David B. Lett mobile (770) 335-8119 lettinnovations@gmail.com www.linkedin.com/in/David-Lett

Expert Witness, CTO

Technology industry veteran with electronics/software/hardware/video/audio/data expertise.
IoT | Consumer Electronics | Telecommunications | Cable | Satellite | Broadband |Wireless

- Expert witness testimony, technical consulting, and expert reports for renowned patent law firms such as Fish & Richardson and Banner Witcoff.
- 86 Patents and Patent publications. Served on corporate patent boards and as 30(b)(6) witness.
- Uniquely broad hardware/software/systems technical understanding.
- Award winning design and development including Best of Show, Technology Emmy, and Best of Innovations of over 100 million shipped products, responsible for $1.3B annual revenue.
- Industries: Consumer Electronics, Cable, Satellite, Internet of Things (IoT), Telematics, Smart Truck Logistics, Transportation, Alarm Systems, Smart Tank monitoring & fulfillment, Television, Telecommunications, Video, Audio, Wireless, Broadband, OTT Video, IPTV, Payments
- Technical: hardware design, software design, systems design, mechanical design, embedded systems, cloud computing, AWS, Azure, OCS, SaaS, fog computing, edge computing, high speed digital, C, Java, Linux, mobile applications (IOS and Android), web applications (Java, JavaScript, HTML), firmware, RTOS, user interfaces, UI/UX, video, audio, data, RF, DSP, communications, cybersecurity, encryption, error correction coding, real-time systems, cable, CATV, DOCSIS, broadband, satellite, satcom, IPTV, OTT video, video streaming, wireless, cellular, 3G, 4G, LTE, LTE-M, 5G, NB-IoT, Cat-M1, WiFi, ZigBee, Z-Wave, Bluetooth, LoRa, Internet of Things (IoT), IIoT, Machine-to-Machine (M2M), Telematics, AI, ML, networks, payments, consumer electronics, and telecommunications.

EXPERIENCE

Nov. 2016-present**, Expert Witness/CTO**, Independent Consultant
Technology, product development, organizational, & intellectual property consulting

- Expert Witness Reports - Declarations, Opinions, Inter Partes Review (IPR) Petitions and Defense
- Expert Witness Testimony - Depositions, Arbitrations, Trials
- Intellectual Property/Patent assistance, prosecution/defense strategy, search
- Technical Consulting

Jul. 2019 – June 2022, **Chief Technology Officer (CTO), Telular**, an Ametek Company**,** Greater Atlanta Area

- Responsible for global engineering, corporate technical strategy, and technical representation.
- Developed SaaS, mobile, and hardware products for Industrial IoT (IIoT) businesses including transportation, tank monitoring, petroleum logistics, and facility alarm monitoring with 1.4M+ subscribers, sold under the SkyBitz and Telguard brands.
- Led the development of an IoT Toolkit (scalable platform and APIs) to extend the Telular IoT platform for all 60+ (and growing) AMETEK companies, enabling development of high- value IIoT recurring revenue web and mobile applications.
- SaaS, Cellular, 3G, 4G, LTE, LTE-M, 5G, NB-IoT, Cat-M1, BLE, Satellite, cloud, distributed systems, Azure, Oracle Cloud, IoT, AI, ML, M2M, hardware, GPS, solar, low-power design, broadband, firmware, software, systems, architecture, video, mobile apps, web apps.

Aug. 2011 – Oct. 2016, **Vice President of Engineering, Head of the Atlanta R & D Center, EchoStar Technologies**, Greater Atlanta Area ($3B revenue, Engineering for Dish Network with a common controlling stockholder)

- Developed products for Dish Network and international customers including highest volume set-top boxes, H.265, HEVC, 3D, Satellite, MoCA, transcoding, Embedded C Linux applications, mobile applications (IOS and Android), SaaS, and web applications (Javascript, HTML). Provided product lifecycle support of contract manufacturers, test methodologies, customer service, QA, marketing, and sales.

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- Led the architecture and global development of a huge end-to-end secure IoT cloud/fog/edge Platform for the consumer security & smart home market and other adjacent markets. Established the unique TV and mobile UI and MyLocal911 patented self-monitored security paradigm. System architecture consisted of 32 cloud systems and 24 CPE products. Systems included BSS/OSS, AWS cloud storage, 2-way video/audio streaming, authentication, provisioning, software download, command and control, customer service, online storefront, 911 emergency VoIP, logistics, CPE, and mobile applications. Represented the platform at trade shows.
- Functioned as a general manager in roles and responsibilities including vision, operations, business results, product management, program management, complex projects and services, hardware/software/systems product development of video, Internet of Things (IoT), and mobile application products.
- **Winner of the prestigious Best of Show award at the 2013 CES for the Hopper** because of the Hopper Transfers functionality and mobile applications.
- **Won 2015 CSI award "Best smart home product, technology or service".**

