19 November 2013

We, the undersigned, are a group of inventors, technologists and entrepreneurs. Many of us have founded technology businesses; we have invented many of the protocols, systems and devices that make the Internet work, and we are collectively listed as the inventors on over 150 patents.

We write to you today about the U.S. patent system. That system is broken. Based on our experiences building and deploying new digital technologies, we believe that software patents are doing more harm than good. Perhaps it is time to reexamine the idea, dating from the 1980s, that government-issued monopolies on algorithms, protocols and data structures are the best way to promote the advancement of computer science.

But that will be a complex task, and one we don't expect to happen quickly. Unfortunately, aspects of the problem have become so acute they must be addressed immediately.

Broad, vague patents covering software-type inventions—some of which we ourselves are listed as inventors on—are a malfunctioning component of America's inventive machinery. This is particularly the case when those patents end up in the hands of non-practicing patent trolls.

These non-practicing entities do not make or sell anything. Their exploitation of patents as a tool for extortion is undermining America's technological progress; patent trolls are collecting taxes on innovation by extracting billions of dollars in dubious licensing fees, and wasting the time and management resources of creative businesses. Many of us would have achieved much less in our careers if the trolling problem had been as dire in past decades as it is now.

Some legislative proposals under current consideration would fix the trolling problem. These include:

- Requiring that patent lawsuits actually explain which patents are infringed by which aspects of a defendant's technology, and how;
- Making clear who really owns the patent at issue;
- Allowing courts to shift fees to winning parties, making it rational for those threatened with an egregious patent suit to actually fight against the threat rather than paying what amounts to protection money;
- Ensuring that those who purchase common, off-the-shelf technologies are shielded if they are sued for using them; and
- Increasing opportunities for streamlined patent review at the patent office.

While subduing the trolling threat, these proposed changes will not fix the software patent problem completely. Congress should consider ways to stop these patents from interfering with open standards and open source software; from being claimed on problems, rather than solutions; and from being drafted so obscurely that they teach us nothing and cannot be searched. Congress needs to examine the very question of whether their net impact is positive.

But for now, we urge you to implement simple and urgently necessary reforms. We believe in the promise of technology and the power of creation to increase access to information, to create jobs, and to make the world a better place. Please do not let patent trolls continue to frustrate that purpose.

The undersigned:

Ranganathan Krishnan – 30 patents
Former Principle Engineer at Qualcomm; led the software team building the aircraft modems that now power GoGo in-flight Wi-Fi; Data center architect for Zoho Corporation; Startup founder

Paul Sutter – 26 patents, 22 applications
Co-founder of Quantcast

Dr. Neil Hunt – 14 patents
Chief Product Officer at Netflix

Justin Rosenstein – 13 patents, 23 applications
Founder of Asana; Former Engineering Lead at Facebook

Dustin Moskovitz – 2 patents
Co-Founder of Facebook and Asana

Ev Williams
Entrepreneur, CEO of the Obvious Corporation, co-founder of Odeo, Blogger, Twitter, and Medium

David S.H. Rosenthal – 24 patents
Founder of the LOCKSS program, aimed at long-term preservation of web published materials

Frederick Baker – 15 patents, 52 RFCs
Former chair of IETF [the standards body of internet tech]; member to FCC TAC, BITAG and other bodies that advise the US government on technology

John H. Howard – 10 patents
Researcher at MIT, University of Texas, IBM, Carnegie Mellon, MERL, and Distinguished Engineer at Sun Microsystems

Jon Callas – 7 patents, 4 RFCs
Cryptographer, technologist, entrepreneur; Co-founder of PGP Corporation, Silent Circle and others

Igor Kofman – 6 patents, 7 applications
Co-founder of Hackpad inc., a company that develops next generation online collaboration tools; Former Engineer at YouTube/Google and Microsoft

Barbara Simons – 5 patents
Fellow and Former President at Association for Computing Machinery

Joshua Bloch – 4 patents, 4 applications
Former Chief Java Architect at Google and Distinguished Engineer at Sun Microsystems; Led the design and implementation of numerous Java platform features

Rick Adams – 3 patents
Founder of UUNET Technologies, the first commercial Internet provider

Brandon Ballinger – 2 patents, 10 applications
Co-founder of Sift Science, a company that helps fight fraud through machine-learning; Former software engineer at Google

Maryse Thomas – 1 patent, 14 applications
Founder of Pokeware, a technology that naturally infuses video content with contextual advertising using its proprietary Ad Exchange for objects in video.

