

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STINGRAY GROUP INC. and STINGRAY MUSIC USA, INC.
Petitioners,

v.

EDWIN A. HERNANDEZ-MONDRAGON,
Patent Owner.

Case IPR2025-00351
Patent No. 11,140,441

DECLARATION OF DR. EDWIN A. HERNANDEZ

I, Edwin A. Hernandez, pursuant to 28 U.S.C. § 1746, hereby declare and state as follows:

1. I make this declaration in support of Patent Owner's Preliminary Response in inter partes review ("IPR") Case No. 2025-00351 involving U.S. Patent No. 11,140,441 ("the '441 Patent") (EX1001). I am over 18 years of age and I have personal knowledge of the facts set forth herein.

MY BACKGROUND

2. My general qualifications can be found in my curriculum vitae attached as Appendix A. It includes my educational and professional background, published books, articles, publications, public lectures and conference proceedings. One section details my assignments testifying at depositions and trial as an expert witness.

3. I am the named inventor of the '441 Patent.

4. I am an owner and founder of EGLA CORP, an intellectual property, engineering consulting, and startup accelerator incubator in the fields of a) Wireless Communications, 4G and 5G, b) Cloud Computing and Media Streaming, and c) Health technologies.

5. I have a Ph.D. in Computer Engineering in Mobile Computing in 2002, received a B.S. from Costa Rica Institute of Technology in Electronics Engineering,

and received a M.S. in Electrical and Computer Engineering from the University of Florida.

6. I have been retained as an independent expert consultant in the fields of cable television systems and broadcasting, multimedia streaming, mobile devices and systems, air-interface and Long-Term Evolution (LTE), cloud storage and data synchronization, wireless communications, block-chain technology, power management, personal area networking, and smart phones and wireless embedded software development.

7. My experience in virtual machines, high-performance computing, and cloud systems started back around 1997 when I joined the “High Performance Computing and Simulation” lab at the University of Florida, before virtualization and virtual machines became popular. I worked on Virtual Inter-face Architectures (VIA) and other concepts of distributing computing found in virtualized environment and cloud systems. I also worked with Java virtual machines from around 1999, as well as other virtual machines such as J2ME, when I joined the “Harris Mobile Computing” lab at the University of Florida around 2000

8. My experience with data centers, routers, servers, and small to large IT deployments started back in 1995 when I founded COMPUNET, an Internet Service Provider and hosting company located in Honduras. I was the owner and lead engineer from 1997 to about 2009. While at COMPUNET, I was a lead developer

working on authentication services, security services, web services, and net-working configuration services, and became an expert in networking, configuring Cisco Routers. Among other tasks I implemented a TACACS+ client for authentication of PPP/SLIP Accounts for a dial-up system in 1997-1998 that allowed authentication from a Cisco Router with dial-up to a server with Linux user accounts.

9. I also worked for Microsoft from around 2001 to 2003 as a Technical Program Manager. In that position, I was responsible for driving architecture, design, test automation, and security analysis for Bluetooth Personal Area Networking (PAN). I also drove testing over networking protocols, such as IPv4 networks and IPv6 networks, including early versions of 802.11b and candidates in the 2.4GHz bands that uses Frequency Hopping Spread spectrum.

10. As part of my PhD, I became an expert in RF system simulation, including propagation models, and selection of appropriate modulation techniques based on SNR (Signal to Noise Ratios) and other parameters experimented using 802.11b technologies and SISO Antennas. I was a teaching assistant and researched mobile virtual machines and other virtualized environments.

11. I also worked for Motorola, Inc. from 2003 to 2010 as a Principal Staff Software Engineer. In that position, I was responsible for application development for Google and Android platforms. I participated in kernel-level prototyping, data

support, and digital rights management (DRM), and extensively used QEMU and other emulators to create virtual machines for mobile phones.

12. I have run my own IT environments and have managed Windows Network systems since Windows NT existed. I was trained to configure, install, program routers, Linux servers, firewalls, Domain Controllers, and all server-based infrastructure deployed in a server farm back in 1996 when the Internet was becoming generally used. .

13. I started using new technologies and updated virtualized environments as early as 2011 as part of the launch of my multimedia products. I ran a server virtualized cloud from a company called iWeb and FAU's Research Park Data Center, which I later migrated to a data center located in Equinix in Boca Raton, FL, and later migrated it again to my offices where I had a setup with 4 racks and over 25+ physical servers.

14. I had many years of experience in mobile technologies, hotspots, computing systems, storage, sensors, and technologies Android, IOS, and other streaming TV technologies.

15. As part of my streaming experience, I have worked several years in MEDIAMPLIFY, a streaming technology, including embedded technologies and systems for image processing, video transmission, video encoding, and other capturing & distribution of images and video files.

16. My data center environment hosted several applications including a server that was called MEDIAMPLIFY. As part of the system, I used Gluster File System for virtualized disks, used Open Stack to process of migrating Virtual Machines from one server to another and migrated data to Amazon Web Service. This platform serviced several operators including SKY BRASIL for an application called “SKY TUNES” with 1000’s of subscribers and provided access from that our cloud to several APIs used for metadata and streaming hosted by my own infrastructure and cloud-based platforms.

17. Starting in 2010, I founded EGLA CORP, where my streaming platform evolved to become MEVIA applications and Cloud to Cable patents. MEVIA is a “software-as-a service” and a cloud-based platform that enables “MEVIA Music,” which is currently in operation in several countries including Honduras.

18. Additionally, in and around 2015, I assisted a company called, Cirrus Core Networks with their virtualized “Network Function Virtualization” and hosted in my data center their virtualized 4G infrastructure. I have worked on 3GPP protocols, including analyzing Wireshark traces with different RRC messages, hence creation of message sequence diagrams, and other technologies including Evidence of Use (EOU) charts. Also, in years 2019 and 2020, I was a judge for the Mobile World Congress in Barcelona, Spain, reviewing projects in 4G and 5G RF,

Infrastructure, Network Slicing, and other advanced techniques used by worldwide carriers.

19. I am also a very experienced software engineer and have worked with code, not only as a developer but also conducting code reviews as an engineer and for legal matters as an expert witness in cases involving Sprint, NetApps, Magento, MediaTek, Qualcomm, and several other companies. Including programming languages and scripts in PHP, Java, Javascript, Graddle, VHDL, C/C++, Python, and C#. I am very familiar with several scripting languages, and am an avid user of Command Line Interfaces (CLI). My experience as a developer dates back to the 1990s when I was in high school and continues to date. Recently, I wrote a new encoder for my MEVIA Platform and live streaming, including minting of Non-Fungible Tokens (NFTs) and Cryptography, and more recently demonstrations using LSTM and Machine Learning technologies.

20. In my career, I have audited and configured large and sensitive IT systems, including a full audit of a Windows-based cloud used by the institution in charge of keeping all title records for all land, homes and commercial buildings in Honduras. The platform included geographic databases for the entire country and many firewalls and routers. I was responsible for auditing Fortinet firewalls, Cisco switches, and an on-premises computing system where those sensitive records were

stored. Their platform was originally created and funded by the World Bank, which invested \$10 million in software for the platform.

21. Additionally, in my research I have been involved aspects of network security, wireless communications, network and communications reliability, artificial intelligence, multimedia streaming, and software engineering.

22. I am a named inventor on thirteen patents issued by the United States Patent and Trademark Office, including the following:

- U.S. Patent No. 7,564,810 - Method and System for Managing Power Consumption of a Network Interface Module in a Wireless Computing Device
- U.S. Patent No. 7,231,330 - Rapid Mobility Network Emulator Method and System
- U.S. Patent No. 7,697,508 - System, Apparatus, and Method for Proactive Allocation of Wireless Communication Resources
- U.S. Patent No. 8,213,417 - System, Apparatus, and Method for Proactive Allocation of Wireless Communication Resources
- U.S. Patent No. 7,269,388 - Bluetooth PAN Driver
- U.S. Patent No. 8,788,715 - Rules-based Network Selection Across Multiple Media

- U.S. Patent No. 7,996,505 - Rules-based Network Selection Across Multiple Media
- U.S. Patent No. 8,024,487 - Smart Scan for Bluetooth PAN Services
- U.S. Patent No. 8,707,337 - Java-based Push to Talk
- U.S. Patent No. 7,331,793 - Magnetic Connector
- U.S. Patent No. 10,123,441, 10,524,002, 11,140,441 and 12,075,116 - Method, System, and Apparatus for Multimedia Content Delivery to Cable TV and Satellite Operators
- And others,

23. I have assisted several IPRs and provided testimony on handover patents for Pico Cells, LTE, IEEE 802.11 beamforming, Wearables, Bluetooth, and other wireless technologies that have been licensed by companies like Verizon Wireless. As part of my Incubator, for the past 6 years I have represented several startups and technologies in licensing agreements with partners and vendors. I have also opined in Federal court on damages and royalties for technology companies and assisted multiple economic experts in damages.

