

Scott Andrew Denning

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PROFILE

Expert witness for the Mobile Wireless, Global Positioning System (GPS), Network Communications, Software, Storage, and Embedded Computing industries. Known for the ability to read patents and to quickly identify infringing products. Highly proficient in reverse engineering and claim chart construction. Proven technical expertise and IP proficiency has led to the successful defense against patent assertions, invalidation of numerous patent claims, and the establishment of highly successful licensing programs.

EXPERT WITNESS HIGHLIGHTS

- Authored over 5000 pages of expert reports for Federal District Courts and ITC
- Authored over 700 pages of declarations for PTAB
- 108 hours in deposition

TESTIMONY AND EXPERT DOCUMENTS

Testimony:

- Deposition 10-25-2016, Alarm.com v. Vivint (Sterne Kessler Goldstein and Fox)
- Deposition 9-7-2016, Core Wireless v. LG (Davidson Berquist Jackson Gowdey)
- Deposition 6-23-2015, Parallel Networks v. IBM (McKool Smith)
- Deposition 3-22-2014, Parallel Networks v. Abercrombie, Inc., et al. (Buether Joe & Carpenter)
- Deposition 11-23-2013, LBSI v. BP America, Inc., et al. (Buether Joe & Carpenter)
- Deposition 1-15-2013, *ITC Inv. No. 337-TA-850, In the matter of: Certain Electronic Imaging Devices*; Flashpoint v. HTC et al. (H.C. Park & Assoc, PLC)

Expert Reports:

- Validity - *LBS Innovations LLC, v. BP et al.*; US 6,091,956 (Buether Joe & Carpenter)
- Infringement - *LBS Innovations LLC, v. BP et al.*; US 6,091,956 (Buether Joe & Carpenter)
- Non-Infringement - *ITC Inv. No. 337-TA-850, In the matter of: Certain Electronic Imaging Devices*; Flashpoint v. HTC et al. US 6,222,538, US 6,223,190, US 6,400,471 (H.C. Park & Assoc, PLC)
- Infringement - *LBS Innovations LLC, v. Aaron Bros et al.*; US 6,091,956 (Buether Joe & Carpenter)
- Validity - *LBS Innovations LLC, v. Aaron Bros et al.*; US 6,091,956 (Buether Joe & Carpenter, LLC)
- Opinion for defendant - *Ulyssix v. Wyle Labs*; Trade Secret Theft (Cochran & Owen, LLP)
- Opinion for defendant - *BDP v. HP*; Product Liability (Coughlin Betke, LLP)

Inter Partes Review Declarations:

- US 7,550,870 invalid ('974, '758) - *Avocent/Liebert (Davidson Berquist Jackson Gowdey, LLP)*
- US 7,550,870 invalid ('543, '934) - *Avocent/Liebert (Davidson Berquist Jackson Gowdey, LLP)*
- US 7,330,817 valid - *Employment Law Compliance (Harper Washam, LLP)*
- US 7,672,104 invalid - *Avocent/Liebert (Davidson Berquist Jackson Gowdey, LLP)*
- US 5,900,825 invalid – *Mercedes (Hogan Lovells, LLP)*
- US 6,147,601 valid - *Vivint (Sterne Kessler Goldstein Fox, PLLC)*
- US 6,535,123 valid - *Vivint (Sterne Kessler Goldstein Fox, PLLC)*
- US 6,462,654 valid - *Vivint (Sterne Kessler Goldstein Fox, PLLC)*
- US 8,434,020 valid – *Core Wireless (Davidson Berquist Jackson Gowdey, LLP)*
- US 8,713,476 valid – *Core Wireless (Davidson Berquist Jackson Gowdey, LLP)*
- US 8,031,677 valid – *Huawei (Fish & Richardson, P.C.)*
- US 8,537,779 valid – *Huawei (Fish & Richardson, P.C.)*
- US 8,638,750 valid – *Huawei (Fish & Richardson, P.C.)*
- US 8,275,358 invalid – *Four Kites (Polsinelli LLP)*
- US 9,429,659 invalid – *Four Kites (Polsinelli LLP)*