Andrew Conway – 1 patent, 2 applications
Founder & CEO of Silicon Genetics, a bioinformatics company (now part of Agilent); First to control a helicopter entirely by GPS (and thus win 1995 AUVS contest)

Derek Parham – 1 patent, 2 applications
Creator of Google Apps for Businesses; Entrepreneur, investor, and advisor

James Gettys – 1 patent, 1 application, 2 RFCs
Editor of the HTTP/1.1 specification that underlies the World Wide Web; Co-author of the X Window System

Harry Hochheiser – 1 patent, 1 application
Professor of Biomedical Informatics at UPitt

Ian Lance Taylor – 1 patent, 1 application
Senior Staff Software Engineer at Google, Co-founder of Zembu Labs, and long time open source contributor

Vincent C. Jones, PhD, PE – 1 patent
40 years of designing and building computer networks; published author in the field of computer networking

Jim Fruchterman – 1 patent
CEO of Benetech, a nonprofit tech company; former rocket scientist and co-founder of Calera Recognition Systems and RAF Technology, Inc.

Todd Huffman – company holds 1 Patent
CEO of 3Scan, utilizes a novel serial sectioning technique, KESM [Knife Edge Scanning Microscope] to create 3D models of large volume tissue samples

Anselm Levskaya – 1 application
Founder of Cambrian Genomics, a company developing a new technology pipeline to produce fully synthetic DNA at a fraction of the cost of current approaches

Lorrie Cranor – 1 application
Professor of Computer Science, Engineering, and Public Policy at Carnegie Mellon; Director of CyLab Usable Privacy and Security Laboratory

Mark Kohler – 3 RFCs
Implemented the IPv6 tunneling protocols RFC 2893, RFC 2473, and RFC 3056 for HP-UX and other Unix operating systems

John Vittal – 3 RFCs
Creator of the first integrated email program [MSG] and the initial "killer application" on the ARPAnet/Internet; Developed email standards still in use today

Dan McDonald – 3 RFCs
IPsec and IPv6 pioneer, former project lead for Solaris/OpenSolaris IPsec. Current Illumos RTI advocate, and Principal Software Engineer for Nexenta Systems; Co-author of RFCs 1751, 2367, 5879

Russell Nelson – 3 RFCs
Ran the Clarkson [later Crynwr] Packet Driver Collection

John Gilmore – 1 RFC
Programmer, entrepreneur [Sun Microsystems, Cygnus Solutions]; Free software author, maintainer, and co-creator [GDB, GNU Tar, Binutils, GNU Radio, Gnash, OpenBTS]; protocol designer [RFC 951, BOOTP, which you use whenever you connect to Ethernet or WiFI]; Angel investor, philanthropist.

Stephen Wolff
Builder of NSFNET as a successor to ARPANET and for its transition to carrying commercial traffic, enabling the Internet as we know it today; Internet Hall of Fame Inductee – 2013

Frode Hernes
VP of TV Product Management and former VP of Product Development at Opera Software; Contributor to ISO/CCITT and IETF standards within email directories and security; Board member of the HbbTV Association; Currently active in the spacifications for the TV Industry

Jaan Tallin
Founding Engineer of Skype; Refused to sign patents while at Skype

Megan Klimen
Co-founder of 3Scan

Matthew Goodman
Co-founder of 3Scan

Kodi Daniel
Co-founder of 3Scan

Mikki Barry
Co-founder of InterCon Systems Corporations, the first commercial Internet applications company on the Mac platform; Intellectual Property and IT Attorney

Jim DeLeskie
Founder and CTO, Heimdall Networks, previously Chief Architect Tata Communications/Teleglobe; Sr. Engineer internetMCI and contributor to IEEE and IETF working groups

Brandon Ross
Designer and builder of operating service provider networks such as MindSpring, NetRail, Internap and Comast; Member of the North American Network Operators Group (NANOG), the Internet Engineering Task Force (IETF); Founder of Network Utility Force

Benjamin C. Pierce
Professor of Computer and Information Science at University of Pennsylvania; Fellow of the ACM; Lead developer of Unison, a widely used open-source file synchronization tool; Author

David Snigler
Led several successful projects as part of the Emerging Technologies group at the University of Massachusetts; Responsible for the design of systems used for research and administration throughout the UMass system