Aug. 1990 – July 2011, **Vice President of Engineering, Cisco / Scientific Atlanta**, Greater Atlanta Area
($35B / $1.9B revenue companies respectively. Cisco acquired Scientific Atlanta Feb. 2006)

- Intellectual property – served on the corporate patent board, provided patent assistance, and testified in patent litigation cases including as a 30(b)(6) witness representing the corporation.
- Responsible for the hardware/firmware/software/mechanical/systems/architecture/ASIC requirements design and development of several generations of high volume set top boxes and other products with extensive data communications and multimedia capabilities and advanced features including DOCSIS 1/2/3 and hybrid gateways, 802.11, IPTV, DVR, cable modems, ADSL, VDSL, DVB-T/C/S, bootloaders, factory diagnostics, application frameworks, Nagra, DRMs, conditional access, secure microprocessors, device management, Android, Adobe Flash, Linux, DVD play/record, MPEG-4, MPEG-2, H.264, NTSC, PAL, DAVIC, MoCA, high-performance CPUs, cablecards, network processors, HDMI, multiple video/audio display interfaces, 2D/3D graphics, multiple RF tuners, and full spectrum tuners.
- Products developed supported worldwide video, audio, power supply, and regulatory standards.
- Developed products manufactured in company factories, contract manufacturers (CMs), Original Design Manufacturers (ODMs), and Joint Design Manufacturers (JDMs).
- Developed processes and practices to ensure success in high quality, high volume, low cost, and fast time-to-market product development.
- Architected Video-On-Demand (VOD) systems.
- Architected robust software download system to ensure network disaster recovery to avoid truck rolls. Received some of the **industries' first downloadable software patents and an electronic program guide patent**. Developed the downloadable software system, enabling the applications software development business which evolved into a major corporate strategic business objective.
- Responsible for the total value proposition strategy internally in the organization through process design and externally facing customers to propose innovative solutions that add value and differentiate our offering.
- Established and managed department capex and opex budgets and manpower planning.
- Achieved unprecedented 3%/qtr product cost reductions for all products during the product lifecycle.
- Highly reliable products never had a field recall, which would have been disastrous to the business due to truck roll costs.
- Established software development department and software development practices including software processes, code reviews, networked version control and defect tracking, unit test teams, coding standards, and release processes.
- Reduced product development time to market for set top boxes from 14 months to 6 months through continuous process improvement
- Scaled organization from supporting $10M to $1.3B in sales
- Accounted for more than **70% of the revenues for Cisco's Service Provider Video Technology Group and for Scientific Atlanta Corporation**.
- Award winning design and development of over 100 million shipped products
- **Winner of Technology Emmy in 2012 for Pioneering Development of Multi-Room DVR.**

- **Winner of 2006 CES "Best of Innovations" award for DVR/DVD Recorder/Player.**
- **Winner of Motorola/EE Times Excellence in Innovation Award** in 1994.

Nov. 1985 - July 1990, **Hardware Engineering Manager / Senior Engineer, Wegener Communications, Inc.,** Greater Atlanta Area

- Managed product development of video, audio, and data satellite receivers, modulators, graphics display systems, DSP-based compandors, FSK and PSK satellite modems, multiplexers, forward error correction (FEC) codecs, RF upconverters and downconverters, and baseband analog and digital processing components. Disciplines managed included hardware, ASICs, FPGAs, RF, digital, microprocessors, analog, mechanical, and embedded software.
- Architected and designed forward error correction (FEC) coding systems, PSK modems, and analog control systems for RF modulators and PSK demodulators.

Mar. 1983 - June 1985 (while working at Scientific Atlanta), Assistant Professor, **DeVry Institute of Technology**, Greater Atlanta Area

- Taught evening school courses in microprocessor hardware/software and Electronics

June 1982 – Oct. 1985, **Scientific-Atlanta, Engineer II/Engineer I,** Greater Atlanta Area

- Designed software and hardware including addressable data transmitters, video sync suppression scramblers, transaction format converters, and data channel monitors for addressable Cable Television systems and Set Top Boxes.

EDUCATION

- MSEE course work in Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia
- BSEE, University of Tennessee, Knoxville, Tennessee, with High Honors. Specialization in Computer Engineering. GPA: 3.53/4.00.
- Georgia Institute of Technology Scrum Leadership Certificate, Certified Scrum Master (CSM), Certified Scrum Product Owner (CSPO), Certified Large Scale Scrum (LeSS) Practitioner
- Many short courses in business and engineering.