Ex. 1004

Volkswagen v. Carucel
U.S. Patent No. 7,848,701

LITIGATION RELATED EXPERT SERVICES ENGAGEMENTS

- DSS v. Apple (Buether Joe & Carpenter LLP) *Provide Bluetooth related analysis, claim construction, Markman tutorial, infringement report and testimony for DSS*
Status: pending
- Red Sabre Consulting v. Vertical Knowledge (Calfee, Halter & Griswold LLP) *Provide analysis, declaration, and testimony regarding source code analysis of 2 separate sources for clone detection regarding breach of contract*
Status: complete
- Four Kites v. Macropoint (Polsinelli LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 8,275,358 and US 9,429,659 for Four Kites*
Status: pending
- Advanced Media Networks v. AT&T (Buether Joe & Carpenter LLP) *Provide analysis, declarations, review of AT&Ts Petition for MSJ, expert reports and testimony regarding validity and AT&Ts infringement of US 5,960,074 for Advanced Media Networks*
Status: pending
- Nokia v. Huawei (Fish & Richardson, P.C.) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 8,031,677 and 8,537,779 for Huawei*
Status: pending
- TMobile v. Huawei (Fish & Richardson, P.C.) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 8,638,750 for Huawei*
Status: pending
- Core Wireless v. LG (Davidson Berquist Jackson Gowdey, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 8,434,020 and US 8,713,476 for Core Wireless*
Status: complete
- Core Wireless v. Apple (Davidson Berquist Jackson Gowdey, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 8,434,020 and US 8,713,476 for Core Wireless*
Status: complete
- Refco v. Cantor Fitzgerald (Grant & Eisenhofer P.A.) *Provide system and source code analysis, expert report and testimony of online gambling systems and wireless terminals for Refco*
Status: complete
- Vivint v. Alarm.com (Sterne Kessler Goldstein Fox, PLLC) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 6,147,601 and US 6,535,123 for Vivint*
Status: complete
- Mercedes Benz v. Manitto (Hogan Lovells, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 5,900,825 for Mercedes Benz*
Status: settled
- Avocent/Liebert (Davidson Berquist Jackson Gowdey, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 7,550,870 for Avocent/Liebert*
Status: settled
- Employment Law Compliance (Harper Washam, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art including US 7,672,104 and asserted prior art for ELC*
Status: complete
- Avocent/Liebert (Davidson Berquist Jackson Gowdey, LLP) *Provide analysis, declaration, review of IPR petition and testimony regarding prior art against US 7,672,104 for Avocent/Liebert*
Status: settled
- Parallel Networks v. Abercrombie, Inc., et al. (Buether Joe & Carpenter) *Provide analysis regarding dynamic web page generation and applets, infringement report and testimony for Parallel Networks*
Status: settled
- GPNE v. Fleetmatics (Frommer, Lawrence & Haug, LLP) *Provide GPRS - LTE (3GPP mobile phone) related analysis, claim construction, non-infringement report and testimony for Fleetmatics*
Status: settled
- LBSI v. BP (Buether Joe & Carpenter LLP) *Provide geo-mapping and web technologies related analysis, claim construction, infringement report, invalidity rebuttal and testimony for LBSI*
Status: settled