24. As part of my incubator, I reviewed over 50+ technologies and licensing of intellectual property to provide feedback and advice according to industry parameters during due diligence and capital raise.

25. My educational and work experience over the last 3 decades has provided me with the qualifications to evaluate Patent claims.

MATERIALS CONSIDERED

26. Among the materials I considered in forming my opinions are the '441 Patent, patents related to the '441 Patent, their prosecution histories, the Petition in this IPR, and materials cited in the Petition, and documents identified in this declaration.

PERSON OF ORDINARY SKILL IN THE ART

27. Based on my experience, it is my opinion that a person of ordinary skill in the art at the time of the inventions in the Asserted Patents ("POSITA") would have had a Bachelor's Degree in computer science or a related field, and at least two years of experience working in the field of software systems used in generating and broadcasting multimedia streams. An individual with less technical education but more experience, or vice versa, could also qualify as a person of ordinary skill in the art. I consider myself as qualified to speak knowledgeably about the understanding of a person of ordinary skill in the subject of the Asserted Patents.

LEGAL STANDARDS

28. I have been informed that the words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art in question at the time of the invention when read in the context of the

specification and prosecution history. In this respect, I have been informed that the POSITA is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.

29. I have been further informed that first, one looks to the words of the claims themselves to define the scope of the invention. After considering the claims themselves, the analysis turns to the specification, which is always highly relevant and the single best guide to the meaning of a disputed term. If the specification contains the patentee's clear lexicography or disavowal, such an explicit definition or manifest exclusion governs. But care must be taken because the written description is not a substitute for, nor can it be used to rewrite, the chosen claim language.

30. I have been informed that it is also proper to look at the prosecution history in interpreting claim terms, but that because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. In particular, I have been informed that courts do not rely on the prosecution history to construe the meaning of the claim to be narrower than it otherwise would be unless the patentee limited or surrendered claim scope through a clear and unmistakable disavowal.

31. I have been informed that the Court also may, but is not obligated to, consider “extrinsic” evidence to determine the meaning of claim language. However, in most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term and that extrinsic evidence is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.

32. I understand that the claims of an issued patent are presumed to be valid. The basis for the presumption of validity is the fact that the allowed claims went through a rigorous examination process at the U.S. Patent Office.

33. I understand that Petitioner has the burden of proving invalidity by a preponderance of the evidence, and that the burden of proof never shifts to the plaintiff to prove the validity of the ‘441 Patent.

34. I understand from counsel for Patent Owner that invalidation by anticipation occurs only when a single alleged prior art reference discloses each and every limitation of the claim at issue, either expressly or inherently. In other words, every limitation of the claim must identically appear in a single prior art reference for the reference to anticipate that claim. I also understand that all elements of the claim must be disclosed in the reference as they are arranged in the claim.

35. I understand that to be considered anticipatory, the prior art reference must be enabling and must describe the patentee's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention.

36. It has further been explained to me by counsel for Patent Owner that a claim is obvious pursuant to 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. As such, I understand that a claim is valid unless the differences between the claimed invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the claimed invention pertains.

37. It has further been explained to me by counsel for Patent Owner that the following factors are used to make an obviousness determination: (i) the scope and content of the prior art; (ii) the level of ordinary skill in the art; (iii) the differences between the claimed invention and the prior art; and (iv) objective or secondary considerations of nonobviousness. Any relevant objective factors or secondary considerations of non-obviousness, which may include commercial success of a product using the invention, if that commercial success is due to the invention; long-felt need for the invention; evidence of copying of the claimed

invention; industry acceptance; the taking of licenses under the patent by others; initial skepticism; failure of others; and praise of the invention.

38. I understand that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art. But multiple prior art references or elements may, in some circumstances, be combined to render a patent claim obvious. I understand that I should consider whether there is an “apparent reason” to combine the prior art references or elements in the way the patent claims. Requiring a reason for the prior art combination protects against the distortion caused by hindsight. Along the same lines, one cannot use the asserted patent as a blueprint to piece together the prior art in order to combine the right ones in the right way as to create the claimed inventions. To determine whether such an “apparent reason” exists to combine the prior art references or elements in the way a patent claims, it will often be necessary to look to the interrelated teachings of multiple patents, to the effects of demands known to the design community or present in the marketplace, and to the background knowledge possessed by a person having ordinary skill in the art.

39. It has further been explained to me by counsel for Patent Owner that the motivation to combine must be more than mere conclusory statements and that a generic motivation to combine known elements is insufficient to establish

obviousness. I understand that the motivation to combine prior art references must be identified in the Petition.

40. I understand that when the prior art “teaches away” from combining prior art references or certain known elements, discovery of a successful means of combining them is less likely to be obvious. A prior art reference may be said to “teach away” from a patent when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the patent or would be led in a direction divergent from the path that was taken by the patent.

41. I understand that in developing opinions as to whether or not certain claimed subject matter would have been obvious, each claim of a given patent should be considered in its entirety and separately from any other claims. In so doing, it is my further understanding that while I should consider any differences between the claimed invention and the prior art, I should also assess the obviousness or non-obviousness of the entirety of a claim covering an alleged invention, not merely some portion of it.

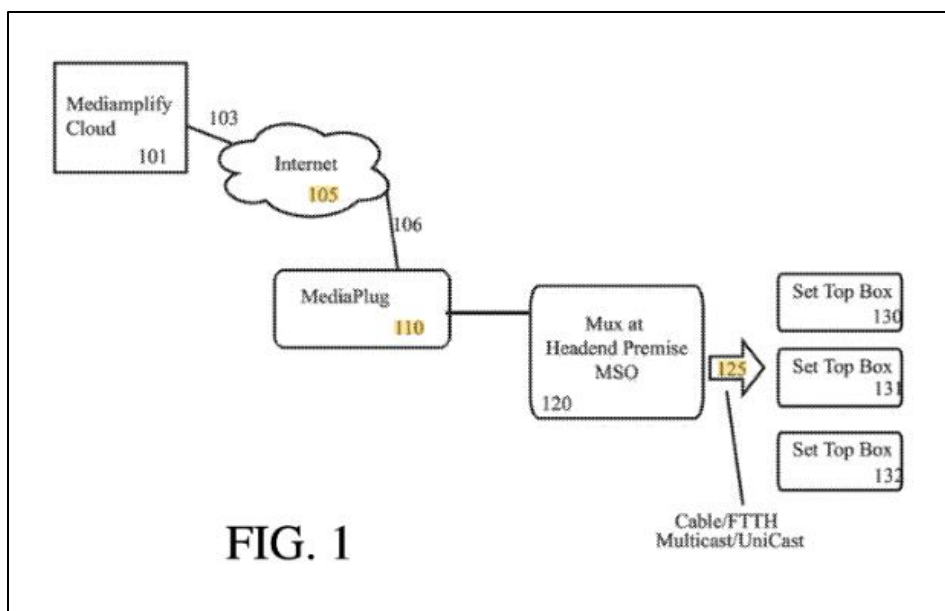
THE ‘441 PATENT

42. The ‘441 Patent is directed to novel systems and methods to deliver multimedia content from the cloud to cable operators. EX1001, ‘441 Patent, Abstract. Conventional systems required satellite systems “to deliver data (*e.g.* TV, radio, Video-on-Demand, multimedia streams) from a particular source (*e.g.* third-

party content provider) to cable head end systems or other satellite systems.” *Id.*, 1:61-64. Recognizing these and other drawbacks, Dr. Hernandez set out to develop a system that eliminates the need for satellites while maintaining fault tolerance and reliability, among other additional advantages. *Id.*, 3:63-66.

43. The ‘441 Patent “describes a novel method and a system for continuous media delivery and secured synchronization of multimedia files that are broadcasted to set top boxes or subscriber units in the field that are connected to [Internet Protocol Television] IPTV or Cable Systems. The present technology...securely connect[s] to a cloud-based platform (*e.g.* OpenStack, Amazon EC2, Mediamplify Cloud, etc.), creates a set of multimedia files (*e.g.* MPEG4 movies) into a secured repository (*e.g.* Secured File System, Linux/Windows, etc.), modifies those files according to certain rules as defined by the method herein, and reproduces those signals via a multicast video stream (*e.g.* User Datagram Protocol (UDP) multicast, etc.) encapsulated in a Transport Stream (TS) frame” for broadcast in multiple or single transport streams. EX1001, 1:24-41.

44. As shown below, in FIG. 1, the disclosed technology introduces an innovative delivery mechanism for multimedia content distribution to cable and other delivery systems.



45. At the core of this system is a sophisticated cloud computing environment (*e.g.*, AWS) that can be implemented through various virtualized or non-virtualized server instances (shown in FIG. 1 as Mediamplify Cloud). This cloud infrastructure provides secure access to archived media content and digital files. The cloud service files are accessible via internet connectivity and are stored in advanced cloud-based or cluster file systems. These systems house multimedia files, primarily consisting of encoded video and audio files. EX1001, 3:66-4:14.

