

Vita and Credentials of Dan Minoli

I have extensive prior patent and other technology-related litigation experience having written several reports and declarations, been deposed, and testified in court; I also have experience with PGRs. I have extensive research, technical, managerial, and Intellectual Property expertise in the areas of **telecommunications, carrier networks, IP/IPv6/MPLS networking, switches/routers, VoIP, OTT/Video/streaming, QoS, wireless/Wi-Fi, mobility, satellite, broadband, Internet, VoIP, video, multimedia, e-commerce, and IoT/M2M** for both carrier networks and enterprise networks. I am the inventor of one allowed U.S. patent on integrated wireless technology.

I have published 6 books on IPv6 (and numerous other publications on telecommunications networks and network elements, such as router, switches, etc.):

- D. Minoli, *Handbook of IPv4 to IPv6 Transition Methodologies For Institutional & Corporate Networks* (co-authored) (Auerbach, 2008)
- The first book ever on IPv6 security: D. Minoli, *Security in an IPv6 Environment* (co-authored) (Taylor and Francis, 2009)
- The first book ever on voice on IPv6: D. Minoli, *Voice Over IPv6 – Architecting the Next-generation VoIP* (Elsevier, 2006)
- The first book ever on IPv6 over satellite: D. Minoli, *Satellite Systems Engineering in an IPv6 Environment* (Francis and Taylor 2009)
- D. Minoli, *Linear and Non-Linear Video and TV Applications Using IPv6 and IPv6 Multicast* (Wiley 2012)
- D. Minoli, *Building the Internet of Things with IPv6 and MIPv6* (Wiley, 2013)

My specialties include analysis, design, implementation, operation, and advocacy of new network technologies, particularly with an emphasis on **packet technologies and the Internet Protocol (IP) for traditional and broadband applications such as Voice over IP (VoIP); Video Over IP (e.g., IPTV, specifically, entertainment quality digital TV, video distribution over satellite/DTH, High Throughput Satellites [HTSs], Very Small Aperture Terminals [VSATs], also in the context of aeronautical/maritime mobility); multimedia; wireless connectivity** (including Wi-Fi, wireless sensor networks, and communication/DTH/HTS satellites); **security; intranet; Internet/intranet architecture and QoS; IoT/M2M; LANs/VLANs/Metro Ethernet**; and the underlying high-capacity network infrastructure to support these applications along with the call control signaling logic (SS7/Q.931/Q.2931/Q.933) and Advanced Intelligent Network (AIN) services. Packet systems include X.25/NCP, IPv4, Frame Relay, Asynchronous Transfer Mode (ATM), Multiprotocol Label Switching (MPLS), and IPv6. I have also done work in cloud services (Cisco UCS) and IoT/M2M. I have done work in Smart Appliances, Smart Cities, Smart Buildings, Smart Grid, e-health, and 5G, all entailing wireless communications. A book I (co)wrote on wireless sensor networks is a bible in the field and has been cited by thousands of researchers. Also, I wrote the first book ever on public hotspots and the first book ever on IPv6-based satellite wireless communications.

Over 262 published U.S. Patents, as well as 45 U.S. Patent Applications cite my work. Additionally, 7,794 academic researchers cite my work in their own peer-reviewed publications, according to Google Scholar (see this link [here for full set](#)). I have several technical books, many the first book in a given technical field; I have over 407 technical publications (such as papers, reports, columns, conference proceedings, books, and book chapters) and I have spoken at over 90 technical conferences. I am a reviewer for several publishers including Elsevier, Springer, IEEE, and Wiley. I have taught (adjunct) over 75 college grad/undergrad courses. at New York University, Stevens Institute of Technology, and Rutgers University.

I have one allowed U.S. patent on integrated wireless technology (Notice of Allowance from the USPTO received January 31, 2024. Application #: 17/589,374. Title: Wireless Supernetwork For Dense Environments. Filing Date: Jan 31, 2022).

Work Specifically Related To Matters Telecommunications

I have worked and practiced in the field of telecommunications for several decades, with experience in the fields data communications and networking, IPv4/IPv6, telecommunications, cloud computing, Internet, wireless, and Internet of Things (IoT). I have extensive research, technical, managerial, and Intellectual Property expertise in the areas of telecommunications, networking, broadband, Internet, Voice Over Internet Protocol (VoIP), wireless, video, multimedia, MPLS, IPv6, and IoT/M2M for both carrier networks and enterprise networks, as documented by my roster of peer-reviewed publications and technical textbooks. In addition to the textbooks cited earlier, related textbooks include the following:

- D. Minoli, *Internet and Intranet Engineering* (McGraw-Hill, 1997)
- D. Minoli, *Internet Architectures* (coauthored) (John-Wiley, 1999)
- D. Minoli, *Ethernet-based Metro Area Networks – Planning and Designing the Provider Network* (co-authored) (McGraw-Hill, 2002)
- D. Minoli, *High-Density and De-Densified Smart Wireless Campus Communications: Technologies, Integration, Implementation and Applications* (co-authored) (Wiley 2022).
- D. Minoli, *First, Second, and Next Generation LANs* (McGraw-Hill, 1994)
- D. Minoli, *A Networking Approach to Grid Computing* (Wiley, 2005)
- D. Minoli, *Building the Internet of Things with IPv6 and MIPv6* (Wiley, 2013)
- D. Minoli, *Client/Server Applications On ATM Networks* (co-authored) (Prentice-Hall/Manning, 1997)
- D. Minoli, *Planning and Managing Corporate ATM-based Networks* (co-authored) (Prentice-Hall/Manning, 1997)
- D. Minoli, *LAN, LAN Emulation, and ATM* (co-authored) (Artech House, 1997)
- D. Minoli, *Telecommunication Technologies Handbook*, Artech House (1Ed 1991, 2Ed 2003)

I started doing data networking and packet transmission in the late 1970s and continued to the present for both intranet and carrier network environments. In addition to the numerous published papers, this work has been documented in several textbooks, as noted earlier. I have done extensive hands-on work in LAN, wireless LANs, and related technologies over the years, including with repeaters, bridges, access points, routers, and traditional gateways, as documented in at the least the following four authored or coauthored textbooks. Specifically, I started working with network layer protocols, including IPv4, since the mid-1970s (starting out with IP predecessors such as Network Control Protocol/NCP and Network Layer Protocol/NLP), and I continued to be very active in this field ever since (as documented by a continuous stream of technical publications on this topic). I started to work on IPv6 in the mid-2000s driven by the need to support a multitude of devices and sensors in the IoT environment (possibly driving an exhaustion of the IPv4 address space), and, as noted earlier, I have published six textbooks that cover the topic extensively (in addition to books on the IoT requirements, such as addressing among other requirements).

In particular, I researched and published on IPv6 enterprise/institutional network migration mechanisms due to possible IPv4 address exhaustion, as well as coexistence issues (as documented in my co-authored textbook *Handbook of IPv4 to IPv6 Transition Methodologies For Institutional & Corporate Networks*); and I assessed the requirements on various elements in the corporate and carrier network that need to be involved in the migration in order to support the transition or interworking, such as requirements on end systems, edge routers, core routers, switches and other equipment.