- Unwired Planet v. Google (Munger, Tolles, & Olson LLP) *Provide telecommunications network and user app related analysis, claim construction, non-infringement report and testimony for Google*
Status: complete
- GPNE v. Pantech, et al. (H.C. Park & Assoc, PLC) *Provide GPRS - LTE (3GPP mobile phone) related analysis, claim construction, non-infringement report and testimony for Pantech*
Status: settled
- Adaptix v. Pantech, et al. (H.C. Park & Assoc, PLC) *Provide LTE - OFDMA (3GPP mobile phone) related analysis, claim construction, non-infringement report and testimony for Pantech*
Status: settled
- Pragmatus v. Pantech, et al. (H.C. Park & Assoc, PLC) *Provide GPS/Navigation (mobile phone) related analysis, claim construction, non-infringement report and testimony for Pantech*
Status: settled
- Motorola (Hogan Lovells, LLP) - *Provide operating system software and microprocessor hardware expert analysis*
Status: complete
- Flashpoint v. HTC, et al. (H.C. Park & Assoc, PLC) *Provide Imaging Device (mobile phone camera) related GUI and software expert analysis, claim construction, non-infringement report and testimony for Pantech in ITC investigation*
Status: settled
- Honeywell v. Furuno Electric Co., et al. (Bickel & Brewer) *Provide Navigation related software and hardware analysis, invalidity report, non-infringement report and testimony for FLIR Systems and Raymarine*
Status: settled
- Beacon Navigation v. Daimler (Hogan Lovells, LLP) *Provide GPS Navigation related C and C++ software and microprocessor hardware analysis, report and testimony for Daimler (Mercedes Benz)*
Status: complete
- Beacon Navigation v. Mitsubishi (Quinn Emanuel Erquhart & Sullivan, LLP) *Provide GPS Navigation related C and C++ software and microprocessor hardware analysis, report and testimony for Mitsubishi*
Status: complete
- Beacon Navigation v. Clarion (Quinn Emanuel Erquhart & Sullivan, LLP) *Provide GPS Navigation related C and C++ software and microprocessor hardware analysis, report and testimony for Clarion*
Status: complete
- Beacon Navigation v. BMW (Finnegan Henderson Farabow Garrett & Dunner, LLP) *Provide GPS Navigation related C and C++ software and microprocessor hardware analysis, report and testimony for BMW*
Status: complete
- Taylor v. IBM (Buether, Joe & Carpenter LLP) *Provide C++ source code analysis of 1.2M lines of IBM code*
Status: settled
- HTC (Finnegan Henderson Farabow Garrett & Dunner, LLP) *Provide microprocessor, GPS and GUI patent related analysis*
Status: complete
- Ulyssix v. Wyle (Cochran & Owen, LLP) *Provide analysis and expert report for Wyle Labs in trade secret theft litigation involving military satellite downlink processor technology*
Status: settled
- Opti v. VIA Technologies (Buether Joe & Carpenter LLP) *Provide semiconductor analysis and reports including semiconductor instrumentation and reverse engineering for VIA*
Status: complete
- BDP v. HP (Coughlin Betke, LLP) *Provide forensic computer log analysis and report for HP in product liability litigation related to virtual disk arrays*
Status: settled

TECHNICAL EXPERTISE

Intellectual Property

- Testifying expert and expert report preparation
- Detailed patent analysis and file history review
- Identification and analysis of prior art
- Consulting expert assisting with Preliminary Infringement Contentions, Markman claim terms, Markman tutorials, depositions, reverse engineering and testifying expert preparation
- Target ID, reverse engineering, and claim chart construction for patent assertion and invalidation

Engineering

- User Interface design - embedded graphical and menu interfaces for mobile, GPS, robotic and security applications
- GIS mapping software interface and design including Google Maps, Microsoft MapPoint - Bing Maps, Know-Where Systems, ArcView
- GPS, Teleconferencing, Radar and wireless circuit design and signal processing algorithms
- Software / algorithm development using C, C++, Java, Python, Perl - personally written ~ 1.2 M lines of code
- High performance computing architectures and switched fabrics
- Database development using MySQL and Oracle
- Network communications including TCP/IP, HTTP, SMTP, NTP, Ethernet, 802.x
- Wireless communications including Bluetooth, NFC, LTE, WiFi, CDMA, GPRS, 3G, GSM and CDPD
- Textual and natural language processing in Python
- Enterprise network applications development using BSD sockets on Linux/Unix
- Audio and Video CODECs including Dolby, DBX, wavelet/JPEG2000, SMPTE 421M (VC-1), H.263, H.264, VP8, VP9, and WebM
- 8/16/32/64 bit microprocessor circuitry design

Reverse Engineering:

- CPU and FPGA firmware code extraction
- Software / algorithm decomposition and disassembly
- Custom disassemblers and circuit simulations in Python and Perl
- Signal Processing algorithm identification
- Communications protocol decomposition and identification
- Digital and Analog circuitry reverse engineering and schematic capture
- Proficient with most modern test equipment including HP, Agilent and LeCroy O-Scopes, Network Analyzers, Spectrum Analyzers etc.

EMPLOYMENT EXPERIENCE

CATASYS INC., Los Angeles, CA

2018 – Present

A healthcare provider that improves health and reduces the cost of care for people who suffer from the medical consequences of behavioral health conditions

Principal Data Scientist

- Create predictive data models for identifying people with undiagnosed behavioral health conditions including anxiety, depression, and substance abuse
- Designed and implemented automated data processing pipeline for receiving high-volume data from health plans
- Designed and implemented chatbot for providing quick access to internal and clinical documents and information

APPLIED SCIENCES CORP, Colorado Springs, CO

2010 - Present

Intellectual property consulting and brokerage services for numerous high-tech industry segments. Assertion target and prior art identification, reverse engineering and expert witness services.