Dylan Morris
Co-founder and VP of Strategy of Integrated Plasmonics, a technology startup in San Francisco operating at the intersection of semiconductors, biotechnology, and digital health

Robb Walters
Founder, CEO, President, Board Director and Integrated Plasmonics

Andrew Binstock
Editor in Chief of Dr. Dobb's; founded iText Software Corp.; previously in charge of Global Technology Forecasts at PricewaterhouseCoopers; programmer

Mary Shaw
Educator and researcher in software engineering; ACM SIGSOFT Outstanding Research Award for work in software architecture; Fellow of the Institute for Electrical and Electronic Engineers, the Association for Computing Machinery, and the American Association for the Advancement of Science

Ernest E. [Lee] Keet
President of Vanguard Atlantic Ltd.
Former Chair, Intellectual Property Section, Software Industry Association, ADAPSO; Board member and lead investor in high tech startups

The above have collectively contributed to the invention of the following technologies:

PATENTS:

- 4460974 Electronic computer with access to keyboard status information [Jones]
- 4531185 Centralized synchronization of clocks [Simons]
- 4584643 Decentralized synchronization of clocks [Simons]
- 4603380 DASD cache block staging [Howard]
- 4706081 Method and apparatus for bridging local area networks [Baker]
- 4809265 Method and apparatus for interfacing to a local area network [Baker]
- 4916605 Fast write operations [Howard]
- 5073933 X window security system [Rosenthal]
- 5127098 Method and apparatus for the context switching of devices [Rosenthal]
- 5187786 Method for apparatus for implementing a class hierarchy of objects in a hierarchical file system [Rosenthal]
- 5432824 Credit/rate-based system for controlling traffic in a digital communication network [Howard]
- 5442708 Computer network encryption/decryption device [Adams]
- 5444782 Computer network encryption/decryption device [Adams]
- 5470223 Microprocessor controlled fuel and ignition control for a fuel burning device [Fruchterman]
- 5600834 Method and apparatus for reconciling different versions of a file [Howard]
- 5619658 Method and apparatus for trapping unimplemented operations in input/output devices [Rosenthal]
- 5623692 Architecture for providing input/output operations in a computer system [Rosenthal]
- 5638535 Method and apparatus for providing flow control with lying for input/output operations in a computer system [Rosenthal]
- 5640456 Computer network encryption/decryption device [Adams]
- 5640591 Method and apparatus for naming input/output devices in a computer system [Rosenthal]
- 5652793 Method and apparatus for authenticating the use of software [Rosenthal]
- 5659750 Apparatus for context switching of input/output devices in responses to commands from unprivileged application programs [Rosenthal]

- 5685011 Apparatus for handling failures to provide a safe address translation in an improved input/output architecture for a computer system (Rosenthal)
- 5696990 Method and apparatus for providing improved flow control for input/output operations in a computer system having a FIFO circuit and an overflow storage area (Rosenthal)
- 5721947 Apparatus adapted to be joined between the system I/O bus and I/O devices which translates addresses furnished directly by an application program (Rosenthal)
- 5732087 ATM local area network switch with dual queues (Howard)
- 5740406 Method and apparatus for providing fifo buffer input to an input/output device used in a computer system (Rosenthal)
- 5740464 Architecture for providing input/output operations in a computer system (Rosenthal)
- 5745477 Traffic shaping and ABR flow control (Howard)
- 5751951 Network interface (Howard)
- 5758182 DMA controller translates virtual I/O device address received directly from application program command to physical i/o device address of I/O device on device bus (Rosenthal)
- 5764861 Apparatus and method for controlling context of input/output devices in a computer system (Rosenthal)
- 5805930 System for FIFO informing the availability of stages to store commands which include data and virtual address sent directly from application programs (Rosenthal)
- 5887174 System, method, and program product for instruction scheduling in the presence of hardware lookahead accomplished by the rescheduling of idle slots (Simons)
- 5887190 System for determining from a command storing in a storage circuit an application program which has initiated the command to determine an input/output device address (Rosenthal)
- 5909595 Method of controlling I/O routing by setting connecting context for utilizing I/O processing elements within a computer system to produce multimedia effects (Rosenthal)
- 5918050 Apparatus accessed at a physical I/O address for address and data translation and for context switching of I/O devices in response to commands from application programs (Rosenthal)
- 5924126 Method and apparatus for providing address translations for input/output operations in a computer system (Rosenthal)
- 6023738 Method and apparatus for accelerating the transfer of graphical images (Rosenthal)
- 6044222 System, method, and program product for loop instruction scheduling hardware lookahead (Simons)
- 6065071 Method and apparatus for trapping unimplemented operations in input/output devices (Rosenthal)
- 6081854 System for providing fast transfers to input/output device by assuring commands from only one application program reside in FIFO (Rosenthal)
- 6098079 File version reconciliation using hash codes (Howard)
- 6292938 Retargeting optimized code by matching tree patterns in directed acyclic graphs (Simons)

