

Edwin A. Hernandez-Mondragon, PhD

Technologist, Expert Witness & Entrepreneur

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www.eqlacomm.net | www.eqlacorp.com | www.4gexpert.com | www.eqlavator.com

Expertise Areas

- **Cable TV Systems and Broadcasting:** ATSC 3.0, Cable TV Multicasting, DVB-C/T/S, “Cloud to Cable TV,” Set Top Boxes, MPEG Encoding, Streaming, Casting, HFC, DOCSIS Standards.
- **Multimedia Streaming:** OTT Platforms, TV distribution, Music & Video Platforms and automated playlist creation, real-time encoding, CDN, and cloud storage systems
- **Mobile Devices and Systems:** Applications iOS & Android, User Interfaces in mobile, mobile operating systems, Expert in mobility and wireless roaming 2G, 3G, 4G & 5G systems (3GPP specifications)
- **AirInterface, LTE, 5G NR:** Experience with SDRs, OpenAirInterface project, reviewing code for handover, RRC Channels, KPI, and X2/S1AP/XN handoff parameters (3GPP Rel 8-Rel 16)
- **Cloud Storage and Data Synchronization:** GlusterFS, File Systems, Dropbox/S3 integration. Cloud computing, Load balancing, AWS.
- **Wireless Communications:** 5G, 4G, 3G, LTE signaling, WLAN, Software-defined Networks, and RF emulation with a patent in wireless emulation/dissertation on this field.
- **Blockchain:** Bitcoin, Litecoin, Consensus Algorithms, Gossip Protocols
- **Power Management:** Wireless Power Management Issued Patent for Microsoft Wireless Service and Wireless Charging Patent with over 130+ references
- **Personal Area Networking:** Expertise in Personal Area Networks and Wearable Systems. Issued Patent for Windows PAN Driver.
- **Artificial Intelligence and Machine Learning:** Computer vision, machine learning, Python, neural networks, signal processing, speech processing, use of applications for big data, mining.
- **Smart phones and wireless embedded software development:** Personal Area Networking, Virtual Machines and Operating Systems, Bluetooth

Academic Background

Ph.D., **University of Florida**, Gainesville, FL

Major: Computer Engineering,

Research Areas: Mobile Computing, Wireless Networks, Handoff Optimization, and Adaptable Network Protocols, Linear Prediction, Network Emulation

Dissertation: An Adaptive Networking Protocol for Rapid Mobility Environments

Advisor: Dr. Sumi Helal, August 2002

M.Sc., **University of Florida**, Gainesville, FL

Major: Electrical and Computer Engineering

Research Areas: Computer Networks and Intelligent and Information Systems (Artificial Intelligence).

Thesis: Adaptive Sampling for Network Management

Advisor: Dr. Alan D. George December 1999

B.Sc. **Costa Rica Institute of Technology**, Costa Rica

Major: Electronics Engineering

Thesis: Monitoring system for a packet-based data network, RACSAPAQ

Advisor: Dipl-Ing. Luis P. Mendez July 1995

Industry Experience

EGLA CORP, Owner & Founder (10/10 – Present)

Intellectual Property Experts, Expert Witness Services, Damages, Startup & Innovation Assistance, Engineering applications for Infrastructure, Cloud-based Platforms, Telecommunications, NFV, Software-defined Radios, IPTV, mobile, including managing and creating applications for IOS, Android, IPTV, Amazon Web Services, Wireless & Mobile Computing, Artificial Intelligence, Cloud Computing, Research & Development Lab, 3D Printing, IC Design, Device Testing & Claim chart analysis. (eglacorp.com)

- ▶ **Intellectual Property & Technology Expert Witnesses.** Advising strategic acquisitions and IP strategies for technology companies, Infringement reports, Invalidity Contentions, IPR Reports for PTAB, Damages calculations, Forensics, Code Reviews, Clean Room Analysis, assisting trials and attorneys with all Intellectual Property matters.
- ▶ **CloudtoCable** is a patented platform that merges cloud and Cable TV systems and simplifies music and video distribution to web, mobile and Cable TV. Cloud to Cable is servicing operators like CABLE COLOR in Honduras. MEVIA¹ is a "Software as a Service" and a cloud-based platform that enables "*MEVIA Music*" currently in operation in several countries including Brazil, Honduras, and United States. Supplied and maintained REST/SOAP/JSON APIs to handle more than 500K subscribers with SKY TUNES application. Our technologies powered DMX Media before its **\$16M** acquisition by Stingray Digital in 2015 mediamplify.com, cloudtocable.com and www.eglacomm.net