Principal

- Numerous litigation related expert engagements, *see Litigation Related Expert Services Retainers section.*
- Patent portfolio license broker for Parallel Networks
- Provided storage related portfolio mining and expert analysis for Teradata Corp.
- Exclusive broker for select high-value patent portfolios for Avaya and HP
- Developed custom software tools for clients including PatentSelect portfolio management system and PatentSelect patent acquisition database. Custom implementations for Apple and Teradata.
- Maintain database of 60k+ patents currently for sale involving more than 100 brokers and IP owners.

ALLIED SECURITY TRUST, Colorado Springs, CO

2008 – 2010

Member directed trust for identifying and acquiring patents currently for sale that could pose a threat to member companies if acquired by an adversarial party. 28 member companies including Apple, Google, Samsung, Oracle, HP, Intel, IBM, Cisco, RIM, ARM, Sony, Motorola, Ericsson, Philips, Verizon, Comcast, Time Warner, SAP, Avaya, Philips and Kodak

Chief Technology Officer

- Directly supported the acquisition of over \$45M in patent assets between Aug 2008 - Sept 2010
- Analyzed 200-600 patents per week along with all accompanying claim charts and other marketing materials to identify a match with member company's products
- Built close working relationships with the IP staff of all member companies
- Built relationships with over 250 brokers and other patent sellers so that the large majority of all patents for sale were offered to AST
- Developed numerous procedures and business models for dealing with very high patent volume including identifying, analyzing, classifying and cataloguing patent portfolios currently for sale
- Recruited and managed network of technical experts to assist in patent analysis
- Notified high-level IP execs from each member company of patents that could be used against them

PURPLE MOUNTAIN, LLC, Colorado Springs, CO

2007 – 2008

Intellectual property consulting service providing patent usage evaluation, portfolio management and reverse engineering services

Founder and Chief Scientist

- Developed search methods and platform independent software suite for textually evaluating patents using Google's document database index system for quickly identifying infringing products and prior art
- Identified prior art on Tivo's Time Warp patent for Dish Networks resulting in 60 of 61 claims being invalidated
- Performed reverse engineering and claim chart construction in support of licensing and litigation for Dish Networks against Sling Media's SlingBox including communications protocol and video CODEC (SIMPTE 421M)
- Consulting engineer for Dish Networks for in-home video streaming (placeshifting) using MPEG-4
- Evaluated large patent portfolios and specifically identified many unlicensed and quality patents and corresponding infringing products for NCR, Avaya, Qualcomm and Haliburton
- Performed reverse engineering and/or claim chart construction in support of licensing and litigation for major law firms including Baker Botts and Greenberg Traurig

PURPLE MOUNTAIN LABS, Colorado Springs, CO

2005 – 2007

Supercomputing and high-speed communications research and development company

Founder and Chief Scientist

- Raised \$400k startup and \$600k second round private funding
- Led product development including competitive reverse engineering for new compact massively parallel multi-core supercomputing architecture for Lockheed Martin for deployment on military radar, ballistic missile defense and spy-plane applications
- Designed and built 256 CPU quad-core MIPS64 based 2.7 TeraFLOP VITA-41 embedded super-computer implemented with InfiniBand data plane and 1Gb Ethernet control plane.
- Modified and extensively tested SUSE Linux 2.6 kernel for above system.
- Delivered functional and benchmarked above described super-computing prototype to Lockheed Martin in 18 months from startup

TAEUS INTERNATIONAL, Colorado Springs, CO

2004 – 2005

Provider of intellectual property evaluation and reverse engineering services with over 20,000 patent evaluations and a network of over 700 subject matter experts

Director of Business Development for Central US Region

- Responsible for developing marketing strategies and developing key target accounts in new Central US region. Closed \$600k in IP licensing related projects in first three months with all new customers
- Established new key partnerships with major IP law firms including Holm, Roberts and Owen (HRO), Baker Botts, and Greenberg Traurig
- Developed and presented award winning licensing strategies at 2005 Licensing Executive Society conference.