- 6336186 Cryptographic system and methodology for creating and managing crypto policy on certificate servers (Callas)
- 6513032 Search and navigation system and method using category intersection pre-computation (Sutter)
- 6584450 Method and apparatus for renting items (Hunt)
- 6594260 Content routing (Baker)
- 6629198 Data storage system and method employing a write-ahead hash log (Howard)
- 6738437 Symbol recovery from an oversampled hard-decision binary stream (Krishnan)
- 6742044 Distributed network traffic load balancing technique implemented without gateway router (Baker)
- 6744572 System and method for imaging an object (3Scan)
- 6775231 Dynamic weighted resource sharing (Baker)
- 6789125 Distributed network traffic load balancing technique implemented without gateway router (Baker)
- 6801811 Software-directed, energy-aware control of display (Gettys)
- 6820261 Inheritable thread-local storage (Bloch)
- 6839895 Method of, system for, and computer program product for providing efficient utilization of memory hierarchy through code restructuring (Simons)
- 6915282 Autonomous data mining (Conway)
- 6928062 Uplink pilot and signaling transmission in wireless communication systems (Krishnan)
- 7013458 Method and apparatus for associating metadata attributes with program elements (Bloch)
- 7024381 Approach for renting items to customers (Hunt)
- 7039001 Channel estimation for OFDM communication systems (Krishnan)
- 7042857 Uplink pilot and signaling transmission in wireless communication systems (Krishnan)
- 7062562 Methods and apparatus for content server selection (Baker)
- 7080138 Methods and apparatus for content server selection (Baker)
- 7095790 Transmission schemes for multi-antenna communication systems utilizing multi-carrier modulation (Krishnan)
- 7098815 Method and apparatus for efficient compression (Rosenthal)
- 7159237 Method and system for dynamic network intrusion monitoring, detection and response (Callas)
- 7171657 Method and apparatus for importing static members of a class (Bloch)
- 7263687 Object-oriented enumerated type facility (Bloch)
- 7292826 System and method for reducing rake finger processing (Krishnan)
- 7359728 Modified power control for reduction of system power consumption (Krishnan)
- 7383439 Apparatus and method for facilitating encryption and decryption operations over an email server using an unsupported protocol (Callas)
- 7401159 Distributed network traffic load balancing technique implemented without gateway router (Baker)
- 7403910 Approach for estimating user ratings of items (Hunt)

- 7408914 Time-hopping systems and techniques for wireless communications (Krishnan)
- 7437558 Method and system for verifying identification of an electronic mail message (Baker)
- 7447481 System and method for reducing rake finger processing (Krishnan)
- 7450963 Low power dual processor architecture for multi mode devices (Krishnan)
- 7463576 Channel estimation for OFDM communication systems (Krishnan)
- 7493133 Power control in ad-hoc wireless networks (Krishnan)
- 7515595 Network using encoded transmissions and forwarding (Krishnan)
- 7515924 Method and module for operating independently of a remote terminal if an incoming pilot signal is not detected within a time period and enabling a pilot signal transmission (Krishnan)
- 7519371 Multi-hop communications in a wireless network (Krishnan)
- 7529780 Conflict management during data object synchronization between client and server (Rosenstein)
- 7536641 Web page authoring tool for structured documents (Rosenstein)
- 7542471 Method of determining path maximum transmission unit (Sutter)
- 7546252 Approach for managing rental items across a plurality of distribution locations (Hunt)
- 7551620 Protecting data integrity in an enhanced network connection (Sutter)
- 7593943 Method and system for synchronizing multiple user revisions to a shared object (Kofman)
- 7606326 Transmission schemes for multi-antenna communication systems utilizing multi-carrier modulation (Krishnan)
- 7616638 Wavefront detection and disambiguation of acknowledgments (Sutter)
- 7617127 Approach for estimating user ratings of items (Hunt)
- 7630305 TCP selective acknowledgements for communicating delivered and missed data packets (Sutter)
- 7631252 Distributed processing when editing an image in a browser (Rosenstein)
- 7631253 Selective image editing in a browser (Rosenstein)
- 7631323 Method of sharing an item rental account (Hunt)
- 7634715 Effects applied to images in a browser (Rosenstein)
- 7640427 System and method for secure electronic communication in a partially keyless environment (Callas)
- 7650387 Method and system for managing storage on a shared storage space (Baker)
- 7656799 Flow control system architecture (Sutter)
- 7657037 Apparatus and method for identity-based encryption within a conventional public-key infrastructure (Callas)
- 7664140 Early termination of low data rate traffic in a wireless network (Krishnan)
- 7698453 Early generation of acknowledgements for flow control (Sutter)
- 7730213 Object-based storage device with improved reliability and fast crash recovery (Howard)
- 7840648 Web-page authoring tool for automatic enrollment in advertising program (Rosenstein)
- 7843938 QoS optimization with compression (Sutter)

