR MANY-CORE COPROCESSORS	8,893,103	11/18/2014	13/940,974	7/12/2013	Yi Yang ; Nishkam Ravi ; Srimat Chakradhar
11028	Cloud-Based Digital Pathology	8,897,537	11/25/2014	13/564,453	8/1/2012	Hans Graf ; Christopher Malon ; Eric Cosatto
11092	Orthogonal Frequency Division Multiple Access Time Division Multiple Access Passive Optical Networks OFDMA TDMA PON Architecture for 4G and Beyond Mobile Backhaul	8,897,648	11/25/2014	13/755,627	1/31/2013	Ting Wang ; Milorad Cvijetic ; Neda Cvijetic
09049A	Beamforming	8,897,725	11/25/2014	13/864,355	4/17/2013	Narayan Prasad ; Sampath Rangarajan ; KISHORE RAMACHANDRAN
11039	Scheduling Methods Using Soft and Hard Service Level Considerations	8,898,307	11/25/2014	13/525,308	6/16/2012	HYUN MOON ; Vahit Hacıgumus ; Yun Chi
12016	Efficient Unified Tracing of Kernel and User Events with Multi-Mode Stacking	8,898,644	11/25/2014	13/901,964	5/24/2013	Guofei Jiang ; Nipun Arora ; Kenji Yoshihira ; Junghwan Rhee ; Hui Zhang
10084	Routing, Wavelength Assignment, and Spectrum Allocation in Wavelength-Convertible Flexible Optical WDM Networks	8,909,043	12/9/2014	13/324,112	12/13/2011	Philip Ji ; Jason P. Jue ; Ankitkumar Patel
10085B	A Method and System to Dynamically Bind and Unbind Applications on a General Purpose Graphics Processing Unit	8,917,279	12/23/2014	13/357,351	1/24/2012	Srimat Chakradhar ; Kittisak Sajjapongse ; MICHELA BECCHI
11037	Precoder Design for Physical Layer Multicasting	8,917,648	12/23/2014	13/621,293	9/17/2012	Hao Zhu ; Narayan Prasad ; Sampath Rangarajan
06093B	Precoding for Time or Frequency Correlated MIMO Channels	8,917,789	12/23/2014	13/549,919	7/16/2012	Mohammad Khojastepour
11059	Polarization Switching for Optical Fiber Communications	8,917,998	12/23/2014	13/958,146	10/11/2012	Yoshihisa Inada ; Shaoliang Zhang ; Takaaki Ogata ; Junqiang Hu ; Fatih Yaman ; Yasuhiro Aoki ; Ting Wang ; LEI XU
09048A	Beamforming	8,918,055	12/23/2014	13/864,334	4/15/2013	Narayan Prasad ; KISHORE RAMACHANDRAN ; Sampath Rangarajan
11024CIP	FlowSense: Light-Weight Networking Sensing with OpenFlow	8,918,502	12/23/2014	13/556,930	7/24/2012	Vishal Singh ; Cristian Lumezanu ; YUEPING ZHANG ; Guofei Jiang ; Ye Wang
11032A	Compiler for X86-Based Many-Core Processors	8,918,770	12/23/2014	13/594,464	8/24/2012	Tao Bao ; Srimat Chakradhar ; Ozcan Ozturk ; Nishkam Ravi
09070B	METHOD AND SYSTEM FOR CUSTOMIZABLE FLOW MANAGEMENT IN A CELLULAR BASESTATION	8,923,239	12/30/2014	14/247,431	4/8/2014	HONGHAI ZHANG ; RAVINDRANATH KOKKU ; Sampath Rangarajan ; Rajesh Mahindra
10119	Pilot-based Time Domain Phase Noise Mitigation for Coherent Receiver	8,923,457	12/30/2014	13/855,168	4/2/2013	Ting Wang ; Dayou Qian
11113	Scalable Network MIMO for Wireless Networks	8,923,907	12/30/2014	13/755,485	1/31/2013	Sampath Rangarajan ; Xinyu Zhang ; Mohammad Khojastepour ; Karthikeyan Sundaresan
11095	Network Debugging	8,924,787	12/30/2014	13/736,158	1/8/2013	Vishal Singh ; Ahsan Arefin ; YUEPING ZHANG ; Cristian Lumezanu ; Guofei Jiang
06042	Software Testing Using Machine Learning	8,924,938	12/30/2014	11/863,387	9/28/2007	SRIRAM SANKARANARAYANAN ; Guofei Jiang ; Franjo Ivancic ; RICHARD CHANG

IN WITNESS WHEREOF, NEC Laboratories America, Inc. has executed this Assignment by a duly authorized person.

NEC Laboratories America, Inc.


Name: Roger Tran
Title: President
Date: 1/13/2015