I started doing work of voice over packet, VoIP, in the late 1970s and published several IEEE papers on the topic and that time; thus, I am very familiar with the topic. I continued to track and work in that field in the 1980s (including work on voice over frame relay and voice over ATM). In the 2000s I planned and supported what was the largest VoIP deployment to date at Capital One Financial (with over 16,000 IP phones). Later in

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that decade I directed work on VoIP over satellite systems. I have also written the first book ever published (as I believe) on Voice over IP; another book, the first ever published (as I believe) on Voice over ATM; another book, the first ever published (as I believe) on Voice over MPLS; and, another book, the first ever published (as I believe) on Voice over IPv6. Also, I published a well-received book on Q.931/Q.2931/Q.933/AIN signaling. These include:

- D. Minoli, *Delivering Voice Over IP Networks*, 1st Edition (co-authored) (Wiley, 1998); and *Delivering Voice Over IP and the Internet*, 2nd Edition (co-authored) (Wiley, 2002)
- D. Minoli, *Delivering Voice over Frame Relay and ATM*, (co-authored) (Wiley, 1998)
- D. Minoli, *Voice Over MPLS* (McGraw-Hill, 2002)
- D. Minoli, *Voice Over IPv6 – Architecting the Next-generation VoIP* (Elsevier, 2006)
- D. Minoli, *Signaling Principles for Frame Relay and Cell Relay Services* (co-authored) (Artech House, 1994)

I started working on the IoT in the late 1980s while at Ericsson/Telcordia for control of remote “appliances”, while working to identify data applications of ISDN D-channel (focused on CO-based LAN, meter reading, telemetry, control of elevators, security alarms, energy management, and video surveillance). The widespread nature of IoT may lead to address space exhaustion. I continued that work in the mid-2000 resulting in a book that has become a bible in the field, cited by over 2,331 other researchers in their scientific articles according to Google Scholar (*Wireless Sensor Networks*, coauthored, Wiley 2007). To capture my career-long work on sensor networks/IoT, I published a well-received book on the IoT topic in 2013 (*Building the Internet of Things with IPv6 and MIPv6*, Wiley, 2013).

Other Industry Experience/activities

In 2000 I single-handedly launched a start-up next-gen carrier with Round A financing of \$7.5 million to deploy carrier-based Ethernet services, operating at 10 gigabits per second in the core with SONET and router technologies. A major network was deployed and became operational in New York City in August 2001. The 9-11 events frustrated all efforts to maintain the network and secure Round B financing of \$39 million.

In the late 1990s I advised Venture Capitalists for investments in a dozen high-tech companies. I performed extensive technical, sales, and marketing analyses of said high-tech firms seeking funding for a total of approximately \$150M, developing multimedia, digital video, physical layer switching, VSATs, telemedicine, Java-based CTI, VoFR & VPNs, HDTV, optical chips, H.323 gateways, nanofabrication/QCL wireless, and TMN mediation. Included the following efforts: *MRC*: multimedia & Asynchronous Transfer Mode; *NHC*: Physical Layer switch; *CoastCom*: VSAT systems; *Cifra*: tele-medicine; *Uniforce*: Java IP-based CTI; *Memotec*: VoFR; *Miranda*: HDTV & Electronic Cinema; *Lumenon*: optical WDMs; *Medisys*: Web-based healthcare ASP; *Tri-Link*: H.323 VoIP gateway; *Maxima*: wireless free-space optics metro networks using nanofabricated QCLs; and, *ACE*COMM* for TMN/IPDR (financiers/VCs: *Societe’ General de Financement de Quebec*; *Caisse Depot et Placement Quebec*; *Les Fonds De Solidarite’ Des Travailleurs*).

In addition, I have published many trade press articles, Datapro/Gartner reports, and conference presentations on the topics of satellite communications, video, multimedia, DSL, FTTN/FTTC/FTTH, and related technologies; and I have taught these topics as adjunct professor at New York University, Rutgers University, Monmouth University, and Stevens Institute of Technology. I am a frequent reviewer of IoT book proposals, papers, and conferences for Wiley, IEEE and Elsevier.

In the mid-1990s I wrote a book on digital imaging that described (among other systems) a three-tier network for remote scanning of documents and transmission and storage at a central site. DataTreasury Corporation filed a patent in 1997 claiming a similar concept and suing North American banks on patent infringement when using check-scanning technology. My book was widely cited in U.S. Courts. Canadian banks were also sued, but the Royal Bank Of Canada, the Bank Of Nova Scotia, the Toronto-Dominion Bank, the Canadian Imperial Bank Of Canada; the Bank Of Montreal, the National Bank Of Canada, Symcor Inc., and Intria Items Inc.

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countersued. I was asked to be a star witness for the banks. I wrote and prepared an extensive (200-page +/-) Expert Report. I was prepared to testify in court, but the report was considered so powerful by both parties that they decided to settle out of court.

Specific Background and Experience

I have been in the telecommunication/networking business since 1975 and I have 49 years of analysis, design, integration, deployment, and research-oriented work in the area of packet communications, VoIP, multimedia, digital imaging, digital video, and wireless. I have done extensive packet protocol and multimedia services work that lends itself well to patent analysis work. As noted above, I was an expert witness for (i) a large packet wireless/VoIP case, for (ii) a digital imaging case, and (iii) I have done other patent review work over the years.

Education

- BS Mathematics, New York University School of Engineering, Brooklyn, NY, 1974, Summa Cum Laude.
- MS Mathematics, New York University School of Engineering, Brooklyn, NY, 1974, Summa Cum Laude
- MS Computer Science, New York University School of Engineering, Brooklyn, NY, 1978

My original-work thesis has resulted into two distinct newly-introduced (Minoli-invented) concepts:

- *Hyperperfect numbers*, and,
- The *Minoli complexity index* (used in Chemistry to assess complexity of molecules)

Work Affiliations

- **AIG**; 1975 [automation of customer records on minicomputer]
- **Network Analysis Corporation**, 1975-78 [packet communications, voice-over-packet, video over packet & wireless packet technology used in Ethernet LANs]
- **Bell Telephone Laboratories**, 1978-80 [packet communications, carrier networks]
- **ITT Worldcom**, 1980-84 [facsimile/image communications over packet networks; other communication services]
- **Prudential Securities**, 1984-85 [commercial services, channel-extension technologies, deployment of LANs and corporate networks]
- **Bell Communications Research**, 1985-94 [packet, video, and multimedia services and protocols – including VoIP and VoATM, imaging, video distribution by carriers, video-based distance learning, frame relay, ATM, intranet design, Internet architecture, carrier network design]
- **DVI Communications**, 1994-95 [commercial and multimedia services; deployment of high-speed ATM/FDDI-based digital imaging campus network for American Museum of Natural history]
- **AT&T/TCG** (Teleport Communications Group), 1995-00 [deployment and management of broadband ATM/packet/IP and multimedia networks for large institutional organizations such as banks and brokerage firms – major frame relay, ATM, IP backbone, and ATM-based MetroEthernet deployments; testbeds for VoIP]. I was Vice President IP and Data Services.
- **Leading Edge Networks Inc.**, 2000-03 [broadband ATM/packet/IP and multimedia services and protocols; metro Ethernet, including VoMPLS and VoIPv6 technologies]. I was the Chief Technical Officer.
- **Capital One Financial**, 2003-06 [commercial and multimedia services and architecture]. Deployment of a 16,000-stations VoIP, converting away from a VoATM environment. I was Director, Network Infrastructure.