- 7852799 Network using randomized time division duplexing (Krishnan)
- 7864770 Routing messages in a zero-information nested virtual private network (Baker)
- 7864772 Protecting data integrity in an enhanced network connection (Sutter)
- 7895641 Method and system for dynamic network intrusion monitoring, detection and response (Callas)
- 7907898 Asynchronous inter-piconet routing (Krishnan)
- 7912457 Methods and apparatus for creation and transport of multimedia content flows (Krishnan)
- 7953000 Mechanism to improve preemption behavior of resource reservations (Baker)
- 7953794 Method and system for transitioning between synchronous and asynchronous communication modes (Kofman)
- 7958529 Method of sharing an item rental account (Hunt)
- 7969876 Method of determining path maximum transmission unit (Sutter)
- 7978710 Synchronous inter-piconet routing (Krishnan)
- 8004973 Virtual inline configuration for a network device (Sutter)
- 8015067 Deleted account handling for hosted services (Parham)
- 8019351 Multi-hop communications in a wireless network (Krishnan)
- 8024652 Techniques to associate information between application programs (Kofman)
- 8028024 System and method of instant messaging between wireless devices (Krishnan)
- 8050271 Protecting data integrity in an enhanced network connection (Sutter)
- 8077632 Automatic LAN/WAN port detection (Sutter)
- 8086524 Systems and methods for transaction processing and balance transfer processing (Sutter)
- 8150919 Method and system for transitioning between synchronous and asynchronous communication modes (Kofman)
- 8155444 Image text to character information conversion (Kofman)
- 8156554 Method and system for verifying identification of an electronic mail message (Baker)
- 8161368 Distributed processing when editing an image in a browser (Rosenstein)
- 8176120 Web-page authoring tool for automatic enrollment in advertising program (Rosenstein)
- 8208972 Low power dual processor architecture for multi mode devices (Krishnan)
- 8230318 Selective image editing in a browser (Rosenstein)
- 8233392 Transaction boundary detection for reduction in timeout penalties (Sutter)
- 8238241 Automatic detection and window virtualization for flow control (Sutter)
- 8245123 Effects applied to images in a browser (Rosenstein)
- 8245277 Universally usable human-interaction proof (Hochheiser)
- 8259729 Wavefront detection and disambiguation of acknowledgements (Sutter)
- 8271338 Approach for estimating user ratings of items (Hunt)
- 8310928 Flow control system architecture (Sutter)
- 8311981 Conflict management during data object synchronization between client and server (Rosenstein)
- 8315977 Data synchronization between a data center environment and a cloud computing environment (Hunt)