46. The cloud infrastructure is connected to various communication channels (*e.g.*, DSL, Cable Modem, Wireless WAN, Fiber, or Ethernet) via a computer or server (or set of computers or servers), shown in FIG. 1 as the MediaPlug 110. The MediaPlug computer/server resides at the Multiple System Operator (MSO) facility alongside other cable or satellite operator equipment. The MSO facility serves as the central hub where the cable operator receives,

multiplexes, re-encodes, and distributes TV and Radio Programming to subscriber units with set-top boxes or modulates signals for analog TV channels. EX1001, 4:17-27.

47. The MediaPlug's computer/server's primary function is to deliver multimedia content to an MPEG multiplexer at the headend, which receives, processes and transmits the communication signals. This content arrives at the headend pre-formatted in MPEG Transport Streams, allowing the multiplexer (shown as Mux at Headend Premise MSO 120) to capture and reformat the content according to operator/content provider's requirements before distribution to end user/subscribers via Coaxial Cable or other multicast/unicast delivery methods. The end users receive this content through their Set Top Boxes, which are located at the end user/subscriber's home and are capable of decoding and displaying TV programming through HDMI or analog inputs. EX1001, 4:28-40.

48. Claim 1 of the '441 Patent, recites:

1. A computer implemented method, comprising:

[1.1] creating a plurality of multimedia assets at a caching unit, for each one of the plurality of multimedia assets:

[1.1][a] determining that there is sufficient storage space for the multimedia asset at the caching unit;

[1.1][b] generating a channel identifier for the multimedia asset;

[1.1][c] retrieving from a cloud service a plurality of media files to be included in the multimedia asset including a media identifier for each one of the media files;

[1.1][d] for each one of the media files, creating a custom hypertext transfer markup language (HTML) user interface that includes video;

[1.1][e] encoding each of the media files and encapsulating them together using an MPEG transport stream format;

[1.2] storing each one of the multimedia assets at the caching unit;

[1.3] receiving a request at the caching unit for one of the multimedia assets from a broadcasting unit; and

[1.4] responsive to receiving the request, the caching unit providing the multimedia asset to the broadcasting unit in the MPEG transport stream format.¹

EX1001, 14:53-15.

¹ Petitioners' listing of the claim elements (Pet., viii, identifying them as 1a-1i) is confusing in that it fails to distinguish which limitations are incorporated within other limitations. That is, the recited claims make clear that, using Petitioners' scheme, elements 1b-1f are part of element 1a. Petitioners presumably list the elements this way to de-emphasize that elements 1b-1f are part of "creating the multimedia assets at the caching unit" recited in element 1a because Farber does not disclose the recited caching unit, much less performing these steps at the caching unit.

49. Simply put, the claimed methods start with a content provider (*e.g.*, cable or satellite television operator) requesting a media stream to broadcast on one of its media channels. The media stream includes different types of media such as audio and video content (*e.g.*, music and video images, respectively). To provide the requested media stream, content from a web page is obtained (via the cloud-based system) and rendered by a browser. Once the web page is rendered, a time-based sequence of screen captures is generated with at least two adjacent screen captures illustrating a change in the content over time. This sequence of screen captures is assembled into a media stream (*e.g.*, HTTP live stream, HTTP playlist, or Real-time Streaming Transport (RTSP) stream) and provided to the content provider (*e.g.*, cable operator) to broadcast over a media channel.

50. Claim 10 of the '441 Patent, recites this claimed method.

10. A computer-implemented method comprising:

[10.1] virtualizing a system including a virtualized caching server, wherein the virtualized caching server performs:

[10.1][a] receiving from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;

[10.1][b] obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;

[10.1][c] rendering a web page by a browser using the content;

[10.1][d] generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;

[10.1][e] assembling the at least one media stream using the temporal sequence of screen captures; and

[10.1][f] providing the at least one media stream to the content provider for broadcast on the broadcast media channel.

EX1001, 15:34-57.

51. Avellan is entitled “System and method for zero latency browsing” and is directed to “[a] system [that] replicates Internet websites on a large number of user computers having browsers.” EX1004, Abstract. Avellan discloses that “[t]he present invention is directed to a system and method for providing high definition (HD) Internet in a near-zero latency environment. The current invention addresses latency and bandwidth efficiency by managing Internet access more efficiently and with user performance that allows viewing and interaction with web pages

significantly faster than legacy systems available today over terrestrial, wireless, fiber and satellite links.” EX1003, 2:16-23.

52. To accomplish this goal, as shown in FIG. 1 below, Avellan discloses a system “for replicating Internet websites on a large number of user computers having browsers.” *Id.*, 2:24-26. Avellan further discloses that “the system 100 provides for user computers 104₁ – 104_n to access the Internet 150 and/or private cloud 152 through a virtual browser 106 of the gateway 130.” EX1003, 4:18-21. Avellan explains that “the browser software 106 resides at the gateway 134, and is configured to run as a virtual browser as a remote client of the gateway server 134.” *Id.*, 4:56-58. “The gateway server 134 then images those web pages (which are typically in an HTTP format) to a video or image frame format.” *Id.*, 4:65-67.

53. As shown below in FIG. 1, in operation, Avellan explains that “[i]f the user requests a web page, the user computer 104 checks its local storage device 110 for the desired information. If the requested information has been previously broadcast and stored in the storage device 110, that information is immediately displayed in the browser 106.” EX1003, 6:38-43. On the other hand, “[i]f the information is not stored in the cache 136, the server 134 replicates the action point to the website on the Internet cloud 120. The website response is then imaged, compressed and returned to the browser 106 using a differential burst video transmission via the satellite 102.” *Id.*, 6:49-54.

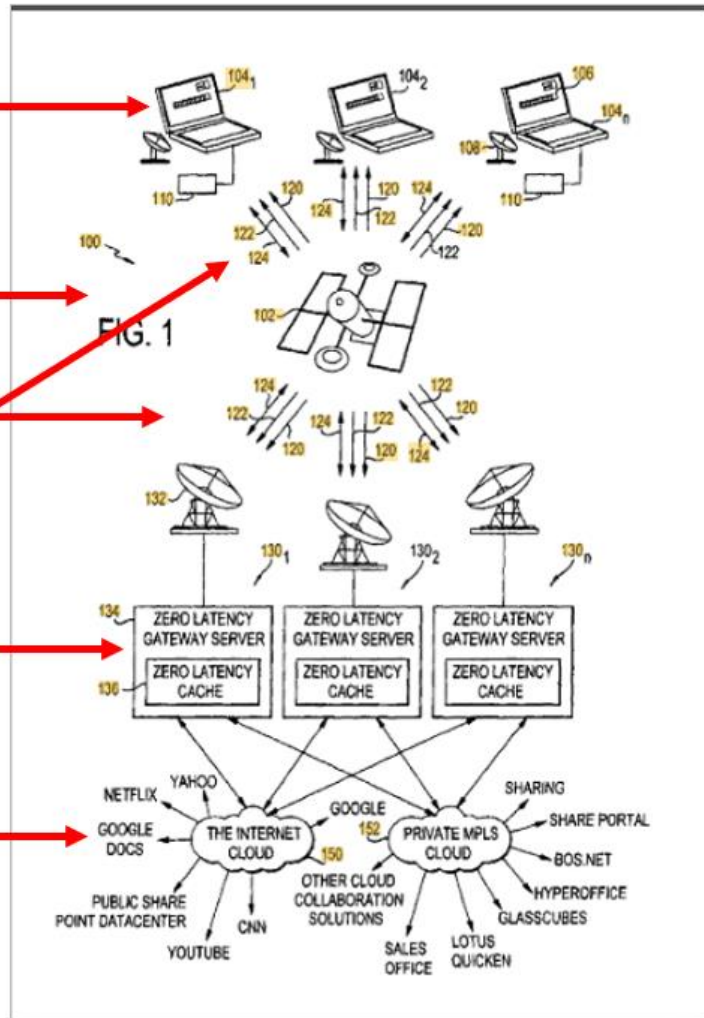
Computer users request media stream

Satellite transmits data

One way or bi-directional data links

Gateway server receives users requests, obtains web content, provides to users

Web content accessible via cloud



54. Avellan discloses that it has two primary modes of operation, a unicast mode and a broadcast mode. EX1003, 6:65-7:1. The “unicast mode is used to send highly customized information from a single website at network 150, 152 to a single user computer 104 in real time as it is requested by the user.” *Id.*, 7:2-5. The “broadcast mode is used to send information that is accessed by a large number of users from a single website at network 150, 152 to a large number of user computers 104.” *Id.*, 7:11-13. To reduce latency, Avellan teaches that “the broadcast mode operates proactively, before the user requests any broadcast data, so that the

information is immediately available for display in the browser 106 when the user subsequently desires to access it.” *Id.*, 9:7-10.