Program Manager

- Responsible for managing reverse engineering (RE) projects and retaining appropriate subject matter experts (SME).
- Managed a team of 6 subject matter experts for RE projects for HP on many notebook computers including Acer, Gateway, Sony, Toshiba and others generating over 75 claim charts and over \$700k in 5 weeks
- Managed a team of 4 subject matter experts for RE projects for HP on numerous iPaq clones by Dell, Toshiba, Philips, Mitac and others generating 35 claim charts and over \$400k in 4 weeks

- Designed and implemented thesaurus based patent portfolio management software for quickly searching and sorting large patent portfolios (+30,000 patents) based on related technologies

Subject Matter Expert – projects > \$1M

- Performed RE on competing Java processor and prepared claim charts for Philips, US 5,937,193, 6,298,434, 6,349,377
- Performed 4 RE projects and prepared claim charts on processor clock adjustment for power conservation, US 6,490,688, 6,883,104 (Zelle, Hofmann, Voelbel, Mason & Gette, LLP)
- Performed RE and prepared claim charts on competing media player algorithms for Dolby Labs, US 4,790,016, 4,914,701, 5,235,671 (Farella Braun & Martel LLP)
- Performed RE and prepared claim charts on competing FPGA for Actel, US 6,160,420

DRS TECHNOLOGIES / CATALINA RESEARCH, Colorado Springs, CO

2001 – 2004

Fortune 500 defense technology provider that primarily serves tier 1 defense contractors. Competes with Mercury Computer Systems, Curtiss Wright and GE Fanuc.

Systems Architect/Sr Software Engineer

- Conceived of and designed hardware and software architecture for TeraFLOP class massively parallel embedded computer for Lockheed Martin for deployment on US Navy Aegis class destroyer shipboard radar processing.
- Gave customer presentations and gathered requirements for above system from numerous tier 1 customers including multiple divisions of Lockheed Martin, Raytheon, and MITRE. Helped sales dept. close over \$2.5M in preproduction orders.
- Negotiated with Broadcom for product design and engineering services for above system for \$200k total
- Systems Engineer and team lead on active radar project for Predator UAV for Harris Corp.
- Built prototype TMS320C6201 H.263 based video CODEC for SSD and hard drive recording of RADAR, Infra-Red and HD video images for Raytheon U2 and Global Hawk UAV programs
- Architect and team lead on software improvement initiative. Team converted, tested and documented 310k lines of legacy C source code from DOS to VxWorks on time.

NAVSYS, Colorado Springs, CO

1999 – 2001

Global Positioning System research and development company.

Principal Engineer

- Identified technologies and equipment infringing companies patents US 6,727,846, 5,379,224, 5,225,842
- Prepared claim charts, diagrams and other technical information enabling IP litigators to file law suits against Garmin, Magellan and SnapTrack (Qualcomm)
- Led meetings and assisted CEO in licensing negotiations with Garmin and SnapTrack
- Filed 2 patent apps on high precision positioning system
- Filed 2 patent apps on MEMS GPS signal sensor
- Led research and development activities and built vehicle tracking prototypes that used AMPS cellular communication with the tracking/mapping console - used ArcView GIS later converted to MS MapPoint
- Designed and presented vehicle tracking prototypes to Coca Cola and closed \$1.2M in preproduction orders
- Transferred technology and trained Japanese engineers from Matsushita/Panasonic on companies IP prior to production run

VIDEO DESIGN, Marietta, GA

1994 – 1999

Contract electronic design firm specializing in digital video streaming and recording equipment and robotic controls.

Founder & President

- Designed and implemented CCIR-601 PC based closed circuit television monitoring and recording system, implemented using wavelet video CODEC. A number of prototypes were built and installed for Pac-Tel Cellular stores (now Verizon) and Stockholder's Systems, Inc. (now Checkfree Corp.) corporate campus
- Designed video database for archiving alarm activated video capture. Originally built using wavelet CODEC based on Analog Devices ADV601, later switched to H.263 using Creative Labs Video Blaster board.
- Provided design services to optical robotics company for pipeline inspection camera, robot control systems and data logger. Included design of DVD recorder using proprietary file format and H.263 video compression.

INTERFACE SOLUTIONS, Marietta, GA

1988 – 1994

Contract electronic design firm specialized in microcontroller-based products.

Hardware Engineer

- Designed mainframe ink-jet and laser printer IBM PC interface for Lexmark.
- Designed American Magnetics, Inc. compatible mag-stripe security card encoder.
- Designed credit card reader with IBM keyboard interface for First Data Corp.

EDUCATION:

Ph.D. Student, Machine Learning and Natural Language Processing, University of Colorado, Colorado Springs, CO
All but dissertation defense has been completed
1993 Bachelor of Science in Computer Science - Southern College of Technology, Marietta, GA