EGLAVATOR, Technology Incubator & Office Spaces, Boca Raton, FL. (3/17 – Present)

Experience: Founder of a Boca Raton-based technology incubator and accelerator with 8 startups in Cloud, 4G/LTE, 5G Systems, Prototyping and development of mechanical, electrical, and software products (www.eglavator.com) 3D Design & Assisting Startups for funding and technology direction: DEMOLIZER (CBS Biomedical), HydraFlush, and SAFEFI. Assisted:

- ▶ CBS Biomedical in Partnership with EGLA CORP – engineering and development of a new version of a DEMOLIZER.
- ▶ HydraFlush, Inc, redesign of mechanical transmission and parts for double-sided toothbrush.

MEVIA STUDIOS & TECH EDTV – Host & Broadcasting –Boca Raton, FL (3/18 to Present).

Experience: As part of EGLAVATOR's TV, Media studio. I host and produce TV shows in technology and business: ASK ALICE, TECHEDTV, and others with over 15 shows/podcasts, covering Mobile World Congress 2019, HIMMS 2019, and others.

MOBILITY WORKX, LLC. Principal, Boca Raton, FL (7/2016 to present)

Experience: Patent commercialization of MobileCAD (Patent 7,231,330) a mobile emulation environment for **3G, UMTS, 4G LTE, & 5G** networks, mobility, PCRF, Diameter routing, RRC Signaling, propagation models simulation, virtual drive testing and RF scenarios and Mobile IPP (US Patent 7,697,508 and US Patent 8,213,417) for seamless mobility LTE, Self-Organizing Networks, S1 Handover, X2 handover, Xn Handover, etc.

- ▶ Handover patents for X2, S1 in LTE Rel9-14 and XN and N2 Handover for 5G NR Rel15-ongoing.

¹ Previously marketed under MEDIAMPLIFY®

Motorola Inc, Principal Staff Software Engineer, Mobile Devices, Plantation, FL (11/07-5/10)

Experience: Google Android Platform/Application Development, Kernel-level prototyping, Data support, implemented HTTP Push/MMS, DRM content management, Webkit and Opera- based browsers, Lead discussions with customer Sprint/Nextel and Nextel International. I defined Android architecture and the concept of iDEN+5, which seeded Android in Plantation. Assisted in licensing negotiations for Motorola as part of the licensing team.

Motorola, Inc Sr. Software Staff Engineer, Mobile Devices, Plantation, FL (11/03 -10/07)

Experience: Feature lead for Java Virtual Machine for Dual-mode devices, J2ME Expert, JSR implementation on BREW architectures, and iDEN/CDMA software interactions. As a feature lead, program management interactions, customer interactions, and 3rd party vendor relationships including licensing (ie Qualcomm). Platform design and development for Windows CE devices and Microsoft Smartphone Platforms, i930 mobile phone.

Microsoft, Technical Program Manager, Windows Networking, Redmond, WA (8/02 - 9/03)

Experience: Feature lead for Bluetooth Personal Area Networking. Responsibilities driving Architecture, Design, Test Automation, security analysis for PAN, and drive testing over networking protocols such as IPv4 and IPv6 networks.

Microsoft, Program Manager Intern, Windows Networking, Redmond, WA (5/01-8/01)

Experience: Wireless Zero-Configuration (WZC) for Windows XP Service Pack, Power Management algorithm using self-similar traffic modeling, and adaptive adjustment of the duty cycle. IEEE 802.11b/g/a services could be optimized to reduce power consumption from 0 to 80% depending upon network traffic characterization.