55. Avellan thus teaches that users request website content using user computer 104 through a virtual browser 106. When a user wants to view a webpage, they make this request through the browser interface. EX1003, 4:19-25, 6:26-37, 6:38-43, 7:2-15; 8:23-32, 8:34-41. In broadcast mode the process flow is that the gateway server proactively identifies popular websites, proactively retrieves the website information from the internet, captures the data, compresses it, stores it, and broadcasts it to multiple users at one time, who store that data locally so it is available when the user requests it. *Id.*, 8:14-57, 9:7-10; FIG. 2. In contrast, in unicast mode the user requests a specific webpage, the browser checks if it is stored locally, if not, the browser sends the request to the gateway server, the gateway checks its cache and, if the requested data is not found, it searches the Internet, once found it renders the web page, compresses it, then immediately transmits it to the user without delay. *Id.*, 13:21-59; FIG. 2; *see also* 7:53-58 (“Since the unicast mode is for customized information, the unicast data is sent in real time without delay, directly from the network cloud 150, 152 via the gateway platform 130 and the broadcast device 102 to user computer 104, where it may be immediately displayed (once decompressed at the computer 104).”).

56. Farber is directed to “a method and system for displaying content while prolonging the life of a display by reducing phosphor burning on the display.” EX1003, 1:18-20. Farber thus addresses the problem of screen burn-in with cathode ray tube (CRT) displays. Farber describes that screen burn-in occurs because “displayed images may contain various stationary content such as pictures, text, graphics or other stationary content” and, “in the case of text, a sharp contrast may exist between the glowing areas of the text and the adjoining areas of the screen. The stationary aspect of the image, and especially the sharp contrast combined with the stationary aspect, causes uneven phosphorescent material wear characteristics between adjacent localized areas on the screen. Damage can result to the phosphorescent screen in these areas such that images are burned into the screen leaving an undesirable permanent scar in the phosphorescent coating.” *Id.*, 1:22-59.

57. Farber purports to address the CRT screen burn-in problem using multiple templates that contain graphic objects to form a video frame or screen. The graphic objects are re-arranged from template to template, which are then alternatively displayed based, for example, on a time interval thus avoiding burn-in by avoiding displaying the same screen for a prolonged time: “[a] plurality of assets or ‘graphic objects’ that may include text, graphics, and video are stored and then gathered. These assets are then assembled based on a template to form a video frame or ‘screen’, which is subsequently output to a display. Based upon a trigger, the

assets are gathered again and reassembled based on a second template to form a second video frame or ‘screen’“ wherein the assets are in positions on the screen, which are different from those of the first screen. The second screen is subsequently output to the display.” EX1003, 2:59-3:2.

58. A person of ordinary skill in the art at the time of the inventions in the ‘441 Patent would have had a bachelor’s degree in computer science or a related field, and at least two years of experience working in the field of software systems used in generating and broadcasting multimedia streams. An individual with less technical education but more experience, or vice versa, could also qualify as a person of ordinary skill in the art.

59. Petitioners offer a similar definition, albeit with an important difference. Unlike the subject matter of the ‘441 Patent, their definition is not focused on software systems used in generating and broadcasting multimedia stream, but on multimedia “processing or delivery using internet protocols.” Pet., 10. Those skilled in the art would understand that this focus is generally hardware-based whereas the subject of the patent is a software-based solution to broadcasting multimedia streams, and the skillset and expertise in hardware-based systems would not make one knowledgeable about software-based systems.²

² Not surprisingly, Petitioners’ expert’s experience is rooted in hardware relating to data communications over the Internet rather than software solutions as reflected in the claimed inventions.

60. The terms of the ‘441 Patent are used in their ordinary and customary manner. However, given Petitioners’ different interpretations of the term “content provider” in petitions addressing related patents, Patent Owner submits the understanding of a person of ordinary skill in the art for this term in the context of the patent’s surrounding claim language and specification. Intrinsic support for this term, along with proposed construction, is set forth below.

61. I agree with Patent Owner’s construction that the plain and ordinary meaning of the term “content provider” means to a POSITA “a third party such as a cable television or satellite television operator, or any other multimedia outlet, that requests and receives multimedia content for playback on a broadcast media channel.”

62. The challenged claims recite, in pertinent portion, “receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel...” EX1001, 15:38-40. One the media stream is assembled per subsequent steps recited in the claims, the claims require “providing the at least one media stream to the content provider for broadcast on the broadcast media channel.” *Id.*, 14:53-55. Thus, the claim language plainly states that content provider (1) requests a media stream, (2) receives the requested media stream, and (3) uses the media stream for broadcast on a broadcast media channel.

63. “The present disclosure provides a mechanism for ***delivering multimedia content*** from a cloud-based system ***to cable or satellite content providers.***” EX1001, 1:21-23.

64. “An example computer-implemented method can ***receive, from a content provider such as a cable or satellite operator, a request*** for at least one ***media stream for playback on a broadcast media channel.***” EX1001, 2:56-57.

65. “The media stream can be ***provided [] to the content provider for broadcast on the broadcast media channel.***” EX1001, 8:20-22.

66. The proposed construction thus is consistent with the patent’s specification and makes clear the role of the content provider in requesting a media stream, receiving the requested media stream, and using the media stream for playback on a broadcast media channel. This construction is consistent with the surrounding claim language that differentiates the content provider who requests and receives the multimedia stream from the claimed system components that obtain and render content, generate and assemble the multimedia stream, and provide the multimedia stream to the content providers. Those skilled in the art would understand that it would be nonsensical for the content provider to request and receive something that it itself creates and provides. Such an interpretation would render the requesting and receiving steps unnecessary and meaningless.

67. While Petitioners acknowledge that terms are typically given their ordinary and customary meanings, they did not offer any construction for any terms. Pet., 15. Instead, they assert that “the prior art invalidates the Challenged Claims under any plausible construction.” *Id.* Even though they offered no construction of their own in the Petition, in the parallel litigation Petitioners took exception to Patent Owner’s construction, arguing, in essence, that the “claim language does not specify nor limit the claims to a ***specific corporate configuration*** of content providers or cable/satellite operators.” EX2005, 1. Plaintiffs read too much into the proposed construction. The point is that the claims differentiate between the broadcasting entities (*e.g.*, cable television or satellite television operators) who are requesting and receiving the multimedia stream for broadcasting to their subscribers and the other entities that obtain and render content, and generate, assemble, and provide the multimedia stream to such broadcasting entities. As the ‘441 Patent makes clear, this does not require a specific corporate configuration. *Compare* EX1001, 1:45-46 (describing content providers as “Cable operators, Multiple System Operators (MSO), and Digital Satellite Systems (DSS) [who] deliver media content..” to subscribers’ set top boxes) *with* 4:41-46 (describing the system components that provide the multimedia stream to the content providers as “a computer or server or set of computers of servers that can communicate with the Cloud 101 using a standard Local Area Network (*e.g.* Gigabit Ethernet)...[and] can store, encode, and

transmit multimedia files in the format that the cable operator at its MSO requires.”),
FIG 1.

68. Claims 10-26 of the ‘441 patent require, with slight variations in the language, that a **content provider** (1) requests a media stream, (2) receives the requested media stream, and (3) uses the media stream for broadcast on the broadcast media channel. EX1001, 15:38-42 (“**receiving, from a content provider, a request** for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types”);³ *id.*, 15:55-57 (“**providing** the at least one media stream **to the content provider for broadcast on the broadcast media channel.**”).⁴ Avellan, on the other hand, is concerned with providing individual end users with the requested website content with reduced latency. As such, **the request for the content comes from the computer users themselves** who are requesting information from the Internet for their own use as opposed to content providers (*e.g.*, cable and satellite TV operators) who are requesting information to broadcast to their subscribers.

69. Avellan discloses that “[t]he system 100 preferably has two primary modes of operation, a unicast mode to communicate unicast data using differential burst video transmission, and a broadcast mode to communicate broadcast data. Both

³ This limitation corresponds to Elements 10b, 25a, and 26a in the Petition.

⁴ This limitation corresponds to Elements 10g, 25f, and 26h in the Petition.

modes are implemented at the browser 106 and/or the gateway platform 130,” which provides the requested content to the requesting users. EX1004, 6:65-7:5; *see also id.*, 6:37-40 (“If the **user requests a web page**, the user computer 104 checks its local storage device 110 for the desired information.”); 6:19-25 (“The browser 106 also generates and sends commands and a tag file to the gateway server 134 so that the gateway server 134 retrieves **the information desired by the user.**”); 9:7-10 (“Accordingly, the broadcast mode operates proactively, **before the user requests any broadcast data**, so that the information is immediately available for display in the browser 106 **when the user subsequently desires to access it.**”); *see also id.*, 9:66-7:2; 10:5-13 (“By broadcasting the broadcast data to a large number of user computers 104, the system 100 avoids having to bog down the satellite 102 (as well as the gateway server 134) with repeated **individual requests from a large number of user computers 104** for those frequently-viewed sites. Instead, those **individual requests are handled immediately at the user computer 104** itself and the requested data is retrieved from the user storage device 110.”); 13:20-23 (“FIG. 2 illustrates exemplary method steps performed by the system 100 of the present invention. First, in step 200, the system recognizes that a **web page option has been selected by a user** at the browser 106.”).