- **SES** (largest satellite operators in the world), 2006-Present [commercial and multimedia services, IPTV, packet services, including VoIP over satellite links]. I was Director, Ground Infrastructure Engineering.
- **Secure Enterprise Systems Inc**, June 2014-Present. Company is a research and engineering firm focusing on assisting the deployment of secure systems by early-adopter high-tech firms, as they seek to introduce the latest state-of-the-art capabilities in their enterprise environment to enhance business and mission productivity. Includes work on VoIP over High Throughput Satellites (HTSs).
- **DVI Communications**, 2015-Present. Intellectual Property work in VoIP, video, wireless and related fields. Also, major work project initiatives including wireless and M2M/IoT.
- **Adjunct Professor** at NYU (16 yrs), Stevens Institute (Graduate School, 10 yrs), Rutgers University (2 yrs), MCCC (2 yrs) from 1984 to Present, typically teaching advanced technologies, including VoIP.
- **Consulting**. As noted earlier, over the years I have advised Venture Capitalists for investments in a dozen high-tech (Canadian) companies. I performed extensive technical, sales, and marketing analyses of high-tech firms seeking funding for a total of approximately \$150M, developing multimedia, digital video, physical layer switching, VSATs, telemedicine, Java-based CTI, VoFR & VPNs, HDTV, optical chips, H.323 gateways, nanofabrication/QCL wireless, and TMN mediation.
- I have done technical radio interview (cybersecurity, 1 hour) and business **TV** appearances (3 appearances, 9 hours total, in cybersecurity and broadband services.)

I have about 400 publications such as papers, reports, columns, conference proceedings, books, and book chapters. I have spoken at about 90 technical conferences. I have published 60 technical books – about a third of them being the first ever in the field (examples of first-ever include [partial list] the first-ever book on Security in IPv6; the first ever on VoIP; the first ever on VoMPLS; the first ever on VoIPv6; the first ever on IP multicast for video applications; the first ever on non-linear video distribution; the first ever on public hotspots; first ever on metro Ethernet; first ever on DVB-S2X; the first ever on green networks; first ever on Frame Relay). Several of my books have been translated into foreign languages and several have been used as college textbooks. I also have written chapters for several edited books.

I wrote extensively for Datapro/Gartner for over 16 years (1984-00). Datapro/Gartner provides guidance to CIO-level decision makers. I wrote about 90 technology reports, typically 10-15 pages long, fine print.

I am a frequent reviewer of papers for publications for the IEEE, as well as frequent reviewer of book publication proposals for Wiley.

I have filed several Provisionals/Patent-Pending in the communications/networking/security arena.

Conference Presentations

- 91- D. Minoli, "Ultrawideband (UWB) Technology For Smart Cities IoT Applications", 2018 IEEE International Smart Cities Conference (ISC2) - IEEE ISC2 2018- Buildings, Infrastructure, Environment Track, Kansas City, Sept 16-19, 2018. (with B. Occhiogrosso).
- 90- D. Minoli, "Mobile IPv6 Protocols and High Efficiency Video Coding For Smart City IoT Applications", CEWIT2017 Conference, Nov. 8-9-2017, Stony Brook, NY, (with B. Occhiogrosso).
- 89- D. Minoli et al, "A Review of Wireless and Satellite-based M2M Services in Support of Smart Grids", 1st EAI International Conference on Smart Grid Assisted Internet of Things (SGIoT 2017) July 11–13, 2017, Sault Ste. Marie, Ontario, Canada.
- 88 – D. Minoli et al, "IoT Security (IoTSec) Mechanisms For e-Health and Ambient Assisted Living Applications – A Big Data Role", The Second IEEE/ACM International Workshop on Safe, Energy-Aware, & Reliable Connected Health (SEARCH 2017) (collocated with CHASE 2017, Conference on Connected Health: Applications, Systems, and Engineering Technologies), July 17-19, 2017, Philadelphia, PA.
- 87- D. Minoli, B. Occhiogrosso, "Internet Of Things (IoT)-Based Apparatus And Method For Rail Crossing Alerting Of Static Or Dynamic Rail Track Intrusions", JRC2017-2304, Proceedings of JRC (Joint Rail Conference), April 4-7, 2017, Philadelphia, PA.
- 86- Multimedia IoT Systems and Applications, Global IoT Summit, GIoT5-2017, Organized by Mandat International, IEEE IoT TSC (Transactions on Service Computing), the IoT Forum and IPv6 Forum (collocated with the IoT Week), 6-9 June 2017, Geneva, Switzerland. (With B. Occhiogrosso et al).
- 85- D. Minoli, K. Sohraby, J. Kouns, "IoT Security (IoTSec) Considerations, Requirements, and Architectures", 2017 14th IEEE Annual Consumer Communications & Networking Conference (CCNC), 8-11 January 2017 in Las Vegas, NV, USA. IEEE catalog number: CFP17CCN-CDR, ISBN:978-1-5090-6195-2, ISSN: 2331-9860.
- 84- Addressing Cybersecurity Risks, NJ SBDC Cybersecurity Conference at TCNJ, Ewing Township, NJ, April 20, 2015.
- 83- Chair, Media Forum, IEEE Globecom, Miami, Dec. 2010. Deploying the Infrastructure to Deliver Evolving Next-Generation TV and Video Services.
- 82- Technical Conference Program Chair, IEEE Enterprise Networking (ENTNET) 2009. Honolulu, Dec. 2, 2009. Develop & deliver entire technical content for IEEE conference spanning a 3-session 1-day program. Conference focuses on institutional networking. Additionally, Chair a session on Green Networks.
- 81- Technical Conference Program Chair, IEEE Enterprise Networking (ENTNET) 2008. New Orleans, LO, Dec. 3, 2008. Develop & deliver entire technical content for IEEE conference spanning a 3-session 1-day program. Conference focuses on institutional networking. Additionally, Chair a session on Enterprise Architecture.
- 80- Technical Conference Program Chair, IEEE Enterprise Networking (ENTNET). Develop & deliver entire technical content for IEEE conference spanning an 8-session 2-day program. Conference focuses on institutional networking, including wireless and video services. Washington, D.C., 11/2007.
- 79- IPTV: Tomorrow's Services Here Today, IEEE Enterprise Networking (ENTNET), Vancouver, BC, 9/2006.
- 78- Session Chair and Conference Tutorial Organizer, IEEE Enterprise Networking (ENTNET). Develop & organize tutorial content for IEEE conference (4 tutorials). Also make presentation: *Enterprise Architecture Planning, Wireless, and Grid Computing*. Vancouver, BC, 9/2006.
- 77- Session Chair & Conference Organizer, Supercomm. Also make presentation: *Next-generation Extranets*, Chicago, Ill, 6/2005.
- 76- Session Chair and Conference Organizer, Supercomm. Also make presentation: *Networking and State of the Art Data Centers*. Chicago, Ill, 6/2004.
- 75- Gigabit-Ethernet-based Services In Metropolitan Environments, Web Week 2001 – Telecom, New Brunswick, October 2001.
- 74- Building Gigabit-Ethernet-based Carriers, Deploying GbE and 10 GbE in the MAN and WAN, Institute For International Research, Dallas, TX, June 2001.
- 73- Examining the Current Status of IP Routing, Next Generation Switching and Routing: Building a Faster Core for your Network, Atlanta, GA, June 2000.
- 72- Voice Over IP Status; ICM, VoiceNet 2000, Dallas, Tx., April 2000.
- 71- Data Technology Deployments for Which High-end Testers are Needed, HP Industry Advisory Council Meeting, Colorado Springs, Sept. 1999.
- 70- Developing E-commerce Applications; UNISYS User Group, New York, September 1999.
- 69- VoIP: A Status Roundtable; ICM Broadband Networking Conference, Chicago, Il., August 1999.
- 68- Java-Approaches to VoIP; Institute For International Research Conference, Washington, D.C., May, 1999.
- 67- The Future of the Internet: Where to Use Gigabit Ethernet, ATM, and Packet Over SONET; Advanced Internet Protocols Conference, San Diego, Feb. 23-24, 1999.
- 66- Integrating Circuit and Packet Switching: Achieving QOS in Public IP Networks; Institute for International Research, Orlando, Dec. 1998.
- 65- High-Speed Internet Access with ADSL; Fall Condex, Miami Beach, September 1998.
- 64- Internetworking Roundtable: Vendor Support; ICM Broadband Networking Conference, Chicago, Il., August 1998.
- 63- Architectures for Voice over Data Networks; ICM Broadband Networking Conference, Chicago, Il., August 1998.
- 62- Quality of Service Roundtable: Vendor Support; ICM Broadband Networking Conference, Chicago, Il., August 1998.
- 61- Designing ATM and IP Backbones; Interop 1998, Las Vegas, Ne., May 1998.
- 60- Quality of Service Considerations in IP and ATM Networks; ICM Broadband Networking Conference, Miami, Fl., April 1998.
- 59- QOS-Enabled Communications; 2nd Texas A&M Symposium on Communications, Austin, Tx., February 1998.
- 58- Carrier's Roles in Making ATM Real; 1997 Broadband Networking Symposium, Washington, D.C., Nov. 1997.
- 57- Selecting a Carrier for High-end ATM Services; International Engineering Symposium, Chicago, Ill. August 1997.
- 56- Selection of Carrier Class ATM and Frame Relay Switches; Annual ECI Telecom Technical & Planning Symposium, Washington, DC., July 1997.