COMPUNET, Entrepreneur/Lead Engineer Honduras (4/1997-11/09)

Experience: Owner and founder. Cisco/Linux administrator, Webmaster and senior system engineer and owner. Lead developer for: authentication services, security, web, and networking configuration.

Technical Expert Witness for Intellectual Property and Patent Cases

1. **University of Florida Research Foundation, Inc. et. al. vs. Motorola Mobility LLC.** Filed in U.S. District Court for the Southern District of Florida – Case settled in 2014 (**Deposed**)
2. **Virtela Technology Services vs. Andrew Funk**, File in the US District Court of Denver, Colorado, Representing Andrew Funk – Case Settled in 2016
3. **Del Castillo vs. Bank of America** – Representing Bank of America – Case settled 2017
4. **Seven Networks vs. Google** - Representing Seven Networks - 2017
5. **Blue Radios vs. Kopin** - Representing Blue Radios – Colorado - 2017 – ongoing (**Deposed**)
6. **Mobility Workx vs. T-Mobile** – Case Settled – 2017 (**Deposed**)
7. **Mobility Workx vs. Verizon Wireless**, Representing Mobility Workx, LLC in E.D. Texas – 2017 – ongoing (**Deposed**)
8. **Mobile Manufacturer vs. Carrier**, Eastern District of Texas, Representing Mobile Manufacturer (Confidential & Settled) in 2017
9. **Talent Mobile Development vs. Headios Group** (California Federal Court, 2018 Trademark/Mobile Software) – Jury trial testimonial with 700k award to my client (**Trial Testimony**)
10. **Key West Golf Club vs. Cable Provider** – Preliminary study – Key West, FL, 2019
11. **Express Mobile vs. DreamHost, LLC** – Expert Witness – US District Court of Delaware - 2019
12. **Stone vs. AT&T, Velocity** – Expert Witness – Representing AT&T and Velocity – US District of San Diego, 2019 (**Deposed**)

13. **Express Mobile** vs Magento, BigCommerce, others – Representing Express Mobile, U.S. E.D District of Texas and California Northern District, Audited code for client, claim charts, invalidity defenses, 2019 – ongoing
14. **Workspot vs. Citrix** – Expert Witness IPR2019-01002- – Representing CITRIX - PTAB, 2019 - ongoing
15. **DISH Network LLC vs Multimedia Content Management LLC** - IPR2019-01014 and IPR2019-01015, Representing Multimedia Content Management, LLC, 2019
16. **TPI vs Keller Williams, Inc** – Trade secrets, software, Texas, 2020
17. **Bell Northern Research, LLC v. LG Electronics, Inc., et al**, Patents, IPR, California, 2020-ongoing
18. Advising - Pre-trial / 4 Confidential Defendants/Plaintiffs

Damages Expert Witness for Intellectual Property and Patent Cases

1. **Mobility Workx vs. CellCo Partnership (Verizon Wireless)**, Representing Mobility Workx, LLC in E.D. Texas, Daubert challenged, scheduled to testify in court for reasonable Royalty **(Deposed)** 2019
2. **TPI vs Keller Williams**, Damages, Royalties.

Software Audits

- Honduran Government, “National Institute of Properties,” Multi-million dollar platform transferred from the World Bank to the Honduran Government - Code Review for Java, .NET, and Cybersecurity in **2017-2018**
- Auditing of Honduran Elections, Forensics and fraud detection and analysis (Pro-Bono) in 2018