70. Similarly, Allevan discloses that the content assembled by the gateway server is provided to the requesting users. EX1004, 2:8-15 (“It is a further object of

the invention to broadcast information from a web server over a broadcast device **to a multitude of user computers** without loss of functionality....It is still another object of the invention to provide dedicated channels in a broadcast system, **for sending specific information to a single user computer.**"); *id.*, 7:2-5 ("The unicast mode is used to send highly customized information from a single website at network 150, 152 **to a single user computer 104** in real time as it is requested by the user."); *id.*, 7:9-13 ("In contrast, the broadcast mode is used to send information that is accessed by a large number of users from a single website at network 150, 152 **to a large number of user computers 104.**"); *id.*, 8:14-15 (same); *id.*, 11:10-16 ("the Differential Burst Video Communication Channel 122 is similar to the Broadcast Communication Channel 120, except that the DBVcc 122 is used **to send video data to a single user computer 104 in the unicast operational mode**, and the Bcc 120 is used **to send video data to multiple user computers 104 in the broadcast operational mode.**").

71. Petitioners assert that the claimed content provider requesting the media stream is Avellan's satellite 102: "[t]hat request is received from the satellite content provider by gateway platform 130." Pet., 44-45. As explained below, those skilled in the art would not have understood Avellan's broadcast device 102 to be the claimed "content provider" of the challenged claims.

72. *First*, as demonstrated above, those skilled in the art would have understood that, in Avellan's system, the satellite 102 is not requesting a media stream or receiving it for broadcast on the broadcast media stream. As demonstrated above, the **user computers 104 request** the Internet content and receive it. EX1003, 6:65-7:5; 6:37-40 ("If the ***user requests a web page***, the user computer 104 checks its local storage device 110 for the desired information."); 6:19-25; 9:7-10; 9:66-7:2; 10:5-13; 13:20-23 ("FIG. 2 illustrates exemplary method steps performed by the system 100 of the present invention. First, in step 200, the system recognizes that a ***web page option has been selected by a user*** at the browser 106."); EX1003, 2:8-15 ("It is a further object of the invention to broadcast information from a web server over a broadcast device ***to a multitude of user computers*** without loss of functionality....It is still another object of the invention to provide dedicated channels in a broadcast system, ***for sending specific information to a single user computer.***"); *id.*, 7:2-5; 7:9-13; 8:14-15; 11:10-16 ("the Differential Burst Video Communication Channel 122 is similar to the Broadcast Communication Channel 120, except that the DBVcc 122 is used ***to send video data to a single user computer 104 in the unicast operational mode***, and the Bcc 120 is used ***to send video data to multiple user computers 104 in the broadcast operational mode.***").

73. *Second*, in contrast, those skilled in the art would have understood that Avellan's satellite 102 is only a data transmission device and "can be any suitable

broadcast medium, such as a repeater, and a satellite need not be used.” EX1003, 4:36-43, 49-52 (“the user computer 104 can be in communication with the gateway platform 130 through a repeater, which in turn communicates with a plurality of user computers 104, and a satellite 102 need not be used.”). There is no disclosure in Avellan of the broadcast device 102 or a satellite 102 requesting or receiving the multimedia stream. In fact, a satellite 102 simply operates at the physical layer or RF (Radio Frequency) with modulated signals completely ignoring its contents. Even Petitioners’ own citation to Avellan makes clear that the satellite 102 is merely a data transmission device and not a content provider broadcasting media streams to set top boxes such as cable or satellite television operators. Pet., 50 (“[o]nce the page is imaged (including an audio on the web page), the gateway server 134 compresses the image or video frame format and sends it to the browser 106 **via the satellite 102.**”).

74. *Third*, the ‘441 Patent distinguishes between content providers and broadcast devices such as repeaters and satellites that are used only to deliver data as disclosed Avellan. For example, the specification explains that “[s]atellite systems are used to deliver data (e.g. TV, radio, Video-on-Demand, multimedia streams) **from a particular source (e.g. third-party content provider)** to cable head end systems or other satellite systems.” EX1001, 1:56-59. Thus, those skilled in the art would have understood that the claimed content providers (e.g., **cable or satellite**

television operators) request and receive the multimedia stream in order to broadcast to their subscribers. The requested multimedia stream is transmitted to them via satellite or other means such as repeaters, “Radio Frequency (RF) and Integrated Receiver and Decoder (IRD) technologies.” *Id.*, 1:47-48.

75. *Fourth*, neither of Avellan’s computer users or satellite 102 are not content providers who broadcast media on a broadcast channel. In particular, Avellan does not disclose that the multimedia stream is provided to the computer users or satellite 102 for “broadcast on the broadcast media channel” as recited in the claims. To the contrary, as noted above, Avellan’s discloses that the satellite 102 is merely a data transmission device to send content to the requesting users for display on their computers. EX1003, 8:18-29 (“suitable sites for the broadcast mode are news sites like CNN, BBC, newspaper, live streaming television feeds, movies, music downloads, or ESPN. Those **sites provide the same information to a wide number of users** over and over again. Though users may select to view different information, that information is not specific to the user (unlike a search site). In addition, there can be a number of broadcast channels and each channel can have a specific theme, such as country music, military television, etc. **The user can then tune the browser 106 to one of the broadcast channels to receive that content.**”); *id.*, 8:34-36 (“If a large number of viewers choose to select a certain hockey game, that page of the website can also be sent in the broadcast mode.”). There is no

disclosure that the computer user 104, after receiving the broadcast, then broadcasts it on a broadcast media channel. In fact, Avellan can't broadcast any signal. Avellan discloses in FIG 1 elements 120, 122, 124 elements at *id*, 9:27-35. The "Broadcast Communication Channel (Bcc) 120" receives the broadcasts but cannot broadcast it on a broadcast media channel. A POSITA will understand is non-sensical for a client to broadcast content that has already consumed.

76. *Fifth*, in a related petition addressing the same limitation, petitioners undermine their own argument by identifying a different part of Avellan's system as the claimed "content provider."⁵ In the -350 petition petitioners identify the "gateway platform 130" as the content provider. *Compare* IPR2025-00350, Pet., 22 ("**a request** for at least one media stream **is received from a content provider, the gateway platform 130.**"), *id.*, 29 ("**the media stream is provided to** the content provider (**gateway platform 130**)...") *with* -349 IPR, Pet. at 18 ("gateway platform 130 **receives requests from broadcast device 102** for playback of at least one media stream on a broadcast channel."). Petitioners' internal contradictions stems from their tortured interpretations of Avellan to identify the claimed content provider. But, because in Avellan's system there is no claimed content provider that (1)

⁵ IPR2025-00350 challenges U.S. Patent No. 10,524,002 primarily based on Avellan. As with the '441 patent, except for claims 7-12, the claims recite "receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different type." -00350 IPR, EX1001, claims 1-6, 13.

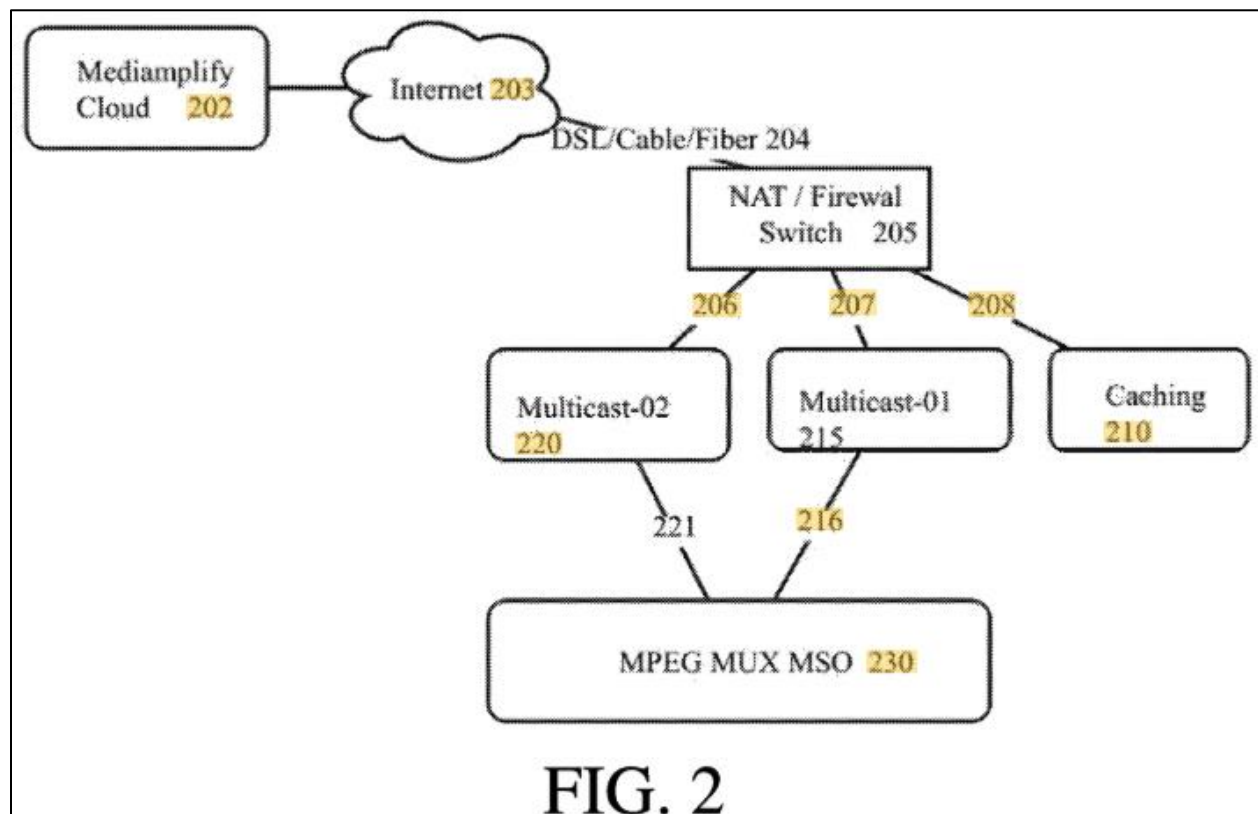
requests a media stream, (2) receives the requested media stream, and (3) uses the media stream for broadcast on a broadcast media channel, Avellan neither anticipates nor renders obvious the challenged claims.