- 55- IP Switching, Tag Switching, MPOA, MPLS; Nordex Wall Street Seminar, NYC, June 1997.
- 54- Carrier's Challenges in ATM Delivery; 1997 Comdex, Atlanta, GA, June 1997.
- 53- High-performance Networking via IP-switching; Baltimore ITEC Expo, May 1997.
- 52- Making Broadband Services Real; 1997 Interop, Las Vegas, Ne, May 1997.
- 51- Convergence of Networking Technologies; 1997 Conference on Emerging Technologies, Nashville, TN., Jan 1997.
- 50- Voice Over ATM, Making it a Reality; 1996 Integrated OSS For ATM Broadband Technologies, Orlando, Fla, Dec 1996.
- 49- ATM in Supercomputing Environments; Supercomputing 1996, Pittsburgh, PA, Nov. 1996.
- 48- Keynote Speech: Network Issues in Convergence; IEEE Convergence of Networks and Services, NYC, Nov. 1996.
- 47- ATM and Broadband; 1996 First Annual Telecommunications Conference, Austin, TX, October 1996.
- 46- Emerging Technology & High-Speed Data Networking; TCG Industry Seminar, Chicago, Ill., Sept 1996.
- 45- ATM-based Telemedicine Applications; 1996 Global Telemedicine and Federal Technologies, Williamsburg, VA, July 1996.
- 44- Voice, Video, and Multimedia over ATM; CMA Spring Session, June 1996, NYC.
- 43- Emerging Technology & High-Speed Data Networking; TCG Industry Seminar, Boston, Mass, April 11, 1996.
- 42- Tutorial on ATM LANE and Classical IP Over ATM; CMA Winter Session, Feb. 1996, NYC.
- 41- An ATM Tutorial; 1995 Broadband And Multimedia Comforum, Miami, December 1995.
- 40- Outsourcing Telecommunication Functions to Carriers; Systems Support Expo, San Francisco, October 1995.
- 39- ATM: Carriers' Challenges in Supporting Fastpacket and ATM Services; Interop 1995, Atlanta, September 1995.
- 38- ATM: Opportunities for End-users; CMA Show, New York, NY, September 1995.
- 37- Outsourcing Communications in the Health Care Industry, Conference on Outsourcing Support Services in Hospitals, Chicago, July 1995.
- 36- Next Generation LANs; TechCon/NeoCon, Chicago, Ill., June 1995.
- 35- ATM: A Status Review; TechCon/NeoCon, Chicago, Ill., June 1995.
- 34- An Overview of ATM; Nortel's Forum, Toronto, Canada, June 1995.
- 33- Analyzing Outsourcing Strategies; Developing an Outsourcing Strategy Conference, Monterey, CA, May 1995.
- 32- Designing End-to-End Networks for New Multimedia Applications; ICA, Portland, Or., April 1995.
- 31- ATM Opportunities For The Futures Industry; Futures Industry Association Meeting, New York, April 1995.
- 30- Service Level Agreements for Outsourced Networks; The Information Technology Outsourcing Institute, New York, February 1995.
- 29- Video Dialtone And Digital Video over ATM; Mt. Jade Science & Technology, Newark, NJ, December 1994.
- 28- Designing Corporate Networks To Carry Multimedia; ICA Summer Program, University Of Colorado, Boulder, Co, 1994.
- 27- Support Of Corporate Multimedia Over ATM; United Technologies Engineering Coordination Activities Eng.Ops. Subcom. For Computer Maintenance, Springfield, Mass, April 1994.
- 26- ATM: A Status Review; Central New York Communications Association, Syracuse, NY, Spring 1994.
- 25- Network Design Tools For Fastpacket And ATM; Comnet, Washington, DC, 1993.
- 24- ATM-Based LANs; Texpro (Pacific Bell Technology Fair), San Francisco, CA, 1993.
- 23- Third Generation LANs; Unix Expo, New York, NY 1992.
- 22- Is Channel Switching A Service Which Users Might Want To Utilize? Yes.; The 10th North American ISDN User Forum, November 5-8, 1990, Gaithersburg, MD.
- 21- Performance Issues For Intelligent Data Networks; ORSA/TIMS Conference, Las Vegas, NV, 1990.
- 20- The Ageo Transform With Applications To Data Communications; 1st ORSA Telecom SIG Conference, Boca Raton, Florida, March 1990.
- 19- Application Of OSI/FTAM To Operating Telephone Companies Operations Systems Network; 1988 Enterprise Networking Event, Baltimore, Md.
- 18- The Impact Of Artificial Intelligence On Data Communications; Bellcore Artificial Intelligence Symposium, Asbury Park, NJ, 1988.
- 17- Planning Operations Support Networks For The 1990's; International Communications Conference, Philadelphia, Pa, 1988.
- 16- Networks Of The 1990's; University's Of Utah Fourth Annual Management Information Systems Seminar, Salt Lake City, 1988
- 15- Transitioning To An ISDN-Based Plant - A Datacom Perspective; Computer Networking Symposium, Washington, D.C., 1988
- 14- Use of Carrier Services in Support of Disaster Recovery; Interface 1986; Atlanta, Ga.
- 13- Aloha Channels Throughput Degradation; Computer Networking Symposium, Washington, D.C., 1986.
- 12- A Stochastic Automata Approach To Computer Music; IEEE International Electrical, Electronics Conference, 1981, Toronto, Canada.
- 11- Local Network Design Strategies For Fax on Packet (Faxpak); International Communication Conference, 1980, Seattle, Wa.
- 10- A Taxonomy And Comparison Of Random Access Protocols For Computer Networks; Networks 80 Conference. India.
- 09- Virtual Terminals In A Computer Communications Environment; INTELCOM 80 Conference. Los Angeles, CA, November 1980.
- 08- Packet Length Considerations In Carrier Sense Multiple Access Packet Radio Systems; INTELCOM 80 Conference. . Los Angeles, CA, November 1980.
- 07- Mersenne Numbers Rooted On 3 For Number Theoretic Transforms; IEEE International Conf. On Acoust., Speech And Signal Processing. Denver, Colorado, April 9-11, 1980.
- 06- Some Design Parameters For PCM Based Packet Voice Communication; International Electrical/Electronics Conference, Toronto, Ontario, 1979.
- 05- Satellite On-Board Processing Of Packetized Voice; International Communication Conference, Vancouver, Canada, 1979.
- 04- Exact Solution For The Initialization Time Of Packet Radio Networks With Two Station Buffers; NCC Conference, New York City, 1979.
- 03- Mixed Classes Of Traffic Obeying Different Queueing Rules With Reference To Integrated Packet Switched Networks; IEEE Can. Conf. on Comm. and Power, Ottawa, 1978.
- 02- On Connectivity In Mobile Packet Radio Networks; 28th IEEE Vehicular Technology, Denver, CO, 1978.
- 01- General Geometric Arrival, Constant Server Queueing Problem With Applications To Packetized Voice; International Communication Conference, Atlanta, GA, 1978.