Publications

- J. Zablah, E. Hernandez, et.al “Enhance Honduras Development with Technology Transfer of High-Performance Computing,” World Development Journal, Jan 2016.
- E. Hernandez , "War of Mobile Browsers," IEEE Pervasive Computing, vol. 8, no. 1, pp. 82-85, Jan.-Mar. 2009
- E. Hernandez, A. Ayyagari, “Heavily-tailed Network Traffic Modeling for Power Management”, IEEE Workshop on Performance and Management of Wireless and Mobile Networks Australia, November 2005
- E. Hernandez, M. Chideste, and A. George, "Adaptive sampling for network management," Journal of Networks and System Management (JNSM), Vol. 9, No. 4, Dec 2001.
- E. Hernandez, A. Helal, “Predictive Mobile IP for Rapid Mobility,” IEEE Conf. Wireless Local Networks 2004, Tampa, FL
- E. Hernandez, A. Helal “RAMON: An emulation approach,” IEEE Conf. Local Computer Networks 2002, Tampa, FL
- E. Hernandez, A. Helal, "Examining Mobile-IP Performance in Rapidly Mobile Environments: The Case of a Commuter Train," IEEE Conf. Local Computer Networks 2001, Tampa, FL, Nov 14-16, 2001.
- Helal, S. Shah, E. Hernandez, “Mobility Benchmarking In Ad-Hoc Networks,” The IPSJ Journal, Vol.43, No.11, June 2002. Approx. 15 pp.
- S. Shah, E. Hernandez, A. Helal, “CAD-HOC: A CAD Like Tool For Generating Mobility Benchmarks In Ad-Hoc Networks,” SAINT 2002, Japan, January 2002

Thesis and Dissertation

- E. Hernandez "**An adaptive protocol for rapid mobile environments**," Ph.D Dissertation, University of Florida, August 2002
- E. Hernandez. "**Adaptive sampling for network management**," M.Sc. Thesis, University of Florida, Dec 1999
- E. Hernandez, Y. Lee. "**Monitoring system of a packet data network**," B.Sc. Thesis. ITCR, report, July 1995

Technical Reports and Prior to publications

- E. Hernandez "Mediamply: A Multimedia Platform for MPEG TV Systems," Dec 2015
- E. Hernandez, A. Helal, "RAMON: A network emulation environment," CISE Department, University of Florida, 2005
- E. Hernandez, A. Helal, "Ghost Mobile IP," CISE Department, University of Florida, 2005.
- E. Hernandez, "DMTF: Authentication for Mobile Phones," Motorola, defensive Publication, 2004

Patents and Innovations (12 Issued, 5 Patent Pending)

- E. Hernandez, A. Ayyagari, et al. "Method and system for managing power consumption of a network interface module in a wireless computing device," Microsoft Corporation. **Issued US Pat. 7,564,810**
- E. Hernandez, A. Helal, RAMON, "Rapid Mobility Network Emulator Method and System," University of Florida. **Issued US Pat. 7,231,330**
- E. Hernandez, A. Helal, "System, Apparatus, and Method for Proactive Allocation of Wireless Communication Resources," University of Florida, **Issued US Pat. 7,697,508 and US Pat. 8,213,417**
- S. Poursabahian, E. Hernandez, et al, "Bluetooth PAN Driver," Microsoft Corporation, **Issued US Pat. 7,269,388**
- Krantz, E. Hernandez, et al "Rules-based Network Selection Across Multiple Media," Microsoft Corporation, **Issued US Pat 8,788,715, and 7,996,505**
- V. Bhanu, E. Hernandez, et al, "Smart Scan for Bluetooth PAN Services," Microsoft Corporation." **Issued US Pat. 8,024,487**
- E. Hernandez, K. Ardizzone. "Thumb-based User Interface for Camera Phones," Motorola, Inc, submitted 2005
- E. Hernandez, et al. "Java-based Push to Talk, " **Issued Pat 8,707,337**
- E. Hernandez, "Secure USB Drive," Motorola, Inc, submitted 2005
- E. Hernandez, J. Tracy "Magnetic Connector", Motorola, Inc, **Issued US Pat: 7,331,793**
- E. Hernandez, – **Issued US Pat: 10,123,074, 10,524,007, US Continuation filed,** and European Patent Office (PCT)
- E. Hernandez – Anemometer with Augmented Reality – April 2018 – Patent Application
- E. Hernandez - System, Method, and Apparatus For Virtualized Operations for Biohazard Waste Destruction with Augmented Reality and Voice Commands – Filed – Patent Application (PCT & USPTO) PCT found no prior-art, inventive steps met, and industrial applicability.

Broadcasting, Blogs & Podcasts

- FM Radio & Podcast – **Ask Alice** Show – May - August 2018
- Founder of TECHEDTV, EXPERT WITNESS TV – Host . <http://teched.tv>
- Technical articles at medium.com/@edwinhm and edwinhernandez.com

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