77. Avellan does not disclose that the gateway platform **requests** and **receives** the multimedia stream. As explained above and in more detail in the Patent Owner's Preliminary Response in the -350 IPR, the gateway platform (consisting of gateway server 134 and gateway cache 136) **receives the request from the user computer 104**, retrieves the requested content from the Internet or private cloud, captures, compresses, stores it, and *provides* it back to the browser 106 on the personal computer 104. See *e.g.*, EX1003, 8:42-46 ("In the broadcast mode, the gateway server 134 retrieves the desired data from the networks 150, 152, captures the data (including audio) to a video (or image) frame format, compresses that video data and stores the compressed video data to the gateway 130 at the cache 136."); 5:12-15 ("[o]nce the page is imaged (including any audio on the web page), the gateway server 134 compresses the image or video frame format and sends it to the browser 106 via the satellite 102."). In other words, the gateway platform is the part of Avellan's system that creates the requested media and provides it to the requesting users. It would be nonsensical to interpret the gateway platform as both requesting and providing to itself the assembled media stream it creates.

78. The method of claims 1-9 recites “creating a plurality of multimedia assets at a caching unit.” EX1001, 15:54; *supra* Section II.A, claim element 1.1. The claimed method further breaks down the step of creating the multimedia assets *on the caching unit* by requiring, for each of the plurality of multimedia assets: [1.1][a] determining there is sufficient storage space for the multimedia asset at the caching unit; [1.1][b] generating a channel ID, [1.1][c] retrieving from a cloud service a plurality of media files, [1.1][d] creating a custom hypertext transfer markup language (HTML) user interface that includes video, and [1.1][e] encoding each of the media files and encapsulating them together using an MPEG transport stream format. Once the multimedia asset is created *at a caching unit*, the claimed method requires [1.2] storing each one of the multimedia assets at the caching unit, [1.3] receiving a request at the caching unit for one of the multimedia assets, and [1.4] responsive to receiving the request, the caching unit providing the multimedia asset to the broadcasting unit in the MPEG transport stream format. EX1001, 14:53-15:7.

79. The specification describes how the multimedia assets are created at the caching unit. Referring to FIG. 2 (shown below), for example, the patent explains that, in addition to being the main storage component in the system, “[t]he caching unit can also encode and transcode the multimedia files it downloads from the Cloud 202,” “keep updated information of all the metadata and create

customizable screens that can be converted into video formats compatible with the Transport Stream content that will be provided to the cable operator at its MSO,” and “add a ‘Custom UI,’ or a customizable User Interface that is designed using Hypertext Markup Language (e.g. HTML) or a web service.” EX1001, 5:2-16, 6:66-7:1.



80. “FIG. 5 illustrates an example method that can be implemented by the Mediaplug, and in particular, by the ‘Caching’ unit. At step 505, encoding flags or input parameters can be received which may include GOP (Group of Pictures) which is used by certain video encoders, resolution (e.g. 640×480) in pixels, bit rate in Kilobits per second, any encoding type of video (e.g. H.264), encoding type of audio

(e.g. AC-3), duration of the video feed, etc. In addition, a ‘format’ parameter can be received which refers to the output format or encapsulation, MPEG TS or MPEG4. The caching unit encodes audio and video, and can use the disk space in the Mediaplugin. Hence in 508 the method checks for sufficient space left in the memory or hard drive.” 6:36-51. As the ‘441 Patent discloses, not only multimedia is stored in the “Caching unit,” the operating system needs space, as Ubuntu is used and “swap” space, previous kernel modules, and others need storage 5:35-37. Logs are also stored (see Element 415 of FIG. 4), images and intermediate files also require storage space. In contrast, Farber only stores the output from the “MPEG Encoder,” hence Petitioner mistakenly equates, completely running out space, as determining sufficient space. Hence, the ‘441 patent teaches at element 508 in FIG 5 that a value of **“Disk Space > Threshold”** that a POSITA will understand now depends on the total amount of storage in the drive, minus swap space, minus log space, and other allocations, otherwise it will **“Reschedule a task”** Element 590 in FIG. 6 are now needed.

81. Farber’s method for reducing burn-in primarily discloses a system for displaying content in real-time using multiple templates to avoid the screen burn-in caused by static images. Because this is the primary purpose, the storage of the assembled media stream is an afterthought and, importantly, comes at the end of the

process, after a media asset has been created.⁶ Thus, although Farber discloses that the assembled content can, as an alternative to the simultaneous transmission and display, be stored for later playback, the disclosed storage medium is not a caching unit where the claimed functions are performed, but rather generic storage devices such as DVDs, CD ROMs, or hard disk drives that can be used to store the assembled media asset. EX1003, 7:66-8:3 (“Alternatively, in applications where playout is desired at a later time, the storage/playout device 150 may be implemented utilizing a recorder for creating or writing to any suitable storage medium such as DVD, CD ROM, hard disk, or any other suitable read only or rewritable storage medium.”), FIG. 5. Hence, what Farber discloses is a system that stores the assembled media after already creating this multiplexed content as the output of the “MUX” Element 146, which only then can be stored in a “Playout Storage” 150 module (FIG. 5).” Indeed, Farber does not disclose that any of claimed steps involved in creating the media asset are performed at the caching unit, including determining there is sufficient storage space for the multimedia asset at the caching unit (element [1.1][a] above), generating a channel ID element (element [1.1][b] above), retrieving from a cloud service a plurality of media files (element [1.1][c] above), creating a custom hypertext transfer markup language (HTML) user interface that includes video

⁶ In contrast, the claimed invention creates the claimed multimedia asset *at a caching unit* where it is stored until a request for it is received. EX1001, 15:1-7.

(element [1.1][d] above), or encoding each of the media files and encapsulating them together using an MPEG transport stream format (element [1.1][c] above).

82. Figure 4 of Farber discloses a system where a data carousel retrieves, for example, song identification and album art from data sources. A broadcast playout system sends to an audio encoder recorded media (*e.g.*, song) and, at a predetermined time, sends a trigger signal to the data carousel for the MPEG encoder to create a screen using the retrieved text and images and predetermined template. The MPEG encoder encodes the text and images into an MPEG transport stream. A multiplexer receives the MPEG transport stream and simultaneously receives the encoded audio feed. The multiplexer combines these and sends the signal out for broadcast in the form of a video transport stream. EX1006, 5:7-6:25. While FIG. 5 describes a similar process that allows the assembled transport stream to be stored on common storage devices (*e.g.*, DVD, CD ROM, hard disk), nowhere does Farber describe any of these storage mediums or any of the components involved in the creating the transport stream (*e.g.*, data sources, broadcast playout system, audio encoder, MPEG encoder or multiplexer) as a caching unit where all of these functions are performed. Unsurprisingly, Petitioner also fails to identify the claimed caching unit, which, according to the claim language, is where the plurality of multimedia assets are created. Pet., 12-15; EX1001, 14:54 (reciting that the claimed method comprises “creating a plurality of multimedia assets at a caching unit”).