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Publications (Papers, Books, Conferences)

- 407-2004 - *Quantum Communication and Quantum Internet Applications*, Taylor and Francis/CRC, 2024
- 406-2023 -- *AI Applications to Communications and Information Technologies -- The Role of Ultra Deep Neural Networks*, Wiley, November 2023
- 405-2021 -- Situational Awareness for Law Enforcement and Public Safety Agencies Operating in Smart Cities -- Part 1: Technology; chapter in Springer's book *IoT and WSN based Smart Cities: A Machine Learning Perspective*. S. Rani, V. Sai, R. Maheswar (Ed). Springer 2022, ISBN 978-3-030-84181-2 (With B. Occhiogrosso and A. Koltun).
- 404-2021 -- Situational Awareness for Law Enforcement and Public Safety Agencies Operating in Smart Cities -- Part 2: Platforms; chapter in Springer's book *IoT and WSN based Smart Cities: A Machine Learning Perspective*. S. Rani, V. Sai, R. Maheswar (Ed). Springer 2022, ISBN 978-3-030-84181-2 (With B. Occhiogrosso and A. Koltun).
- 403-2021 -- *High-Density and De-Densified Smart Wireless Campus Communications: Technologies, Integration, Implementation and Applications* (Wiley 2022) (with J. Dressendofer). <https://www.amazon.com/High-Density-Densified-Smart-Campus-Communications/dp/1119716055>
- 402-2020 - Wireless Supernetwork For High-Density Large Venue Settings, U.S. Patent Application #: 63/143,572, Filing Date: Jan 29, 2021 (with J. Dressendofer)
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- 363-2009** -- Technical Conference Program Chair, IEEE Enterprise Networking (ENTNET) 2009. Honolulu, Dec. 2, 2009. Develop & deliver entire technical content for IEEE conference spanning a 3-session 1-day program. Conference focuses on institutional networking. Additionally, Chair a session on Green Networks.
- 362-2009** -- *Security in an IPv6 Environment* (coauthored) (Taylor and Francis, 2009).
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255	11,729,227	Concurrent Secondary Electronic Communication Session
254	11,694,168	Real-time payment system, method, apparatus, and computer program
253	11,658,759	Method and apparatus for transmitting a signal in optical transport network
252	11,625,746	System for monitoring a vending machine
251	11,615,360	System and method for identifying relevant information for an enterprise
250	11,609,940	Realtime, interactive and geographically defined computerized personal identification and matching methods
249	11,507,973	System And Methods For Determining Location Of Pop Displays With Wireless Beacons Using Mobile Applications On Mobile Devices
248	11,490,219	Automatically accessing an internet session using transferred network login information
247	11,487,873	Risk score generation utilizing monitored behavior and predicted impact of compromise
246	11,476,849	High power positive logic switch
245	11,436,577	Bill pay service with federated directory model support
244	11,356,921	Radio system using nodes with high gain antennas
243	11,310,259	Cybersecurity architectural network based on artificial intelligence
242	11,301,824	Electronic payment clearing and check image exchange systems and methods
241	11,295,308	Secure payment processing
240	11,275,367	Dynamically monitoring system controls to identify and mitigate issues
239	RE48,965	Method and apparatus improving gate oxide reliability by controlling accumulated charge
238	RE48,944	Method and apparatus for use in improving linearity of MOSFETS using an accumulated charge sink
237	11,259,140	Routing communications by scanning visible codes
236	11,206,079	Data transmission systems and methods using satellite-to-satellite radio links
235	11,200,590	System for monitoring a vending machine
234	11,190,546	Secure failsafe apparatus
233	11,102,607	Realtime, location-based home automation systems and methods
232	11,055,937	Cell phone control of vehicle settings and actions
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219	10,862,473	Positive logic switch with selectable DC blocking circuit
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217	10,812,068	Switch circuit and method of switching radio frequency signals
216	10,804,892	Circuit and method for controlling charge injection in radio frequency switches
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206	10,505,530	Positive logic switch with selectable DC blocking circuit
205	10,447,381	Radio system using nodes
204	10,430,783	Transmit phase detection circuit
203	10,410,156	System and method for identifying relevant information for an enterprise
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201	10,356,618	Securing credential distribution
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199	10,277,434	Method for encoding real number M-ary signal and encoding apparatus using same
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196	10,084,536	Radio system using satellites
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172	9,178,991	Realtime, interactive and geographically defined computerized personal identification and payment matching systems and methods
171	9,177,737	Tuning capacitance to enhance FET stack voltage withstand
170	9,130,564	Method and apparatus for use in improving linearity of MOSFETs using an accumulated charge sink
169	9,106,227	Devices and methods for improving voltage handling and/or bi-directionality of stacks of elements when connected between terminals
168	9,087,899	Method and apparatus for use in improving linearity of MOSFETs using an accumulated charge sink-harmonic wrinkle reduction
167	9,024,700	Method and apparatus for use in digitally tuning a capacitor in an integrated circuit device
166	8,954,902	Method and apparatus improving gate oxide reliability by controlling accumulated charge
165	8,953,585	System and method for bypassing data from egress facilities
164	8,891,410	Voice-over-IP enabled chat
163	8,880,047	Realtime, location-based cell phone enhancements, uses, and applications
162	8,742,502	Method and apparatus for use in improving linearity of MOSFETs using an accumulated charge sink-harmonic wrinkle reduction
161	8,725,607	Electronic payment clearing and check image exchange systems and methods
160	8,723,260	Semiconductor radio frequency switch with body contact
159	8,693,347	Voice over data telecommunications network architecture
158	8,681,164	Electronic system and method for selectively allowing access to a shared memory
157	8,676,609	Attachment integrated claims systems and operating methods therefor
156	8,669,804	Devices and methods for improving voltage handling and/or bi-directionality of stacks of elements when connected between terminals
155	8,665,904	Auto-compression for media over IP
154	8,604,864	Devices and methods for improving voltage handling and/or bi-directionality of stacks of elements when connected between terminals
153	8,583,111	Switch circuit and method of switching radio frequency signals
152	8,559,907	Integrated RF front end with stacked transistor switch
151	8,536,636	Tuning capacitance to enhance FET stack voltage withstand
150	8,494,963	Remote image capture with centralized processing and storage