- 8320244 Reservation based MAC protocol (Krishnan)
- 8351985 Low power dual processor architecture for multi mode devices (Krishnan)
- 8365235 Trick play of streaming media (Hunt)
- 8369361 Early termination of low data rate traffic in a wireless network (Krishnan)
- 8386601 Detecting and reporting on consumption rate changes (Sutter)
- 8386621 Parallel streaming (Hunt)
- 8411560 TCP selection acknowledgements for communicating delivered and missing data packets (Sutter)
- 8417476 Dynamic randomized controlled testing with consumer electronics devices (Hunt)
- 8433814 Digital content distribution system and method (Hunt)
- 8438280 Detecting and reporting on consumption rate changes (Sutter)
- 8443056 Client-server signaling in content distribution networks (Hunt)
- 8448057 Audience segment selection (Sutter)
- 8462630 Early generation of acknowledgements for flow control (Sutter)
- 8464237 Method and apparatus for optimizing compilation of a computer program (Taylor)
- 8472930 Methods and apparatus for creation and transport of multimedia content flows (Krishnan)
- 8478590 Word-level correction of speech input (Ballinger)
- 8489135 Network topology formation (Krishnan)
- 8489889 Method and apparatus for restricting access to encrypted data (Callas)
- 8493955 Interference mitigation mechanism to enable spatial reuse in UWB networks (Krishnan)
- 8494852 Word-level correction of speech input (Ballinger)
- 8504905 Audience segment selection (Sutter)
- 8553699 Wavefront detection and disambiguation of acknowledgements (Sutter)
- 8554832 Server side user interface simulation (Moskovitz, Rosenstein)
- 8566353 Web-based system for collaborative generation of interactive videos (Kofman)
- 8572477 Web-based incremental computing (Moskovitz, Rosenstein)
- 8468565 Method and apparatus for displaying information in response to motion picture programming (Thomas)

APPLICATIONS:
- 20020065919 Peer-to-peer caching network for user data (Taylor)
- 20040049763 Method and apparatus for importing static members of a class (Bloch)
- 20040049764 Object-oriented enumerated type facility (Bloch)
- 20040049766 Method and apparatus for associating metadata attributes with program elements (Bloch)
- 20050005024 Method of determining path maximum transmission unit (Sutter)
- 20050058131 Wavefront detection and disambiguation of acknowledgments (Sutter)
- 20050060426 Early generation of acknowledgements for flow control (Sutter)
- 20050063302 Automatic detection and window virtualization for flow control (Sutter)
- 20050063303 TCP selective acknowledgements for communicating delivered and missed data packets (Sutter)

- 20050063307 Flow control system architecture (Sutter)
- 20050074007 Transaction boundary detection for reduction in timeout penalties (Sutter)
- 20050120329 Method and apparatus for supporting typesafe software design (Bloch)
- 20050222779 Detecting recessive diseases in inbred populations (Conway)
- 20060159029 Automatic LAN/WAN port detection (Sutter)
- 20060161516 Method and system for synchronizing multiple user revisions to a shared object (Kofman)
- 20060161585 Method and system for transitioning between synchronous and asynchronous communication modes (Kofman)
- 20060248442 Web page authoring tool for structured documents (Rosenstein)
- 20070031886 Detecting recessive diseases in inbred populations (Conway)
- 20070198662 Deleted account handling for hosted services (Parham)
- 20070198938 Account administration for hosted services (Parham)
- 20070245310 Message catalogs for remote modules (Rosenstein)
- 20070248090 Virtual inline configuration for a network device (Sutter)
- 20070260979 Distributed processing when editing an image in a browser (Rosenstein)
- 20070285428 Self-refreshing display controller for a display device in a computational unit (Gettys)
- 20080086741 Audience commonality and measurement (Sutter)
- 20080170785 Converting Text (Kofman)
- 20080225057 Selective image editing in a browser (Rosenstein)
- 20080225058 Effects applied to images in a browser (Rosenstein)
- 20080256113 Techniques to associate information between application programs (Kofman)
- 20080256114 Techniques to display associated information between application programs (Kofman)
- 20080270761 Techniques to generate event contexts for recurring events (Kofman)
- 20090083442 Tracking Identifier Synchronization (Sutter)
- 20090119167 Social Advertisements and Other Informational Messages on a Social Networking Website, and Advertising Model for Same (Rosenstein)
- 20090182589 Communicating Information in a Social Networking Website About Activities from Another Domain (Rosenstein)
- 20090201828 Method of determining path maximum transmission unit (Sutter)
- 20090216815 Conflict Management During Data Object Synchronization Between Client and Server (Rosenstein)
- 20090235158 Web Page Authoring Tool for Structured Documents (Rosenstein)
- 20100036779 User-controllable learning of policies (Cranor)
- 20100046372 Wavefront Detection and Disambiguation of Acknowledgements (Sutter)
- 20100050040 Tcp selection acknowledgements for communicating delivered and missing data packets (Sutter)
- 20100095350 Universally usable human-interaction proof (Hochheiser)
- 20100103819 Flow control system architecture (Sutter)
- 20100110092 Distributed processing when editing an image in a browser (Rosenstein)
- 20100110104 Effects applied to images in a browser (Rosenstein)