83. Farber does not disclose determining that there is sufficient storage space for the multimedia asset at the caching unit. The extent of Farber's discussion of storing the media asset is only that "in applications where playout is desired at a later time, the storage/playout device 150 may be implemented utilizing a recorder for creating or writing to any suitable storage medium such as DVD, CD ROM, hard disk, or any other suitable read only or rewritable storage medium." EX1003, 7:66-8:3. There is no teaching of determining that there is sufficient storage space prior to storing the assembled media stream. Pet., 16. To fill in Farber's lack of disclosure about determining that there is sufficient storage, Petitioners argue that "by retrieving 'at a later time' the stored data, there must have been sufficient storage space for the data." Pet., 17. Petitioners argue that this step thus is "inherently" taught in Farber. *Id.*

84. A person of ordinary skill in the art would understand that whether you are able to store the media asset and retrieve it later does not necessarily disclose that you first determined whether there was sufficient storage space before carrying out subsequent steps to create the media asset and store it. It does not follow that just because there was space sufficient to save the asset, that the caching unit necessarily made an initial determination. Indeed, Petitioners themselves later argue that this step is not necessary, even if preferable: "it is advantageous to check for available space in storage prior to storing data, such as Farber's transport

streams...and not checking for sufficient storage space could lead to system errors and storage failure...” Pet., 29-30.

85. Petitioners rely on the declaration of their expert but the cited testimony provides no rationale or explanation why a determining step necessarily must take place. The declaration merely repeats the petition and its conclusion. Such unsupported and conclusory testimony cannot establish invalidity.

86. The claimed invention makes clear that the determining step is separate from the storing and retrieving steps. EX1001, 14:55-57 (reciting that “for each of the plurality of multimedia assets: determining that there is sufficient storage space for the multimedia asset at the caching unit”); 15:1-2 (subsequent to the determining step, “storing each of the multimedia assets at the caching unit”); *id.*, 15:5-7 (subsequent to the storing step, “responsive to receiving the request, the caching unit providing the multimedia asset to the broadcasting unit...”). Petitioners’ argument thus improperly renders the determining step meaningless.

87. Vermeulen is directed to solving problems related to distributed data storage systems, particularly addressing limitations of conventional storage approaches such as those described in Farber. EX1005, 1:33-2:11. For example, Vermeulen explains that conventional storage such as hard drives or network-accessible devices have limited accessibility of application data, insufficient data reliability by storing only a single copy of the application data, cross-platform

incompatibility because of the use of different operating systems storing data in incompatible formats, and network isolation barriers that restrict access to local area networks. *Id.*

88. To address these problems, Vermeulen discloses a web services-based storage system that provides location-independent access to data through internet-based protocols, implements automatic data replication for reliability and fault tolerance, organizes storage into buckets and objects accessible via standardized interfaces, offers a consistent storage interface regardless of the underlying platform, and maps keys to locators using a keymap system to track data across distributed nodes. EX1005, 2:14-51; 4:5-47.

89. As part of its web services-based storage, Vermeulen discloses the use of a nodepicker, which is essentially storage node selection logic to determine the nodes, *i.e.*, storage locations, where objects are stored across a distributed network. EX1005, 14:59-64; FIG. 2. As cited by the Petitioners, the “nodepicker 130 may be configured to ensure that the write plan has a reasonable chance of succeeding—for example, that the nodes 160 specified in the write plan are in fact operational and are expected to have sufficient storage resources available to accept the object 30.” Pet., 29 (citing EX1005, 14:65-15:8, 7:2-3). Vermeulen’s teaching, however, is readily distinguishable from the claimed determining step.

90. Even assuming that Vermeulen discloses a determining step, it is not performed, as claimed, “***at the caching unit.***” EX1001, 14:55-57. In Vermeulen’s system, storage medium is the node 160, but any determination is made by the nodepicker 130. As FIG. 2 shows, and Vermeulen explains, the nodepicker 130 is distinct from the nodes 160, where the objects are stored. EX1005, FIG. 2, 14:64-67.

91. The nodepicker does not make the determination as required by the claims, *i.e.*, “***for each one of the plurality of multimedia assets.***” EX1001, 14:55-57. Vermeulen discloses that “in some instances, nodepicker 130 may not have a perfectly synchronous view of the state of nodes 160. For example, a particular node 160 believed to be available by nodepicker 130 may in fact have failed since the last update of state information. In such instances, nodepicker 130 may be unable to guarantee that its read or write plans may be able to be completed by a coordinator 120. If a coordinator 120 cannot access a node 160 that is specified by nodepicker 130, the related operation may fail and be reattempted by the coordinator 120 in its entirety, or the coordinator 120 may negotiate with nodepicker 130 to revise the requested plan.” EX1005, 16:18-29. In other words, contrary to the claimed language, Vermeulen discloses that before attempting to store an object, the nodepicker does not check to see if there is sufficient storage at the node before attempting to store (or write) to the node. Indeed, the nodepicker’s information

about the state of the node is only as current as the last time the information was updated, which Vermeulen makes clear is not every time it attempts to store an object.

92. even if Vermeulen taught the claimed determination step at the caching unit and for each instance of the multimedia asset (which, as noted, it does not), there is no motivation to combine Vermeulen's use of a nodepicker, which addresses data accessibility, redundancy and reliability with Farber's method for avoiding screen burn-in. In the first instance, they address vastly different problems. More importantly, Vermeulen teaches away from Farber's use of conventional local storage devices such as DVDs, CD ROMs, or hard disk drives. EX1005, 1:44-2:11. The two systems also are incompatible because Farber's system is not networked nor does it have the need for storing redundant and widely distributed copies of the same data because Farber's primary mode of operation is a real-time broadcast. *E.g.*, EX1003, 7:62-8:3. A person of ordinary skill in the art would have understood that Farber's real-time operation does not require a complex system for distributing copies across a network and that its use of conventional storage mediums is sufficient without incurring the unnecessary cost and complexity of Vermeulen's distributed storage system.⁷

⁷ As with his discussion of the other limitations in the petition, Petitioners' expert does not provide any support beyond parroting the language in the petition.

93. Contrary to Petitioners' assertions, Farber does not disclose retrieving a plurality of media files from a cloud service. As shown in FIG. 4, Farber discloses that the media content comes from data sources 42, 44 or broadcast playout system 50. Farber discloses that data sources "may be connected to or in communication with the data carousel subsystem 46" and that "[t]he data sources 42, 44 may or may not be located in a single location and may or may not be co-located with the data carousel subsystem 46." EX1003, 5:33-38. Petitioners argue that from this disclosure, a POSITA would have understood this to mean that the data sources **can be** cloud-based..." Pet., 21-22 (emphasis added).

94. Indeed, there is nothing in Farber that shows that this language encompassed cloud-based sources. While Petitioners cite to their expert's declaration for support (Pet., 22), the declaration offers no explanation or evidence and instead merely repeats the same assertion. EX1002, ¶ 127. Those skilled in the art would understand that, contrary to Petitioners' attorney argument, Farber's self-contained system strongly suggests that it did not contemplate retrieving data from cloud-based sources. Indeed, not only is there no disclosure of cloud-based data sources, but when Farber refers to storing data, it again refers to local storage devices such as DVDs, CD ROMs, and hard disk drives rather than encompassing cloud-based storage. EX1003, 7:66-8:3. This all is consistent with the understanding of

those skilled in the art the fact that, at the time of Farber's application in 2003, cloud-based data retrieval systems were not in common use.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

DATED: March 24, 2025

/s/ Edwin A. Hernandez
Edwin A. Hernandez

APPENDIX A

Edwin A. Hernandez-Mondragon, PhD

Curriculum Vitae

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Introduction

Dr. Edwin Hernandez is a serial entrepreneur, inventor, and founder of “**EGLA CORP.**” EGLA is a tech powerhouse that create its own technology and where other innovators come to create ventures at the “**EGLAVATOR.**” The EGLAVATOR is Dr. Hernandez’ technology incubator and accelerator located in Boca Raton, FL. The EGLAVATOR assists and invests in several technology startups including funding advise, go to market strategies, intellectual property, and execution. As part of his intellectual property expertise, Dr. Hernandez has **licensed** his wireless portfolio to **Verizon Wireless and other high-tech giants.** Dr. Hernandez is an expert in technology and venture funding with many years of experience in wireless communications, AI, cloud computing, IOT, electronic devices, and other advanced software platforms. He is a hands-on coder and creates prototypes for many of the products created at his incubator, hence is quite familiar with code reviews, hardware, and software audits. Dr. Hernandez earned a B.S. in Electronics engineering from Costa Rica Institute of Technology, and a M.S in ECE and PhD in Computer Engineering from the University of Florida. Dr. Edwin is an inventor to **16 issued US Patents, 5 European Patents,** and has provided technical expert witness services in over **30+ intellectual property cases** including 10 IPRs, and three testimonies at trial, Daubert hearings, and numerous depositions. As part of his daily life, Dr. Hernandez works on its own projects and provides technical and startup strategy advice to several high-tech startups in the areas of AI and Machine Learning, Media Streaming, Blockchain, AR/VR, 3D Printing, 3D UIs, and Health Technologies. Dr. Hernandez was a **Fulbright scholar** and has been a judge for the “**Mobile World Congress**” several times. Dr. Hernandez is also a **Microsoft** and **Motorola** alumni, a member of the Industry Advisory Board (IAB) at Florida Atlantic University, and a producer of his own podcast, TECHEDTV. Recently, in Denver’s federal court, I testified for Blue Radios at trial for a **\$24.8M award** (Source: [Nasdaq](https://www.nasdaq.com)), and was part of the Mojo Mobility legal team on wireless charging patents for a **\$192M award** (Source: [Reuters](https://www.reuters.com)) at trial. Testifying for Intellectual Ventures against LG in a multi-million dollar licensing dispute.