149	8,416,769	System and method for bypassing data from egress facilities
148	8,405,147	Method and apparatus for use in improving linearity of MOSFETs using an accumulated charge sink
147	8,374,199	Auto-compression for media over IP
146	8,355,349	Voice-over-IP enabled chat
145	8,314,808	Electronic system and method for selectively allowing access to a shared memory
144	8,295,851	Realtime, interactive and geographically defined computerized personal matching systems and methods
143	8,295,280	Multi-service adaptable routing protocol for wireless sensor networks
142	8,270,421	Voice over data telecommunications network architecture
141	8,089,958	Voice over data telecommunications network architecture
140	8,085,761	Voice over data telecommunications network architecture
139	8,054,315	Electronic system and method for selectively allowing access to a shared memory
138	8,036,214	Voice over data telecommunications network architecture
137	8,024,269	Remote image capture with centralized processing and storage
136	7,898,548	Electronic system and method for selectively allowing access to a shared memory
135	7,855,966	Network congestion detection and automatic fallback: methods, systems and program products
134	7,777,753	Electronic system and method for selectively allowing access to a shared memory
133	7,720,081	System and method for bypassing data from egress facilities
132	7,660,294	Voice-over-IP enabled chat
131	7,564,840	Voice over data telecommunications network architecture
130	7,542,045	Electronic system and method for display using a decoder and arbiter to selectively allow access to a shared memory
129	7,500,142	Preliminary classification of events to facilitate cause-based analysis
128	7,421,411	Digital rights management in a mobile communications environment
127	7,415,439	Digital rights management in a mobile communications environment
126	7,389,045	Apparatus and method for monitoring and compensating an optical signal
125	7,383,351	Method and apparatus for efficient SPVC destination endpoint address change
124	7,336,656	Method for handling incoming calls directed to a virtual communication service subscriber via a shared line system
123	7,321,368	Electronic system and method for display using a decoder and arbiter to selectively allow access to a shared memory
122	7,272,134	Internet telephone connection method, bandwidth controller and gate keeper
121	7,200,150	System and method for bypassing data from egress facilities
120	7,072,344	Redistribution of excess bandwidth in networks for optimized performance of Voice and data sessions: methods, systems and program products
119	7,068,601	Codec with network congestion detection and automatic fallback: methods, systems & program products
118	7,042,841	Controlling network congestion using a biased packet discard policy for congestion control and encoded session packets: methods, systems, and program products
117	7,039,040	Voice-over-IP enabled chat
116	7,003,093	Tone detection for integrated telecommunications processing
115	6,982,950	System and method for connecting a call in a tandem architecture
114	6,963,627	Method and apparatus for interfacing to E1 or T1 networks
113	6,915,271	Method and system for delivering redeeming dynamically and adaptively characterized promotional incentives on a computer network
112	6,888,833	System and method for processing call signaling
111	6,870,835	Method for handling incoming calls directed to a virtual communication service subscriber via a shared line system
110	6,842,850	DSP data type matching for operation using multiple functional units
109	6,842,845	Methods and apparatuses for signal processing
108	6,832,306	Method and apparatus for a unified RISC/DSP pipeline controller for both reduced instruction set computer (RISC) control instructions and digital signal processing (DSP) instructions
107	6,823,318	Secure purchases over a computer network
106	6,816,497	System and method for processing a call
105	6,804,345	Virtual contact center with flexible staffing control
104	6,795,440	Telecommunications tandem system for circuit-based traffic
103	6,785,282	System and method for connecting a call with a gateway system
102	6,738,358	Network echo canceller for integrated telecommunications processing
101	6,704,327	System and method for connecting a call
100	6,690,656	System for managing telecommunications
99	6,674,759	System for managing telecommunications
98	6,668,019	Reducing the memory required for decompression by storing compressed information using DCT based techniques
97	6,665,294	Broadband telecommunications system
96	6,661,774	System and method for traffic shaping packet-based signals
95	6,657,961	System and method for enhanced end station to end station data flow control

94	6,654,459	Enhanced agent authentication in virtual contact center
93	6,650,747	Control of merchant application by system monitor in virtual contact center
92	6,643,282	Method, system and apparatus for telecommunications control
91	6,639,912	Number portability in a communications system
90	6,633,561	Method, system and apparatus for telecommunications control
89	6,600,735	Internet telephone connection method, bandwidth controller and gate keeper
88	6,594,327	Method and apparatus for interfacing to E1 or T1 networks
87	6,590,897	System and method for bridging universal serial bus and asynchronous transfer mode communication links
86	6,563,918	Telecommunications system architecture for connecting a call
85	6,563,828	Broadband telecommunications system
84	6,557,096	Processors with data typer and aligner selectively coupling data bits of data buses to adder and multiplier functional blocks to execute instructions with flexible data types
83	6,546,022	Method, system and apparatus for processing information in a telecommunications system
82	6,483,837	System and method for connecting a call with an interworking system
81	6,480,493	System for managing telecommunications
80	6,473,429	Broadband telecommunications system
79	6,463,052	Method, system and apparatus for telecommunications control
78	6,452,928	Broadband telecommunications system
77	6,430,195	Broadband telecommunications system interface
76	6,427,194	Electronic system and method for display using a decoder and arbiter to selectively allow access to a shared memory
75	6,424,700	Network based distributed PBX with connection loss survival features
74	6,424,652	Method, system and apparatus for telecommunications control
73	6,408,376	Method and apparatus for instruction set architecture to perform primary and shadow digital signal processing sub-instructions simultaneously
72	6,366,586	Method, system and apparatus for telecommunications control
71	6,351,521	Communications test system
70	6,343,084	Broadband telecommunications system
69	6,330,660	Method and apparatus for saturated multiplication and accumulation in an application specific signal processor
68	6,327,270	Telecommunications apparatus, system, and method with an enhanced signal transfer point
67	6,314,103	System and method for allocating bandwidth for a call
66	6,304,572	Method, system and apparatus for telecommunications control
65	6,304,564	Method for transmitting messages in wireless communication system using a server process
64	6,298,064	Broadband telecommunications system
63	6,285,475	Method and system for detecting optical faults in a network fiber link
62	6,262,992	System and method for transporting a call in a telecommunication network
61	6,256,659	System and method for performing hybrid preemptive and cooperative multi-tasking in a computer system
60	6,233,072	Method and system for restoring coincident line and facility failures
59	6,229,895	Secure distribution of video on-demand
58	6,212,193	Method, system and apparatus for telecommunications control
57	6,208,660	Method, system and apparatus for telecommunications control
56	6,201,812	Method system and apparatus for telecommunications control
55	6,192,350	Method of usage-dependent determination of costs in making communication lines
54	6,192,052	Method system and apparatus for telecommunications control
53	6,185,219	Method, system and apparatus for telecommunications control
52	6,181,703	System for managing telecommunications
51	6,178,170	System and method for transporting a call
50	6,137,800	System and method for connecting a call
49	6,119,108	Secure electronic publishing system
48	6,115,380	Broadband telecommunications system
47	6,108,341	Method, system and apparatus for telecommunications control
46	6,108,113	Method and system for transporting ancillary network data
45	6,104,718	Method, system and apparatus for telecommunications control
44	6,101,213	Method system and computer program product for spread spectrum communication using circular waveform shift-keying
43	6,084,880	Asynchronous transfer mode adapter for desktop applications
42	6,081,525	Broadband telecommunications system
41	6,078,596	Method and system of SONET line trace
40	6,058,459	Video/audio decompression/compression device including an arbiter and method for accessing a shared memory
39	6,058,260	Methods and apparatus for planning and managing a communications network