- 20100111406 Selective image editing in a browser (Rosenstein)
- 20100232294 Early generation of acknowledgements for flow control (Sutter)
- 20100309922 Protecting data integrity in an enhanced network connection (Sutter)
- 20110029388 Social Advertisements and Other Informational Messages on a Social Networking Website, and Advertising Model for Same (Rosenstein)
- 20110055314 Page rendering for dynamic web pages (Rosenstein)
- 20110153324 Language Model Selection for Speech-to-Text Conversion (Ballinger)
- 20110153325 Multi-Modal Input on an Electronic Device (Ballinger)
- 20110161080 Speech to Text Conversion (Ballinger)
- 20110161081 Speech Recognition Language Models (Ballinger)
- 20110161178 Web-Page Authoring Tool for Automatic Enrollment in Advertising Program (Rosenstein)
- 20110166851 Word-Level Correction of Speech Input (Ballinger)
- 20110225242 Method and system for transitioning between synchronous and asynchronous communication modes (Kofman)
- 20120022853 Multi-Modal Input on an Electronic Device (Ballinger)
- 20120022866 Language Model Selection for Speech-to-Text Conversion (Ballinger)
- 20120022867 Speech to Text Conversion (Ballinger)
- 20120022868 Word-Level Correction of Speech Input (Ballinger)
- 20120022873 Speech Recognition Language Models (Ballinger)
- 20120093156 Virtual inline configuration for a network device (Sutter)
- 20120095836 Social Advertisements Based on Actions on an External System (Rosenstein)
- 20120101898 Presenting personalized social content on a web page of an external system (Rosenstein)
- 20120109757 Sponsored stories and news stories within a newsfeed of a social networking system (Rosenstein)
- 20120203847 Sponsored Stories and News Stories within a Newsfeed of a Social Networking System (Rosenstein)
- 20120204096 Presenting Personalized Social Content on a Web Page of an External System (Rosenstein)
- 20120327772 Wavefront detection and disambiguation of acknowledgements (Sutter)
- 20130003553 Automatic detection and window virtualization for flow control (Sutter)
- 20130124612 Conflict Management During Data Object Synchronization Between Client and Server (Rosenstein)
- 20130132222 Method and Apparatus Pertaining to Financial Investment Quantitative Analysis Signal Auctions (Sutter)
- 20130198008 Social Advertisements And Other Informational Messages On A Social Networking Website, And Advertising Model For Same (Rosenstein)
- 20130198024 Method and Apparatus Pertaining to the Aggregation and Parsing of Behavioral-Event Content (Sutter)
- 20130204954 Communicating information in a social networking website about activities from another domain (Rosenstein)

- 20110207116 Spatio-Temporal Control of Proten Interactions Using Phytochromes [Levskaya]
- 20120240152 Method and apparatus for displaying information in response to motion picture programming [Thomas]
- 20130298168 Method and apparatus for digital shopping [Thomas]
- 20120240139 Method and apparatus for displaying information in response to motion picture programming [Thomas]
- 20080271089 Method and apparatus for displaying information in response to motion picture programming [Thomas]
- 20100035332 Portable detection apparatus for beverage ingredients [Thomas]
- 20110293799 Portable detection apparatus for beverage ingredients [Thomas]
- 20080271084 Method and apparatus for digital shopping [Thomas, filed under Robinson]
- 20080276286 Method and apparatus for displaying information [Thomas, filed under Robinson]
- 20080271087 Method and apparatus for delivering information about an audio element [Thomas, filed under Robinson]
- 20080271088 Method and apparatus for delivering information referred to by content [Thomas, filed under Robinson]
- 20080276285 Method and apparatus for displaying information and collecting viewer information [Thomas, filed under Robinson]
- 20080271086 Method and apparatus for displaying information about a real world setting [Thomas, filed under Robinson]
- 20080271083 Method and apparatus for displaying information about a beauty product element [Thomas, filed under Robinson]
- 20040109087 Method and apparatus for digital shopping [Thomas, filed under Robinson]