38	6,052,380	Network adapter utilizing an ethernet protocol and utilizing a digital subscriber line physical layer driver for improved performance
37	6,031,840	Telecommunications system
36	6,028,635	Reducing the memory required for decompression by storing compressed information using DCT based techniques
35	6,026,091	ATM gateway system
34	6,023,474	Broadband telecommunications system interface
33	6,005,694	Method and system for detecting optical faults within the optical domain of a fiber communication network
32	6,002,689	System and method for interfacing a local communication device
31	5,991,867	Transmit scheduler for an asynchronous transfer mode network and method of operation
30	5,991,301	Broadband telecommunications system
29	5,974,532	System and method for generating responses for inputs using a hybrid state engine table
28	5,956,165	Method and apparatus for updating subcarrier modulation in a communication network
27	5,954,829	System, method, and computer program product for digital cross connect testing
26	5,930,017	Method and system for maintaining an optical path
25	5,920,562	Systems and methods for providing enhanced services for telecommunication call
24	5,920,353	Multi-standard decompression and/or compression device
23	5,903,370	System for an optical domain
22	5,884,017	Method and system for optical restoration tributary switching in a fiber network
21	5,878,027	Episodic traffic monitor
20	5,867,689	Method and apparatus for emulating a digital cross-connect switch network using a flexible topology to test MCS network management
19	5,854,930	System, method, and computer program product for script processing
18	5,850,536	Method and system for simulated multi-tasking
17	5,825,780	Method, system and apparatus for telecommunications control
16	5,812,826	Method and apparatus for emulating a network of state monitoring devices
15	5,812,789	Video and/or audio decompression and/or compression device that shares a memory interface
14	5,809,286	Method and apparatus for emulating a dynamically configured digital cross-connect switch network
13	5,777,761	System and method for photonic facility and line protection switching using wavelength translation
12	5,774,654	Communication terminal apparatus and communication method for communicating data through a plurality of communication channels
11	5,748,617	Method and apparatus for emulating a digital cross-connect switch network
10	5,737,404	Distributed signaling system seven call handling system
9	5,731,887	System and method for photonic facility and line protection switching
8	5,699,356	System and method for personal communication system dynamic channel allocation
7	5,687,290	Method and apparatus for monitoring and controlling communications networks
6	5,666,481	Method and apparatus for resolving faults in communications networks
5	5,553,081	Apparatus and method for detecting a signal in a communications system
4	5,548,587	Asynchronous transfer mode adapter for desktop applications
3	5,541,922	Method for assigning priority to traffic between local area networks interconnected via a backbone network
2	5,526,283	Realtime high speed data capture in response to an event
1	4,663,748	Local area network

Patents Applications citing my work

45	20230129380	Method for Estimating Molecular Complexity
44	20220408339	Radio System Using Nodes With High Gain Antennas
43	20220286803	Automatically Accessing an Internet Session Using Transferred Network Login Information
42	20220248499	Wireless Supernetwork For Dense Environments
41	20220150662	Routing Communications By Scanning Visible Codes
40	20210399793	Radio System Using Nodes
39	20210344412	Radio System Using Satellites
38	20200193748	Cell Phone Control of Vehicle Settings and Actions
37	20200193747	Routing Communications By Scanning Visible Codes
36	20200014459	Radio System Using Nodes
35	20190229800	Radio System Using Nodes
34	20190109634	Radio System Using Satellites
33	20190104462	Radio System Using Nodes With High Gain Antennas
32	20170265139	Apparatus And Method For A Task And Energy Efficient Black Box.
31	20170134418	System And Method For A Uniform Measure And Assessment Of An Institution's Aggregate Cyber Security Risk And Of The Institution's Cybersecurity Confidence Index.
30	20170116432	System And Methods For Cyber-And-Physically-Secure High Grade Weaponry
29	20160358394	Realtime, Location-Based Home Automation Systems And Methods
28	20150024781	Realtime, Location-Based Cell Phone Enhancements, Uses, And Applications
27	20140176587	Electronic System And Method For Selectively Allowing Access To A Shared Memory
26	20130156024	Voice-Over-Ip Enabled Chat
25	20130042072	Electronic System And Method For Selectively Allowing Access To A Shared Memory
24	20120007871	Electronic System And Method For Selectively Allowing Access To A Shared Memory
23	20110122946	Electronic System And Method For Selectively Allowing Access To A Shared Memory
22	20100309211	Electronic System And Method For Selectively Allowing Access To A Shared Memory
21	20100135283	Voice-Over-Ip Enabled Chat
20	20090201305	Electronic System And Method For Selectively Allowing Access To A Shared Memory
19	20090070463	Preliminary Classification Of Events To Facilitate Cause-Based Analysis
18	20090063902	Preliminary Classification Of Events To Facilitate Cause-Based Analysis
17	20080088637	Electronic System And Method For Display Using A Decoder And Arbiter To Selectively Allow Access To A Shared Memory
16	20080043967	Method For Handling Incoming Calls Directed To A Virtual Communication Service Subscriber Via A Shared Line System
15	20070112676	Digital Rights Management In A Mobile Communications Environment
14	20070032225	Realtime, Location-Based Cell Phone Enhancements, Uses, And Applications
13	20060209898	Network Congestion Detection And Automatic Fallback: Methods, Systems & Program Products
12	20050259638	Voice -Over-Ip Enabled Chat
11	20050008140	Virtual Contact Center With Flexible Staffing Control
10	20050004875	Digital Rights Management In A Mobile Communications Environment
9	20040249768	Digital Rights Management In A Mobile Communications Environment
8	20040223759	Apparatus And Method For Monitoring And Compensating An Optical Signal
7	20040213257	Redistribution Of Excess Bandwidth In Networks For Optimized Performance Of Voice And Data Sessions: Methods, Systems And Program Products
6	20030235187	Internet Telephone Connection Method, Bandwidth Controller And Gate Keeper
5	20030012138	Codec With Network Congestion Detection And Automatic Fallback: Methods, Systems & Program Products
4	20030012137	Controlling Network Congestion Using A Biased Packet Discard Policy For Congestion Control And Encoded Session Packets: Methods, Systems, And Program Products
3	20020180743	Electronic System And Method For Display Using A Decoder And Arbiter To Selectively Allow Access To A Shared Memory
2	20020091612	Method, System, And Business Method For Providing A Marketplace For Computing Capacity In A Network
1	20010043560	Method And System For Restoring Coincident Line And Facility Failures

Details on Intellectual Property-related work

	Law Firm	Client	Year	Role
23	Spiro Harrison & Nelson LLC	State of New York	2023	Consultative support for <i>qui tam</i> action on behalf of the state of New York to recover hundreds of millions of dollars in unremitted E911 surcharge fees that the carriers (Verizon, AT&T, Frontier, Level 3, CenturyLink, Cablevision, et al) failed to remit to the state. Review & assess Expert Reports and Damages Reports.
22	Glenn Agre Bergman & Fuentes	Lightyear (Thankachan CEO)	2023	Breach of Shareholders Agreement/Breach of Securities Purchase Agreement and Unfair Competition/Misappropriation of Idea regarding the functionality of two newly-developed networks (by Plaintiff/Nexus) and a follow-on network developed by the Defendant (Lightyear)
21	Goldberg Segalla	Marble VoIP	2022	101/Alice work on Plaintiff's VoIP patent 7,376,129 – Zoom is the Defendant
20	Morrison Foerster	Business Intelligence firm/IQVIA	2022	Legal case dealing with a Telephone Consumer Protection Act (TCPA) matter. Equipment functionality analysis and forensics.
19	Kasowitz Benson Torres	WSOU	2022	Brazos Licensing & Development, LLC v. Dell Technologies, et al; 5 VM/cloud patents; preliminary assessment of a number packet/cloud-oriented patents
18	Offit Kurman	Video Equipment vendor	2019-2022	Evertz Microsystems, Ltd. v. Lawo Inc. Massive 3-yr project. Invalidity and non-infringement on 7 <u>video</u> routing patents (~ 15 prior art patents). Claim charts developed for 115 claims. Numerous Expert report. Prepared 8-hr testimony. Equipment forensics. Settled out-of-court 2 days before trial.
17	McDermott Will & Emery	IoT-based Vendor	2019-2020	Development of Patent Owner Statement for PGR on <u>IoT-based patents</u> (10,158,720 and 10,218,833). Four Declarations generated and two Depositions
16	Gibson Dunn	Large Carrier	2018	Non-infringement analysis of VoIP. Expert input on Patent No. 7,068,668 'Method and apparatus for interfacing a public switched telephone network and an internet protocol network for multi-media communication: Claim 3 (amended after reexam); 7,486,667: Claim 14; 8,125,982: Claim 1; 8,724,643: Claims 10 & 11; and 9,774,745: Claim 1.
15	Fish Richardson	Major VoIP vendor	2018	Non-Infringement and Invalidity on five VoIP <u>patents</u> ; prior art assessment and Claim charts. Major effort, but client settled out of Court just before expert report was generated. Additionally, earlier on was Official Consultant to Testifying Expert with goal of identifying prior art for dependent claims in Sonus patent 6,961,334 for IPR by Metaswitch.
14	Sullivan & Cromwell	Non practicing entity	2019	Evaluation of a portfolio of ten MPLS / MetroEthernet / pseudowire patents for patent strength to support infringement claims against about 20 equipment vendors (Evidence of Use Analysis for 6,785,232 6,894,983 6,876,669 7,768,928 7,127,523 7,154,899 7,773,508 8,199,637 8,830,821).
13	Gibson Dunn	Other Large carrier	2018	Analyzing issues relating to VoIP/ATM U.S. Patent Nos. 6,298,064, 6,330,224, 6,343,084, 6,452,932, 6,463,052, 6,473,429, 6,563,918, 6,633,561, 6,697,340, 6,999,463, 7,286,561, 7,324,534, 7,327,728, 7,505,454, 7,693,131, 7,742,468, prior art & allegedly infringing products.
12	DLA Piper; Abrams & Bayliss	EMC (GEE)/STM	2017-2018	Expert Witness in a contract/technology dispute about the development of VSAT terminals for maritime, DTH, OTT, & VoIP applications. Expert Report, Rebuttal, and Deposition. Equipment forensics. Prepared to testify; settled out of Court days before appearance.
11	Fox – Rothschild	Verint	2016	Official Consultant to Testifying Expert: Response to 210-page "expert report/claim charts" on 6 patents/30 pieces of prior art, <u>IVR/Call Center Systems/Call Recording/Rep Monitoring & 'training'</u> . Infringement, validity, and Alice 101 analysis.
10	Bragalone	Securus	2016	Official Consultant to Testifying Expert: Inter-Party Review (IPR), Patent invalidity, Development of Declaration for <u>voice call processing (authorization, selective recording, speech analysis/ZCR)</u> .
9	McCarthy	Bell Canada	2015-2016	Patent invalidity, <u>Telco IPTV</u> . Canadian Patent 2,339,477. Extensive Claim Charts (~for each of 20 other prior art patents) and testimony development
8	Cooley	Broadsoft	2015	Official consultant to Testifying Expert: Patent invalidity, <u>VoIP/CTI</u> (several patents). Extensive Claims charts development (~10) and co-wrote testimony. Deals with "find me" and "click-to-call"/VoIP. [Broadsoft. v. CallWave Communications, Case No. 1:13-cv-00711.
7	Morris, Nichols	Sprint	2015	<u>Patent invalidity, VoIP/CTI</u> . Case settled out of Court after initial prior-art assessment.
6	Siber Law	Undisclosed	2015	Develop one Claim Chart (pre-trial Rule 11) for patent infringement study, <u>VoIP call setup apply via SBCs</u> .
5	Munger, Tolles & Olson	Verizon Communications	2014	Prior art, invalidity, non-infringement, claim charts, and possible depositions/testimony on a <u>security/firewall</u> patent for VoIP/SIP applications and on a provider-provisioned MPLS/VPN service patent. Material provided by Mr. Minoli resulted in the plaintiff dropping these two patents from the lawsuit.
4	Fulbright & Jaworski	AT&T	2011	Generation of prior art for <u>VoIP</u> lawsuit. Prior Art for VoIP Internet/PSTN gateways as defined in U.S. Patent 7,889,772.
3	Dimock Stratton / Smart & Biggar	IBM; Royal Bank Of Canada; TD Bank; et al	2010	<u>Digital imaging/check scanning</u> . DataTreasury v. Symcor et al. Federal Court of Canada File T-1661-07 (Canadian Patent No. 2 301 793 – Ballard 6,032,127). Patent Infringement suit/counter-suit. Development extensive claim analysis; detailed analysis prior-art competitive patents; development of written testimony and planned delivery of Testimony at trial (the quality of the claim analysis and testimony – about 200 pages raw plus about 2000 pages of ancillary materials eventually led parties to settle out of court.)
2	Baker & McKenzie	Texas Bank (Lost track)	2006	Generation of prior art for <u>digital imaging/ check scanning</u> lawsuit against Texas Bank.
1	Schiff Hardin	AT&T Wireless	2002	<u>Breach of Contract; Theft of Trade Secrets; Conspiracy; Fraud</u> . Aeronautical VoIP/ISDN. In-Flight Phone Corp. v. AT&T Wireless, Claircom Communications, McCaw Cellular. Reviewed extensive amounts of evidence; provided expert consultative assistance; developed testimony; 16 hrs of video depositions and appeared in Court as testifying expert on all aspects of Air-to-Ground telephony (ground station and airborne terminal); assessed <u>In-Flight' VoIP-based telephone system</u> . Our side prevailed (AT&T Wireless).