Areas of Expertise

- **Technology Innovation and Startups:** Strategy, Innovation, Business Ventures, Bringing new ideas to practice, investments, licensing with digital growth in high-tech environments.
- **Cable TV Systems and Broadcasting:** Streaming systems, Encoding, Transcoding, OTT Platforms and Systems, React Video Apps, Mobile Streaming, ATSC 3.0, Cable TV Multicasting, DVB-C, DVB-T, and DVB-S, “Cloud to Cable TV,” Set Top Boxes, MPEG Encoding, OTA Broadcasting, Casting, 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 Technical Specifications)
- **AirInterface, LTE, 5G NR:** LTE 3GPP Specifications, Standard Essential Patents, Experience with SDRs, Open Air Interface project, reviewing code for handover, RRC Channels, KPI, and handoff parameters (X2

- S1AP and XN), Test Equipment, Drive Test, and 3GPP Specifications from Release 8 to 16
- **Wearable Technologies:** Bluetooth, Low power, Board Support Packages (BSP), low-profile interfaces
- **Cloud Storage and Data Synchronization:** GlusterFS, File Systems, Dropbox/S3 integration. Cloud computing, Load balancing, AWS.
- **Wireless Communications:** 5G, 4G, 3G, LTE signaling, OFDM, Beamforming, WLAN, Software-defined Networks, and RF emulation with a patent in wireless emulation/dissertation on this field.
- **Artificial Intelligence and Machine Learning:** Llama3, Ollama, Computer vision, machine learning, Fuzzy Logic, Python, Neural networks, signal processing, speech processing, use of applications for big data. Very interested in LSTM Networks, Attention Matrices, ML, statistical learning, NLP, GPT algorithms, Reinforced Learning, and other ML/AI techniques.
- **Blockchain:** Bitcoin, Litecoin, Consensus Algorithms, Gossip Protocols, ERC-20, DeFi, NFTs
- **Power Management:** Wireless Power Management Issued Patent for Microsoft Wireless Service and another Wireless Charging Patent owned by Motorola/Google with over 130+ references.
- **Personal Area Networking:** Expertise in Personal Area Networks and Wearable Systems. Issued Patent for Windows PAN Driver.
- **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 & EGLAVATOR, Owner & Founder (10/10 – Present)

Technology Innovation, Intellectual Property Experts, AI, Cyber Security, Wireless Communications, Machine Learning, NLP, Cloud, and Streaming Platforms, E-Commerce, Block Chain. Creator of MEVIA and Cloud to Cable with 5 issued patents in the US and one European Patent. Dr. Hernandez assists as an Expert Witness Services for technical and damages testimony for intellectual property cases, also provides strategic advice to startups & other innovators. 30+ years of experience engineering applications for Infrastructure, Cloud-based Platforms, Telecommunications, NFT, Network Function Virtualization, Handover for 4G & 5G Systems, 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 in general, 3D Printing, IC Design, Device Testing & Claim chart analysis. (eglacorp.com)

- **Royalties, Licensing Advise, 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 (2014-ongoing)

- **MEVIAOS and CloudtoCable** is a patent-pending and 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 Honduras, and United States (previously in Brazil). . EGLA 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
- **Guiltless To Go LLC**. Co-founder, AI-driven healthy ordering platform, Cloud computing, JSON and React.
- **Bridge to the Universe Labs, Inc** – Co-founder – NFT creation and marketing in SOLANA Blockchain
- Joint-Venture with Marine Network Solution on Cybersecurity, MEVIA Yachts, and other marine technologies.
- **Augmented Reality-Dry Heat** – AR & IoT control system for medical waste disposal, aka Demolizer Platform.
- **SEO TurboBooster** - Advisor , **CONDUCTION LABS, and many others.**
- Marine Cyber Security and Marine Network Solutions – co-founder
- Utopian Cyber – A Cybersecurity tool, CyberOps, Advisor
- SKYSHARE® – **Evolux Transportation, LLC**– Advisor
- Adam Rehabilitation, Inc – OpenCV for rehabilitation - Advisor
- MedMatch Network, Inc - Medical AI assistant for appointment settings and insurance management, acting CTO
- **EGLA CORP** owns a version of **MobileCAD and MobileIPP** in an 5G and LTE-based system with Software-defined Networks (Patented technologies) and in use with CBRS and a simulated EPC in a virtualized environment, built in 2019. In the past RAPID MOBILE TECHNOLOGIES, INC was used for these products.
- Member of **Licensing Executives Society (LES International)** **Member from 2018 to 2021**, Expertise in licensing intellectual property rights and monetization of patents and software.

EGLAVATOR, Technology Incubator & Office Spaces, Boca Raton, FL. (3/2017 – Present)

Experience: Founder and owner of a Boca Raton-based technology incubator and accelerator with many startups in Cloud, NFT, Blockchain Incubator, 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. Assisted Startups Projects:

- **PointsKash, LLC** – Points rewards to Blockchain with Algorand as a coin, one of 1st investors
- **SEO TurboBooster and Pre-Dating** – Assisting strategy – partnerships
- **Conductions Labs, Inc** – Bluetooth and Directed audio Business development and strategy
- **MEVIA Operating Systems & Mevia Studios, Inc** : Streaming platform and web widget technology, NFT Museum and Gallery.
- **CBS Biomedical** in Partnership with EGLA CORP – engineering and development of a new version of a DEMOLIZER in 2018 – 2019 (Shareholder of CBS Biomedical, Inc)
- **HydraFlush, Inc**, redesign of mechanical transmission and parts for double-sided toothbrush in 2018
- **Bridge 2 Universe Labs**, NFTs and Blockchain, creation generation of NFTs, Marketing of NFTs,
- **Guiltless To Go**, ordering Platform for healthy food, Foodverse NFT for Memberships
- **EGLA NFT Platform** – Memberships, Loyalties, and **AI-created NFTs with Machine Learning**
- **SAFEFI** – Safety-based with GPS location and tracking using a Bluetooth button and SAFEFI Zones (Patented Technology, licensed to EGLA CORP, Investor to STADSON Inc 2015-2017)
- Assisted **Cirrus Core Networks** with their NFV system and implementation of an LTE network with CBRS in 2016
- Several other ventures in e-Commerce, Education, and blockchain technologies.

MEVIA STUDIOS & TECHEDTV – Host & Broadcasting, Boca Raton, FL (3/2018 to Present).

Experience: **TECHEDTV is on Spotify, Amazon Music, Apple Podcast, and other sites.** As part of EGLAVATOR's TV, Media studio. I host and produce TV shows in technology and business: ASK ALICE, TECHEDTV, and others with dozens of shows & podcasts, covering Mobile World Congress 2019 & 2020, HIMMS 2019, Consumer Electronics Show and many others.

¹ Previously marketed under MEDIAMPLIFY®

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. **Licensed Portfolio by Verizon Wireless and other large mobile players**

- Handover patents for X2, S1 in LTE Rel9-14 and XN and N2 Handover for 5G NR Rel15-ongoing standards
- Network and Wireless Emulation for LTE and 5G NR, and other IP-based RF environments.

Motorola Inc, Principal Staff Software Engineer, Mobile Devices, Plantation, FL (11/2007-5/2010)

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 (11/2003 -10/2007)

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 (8/2002 - 9/2003)

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 (5/2001-8/2001)

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 (4/1997-11/2009)

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

Leadership Positions, Honors and Awards

- South Florida Tech Nomination – EGLAVATOR 2023 and Innovation Award in July 2024
- Global Business Awards – Rhode Island – November 2023
- Presented projects at MIAMI NFT Week 2022 and 20203,
- Presented projects at TECH PALOOZA, CRYPTO CONNECT, and other conferences in South Florida.
- EGLA CORP has been named as TOP 100 startups in South Florida
- Mentor for the FAU Business Plan Competition, 2021 – My team was finalist at FAU TechRunway, Assisted Computer Vision for Elderly, 2021.
- Judge for the **Mobile World Congress** in Barcelona, Spain, 2019
- Judge for the **Mobile World Congress** for Best Networking Software Breakthrough in Barcelona, Spain, .2020.
- Judge for Startup POP, Startups in Boca Raton, FL.
- Founding member of **Honduras Global** dedicated to Entrepreneurship, Science & Technology
- **Fulbright-Scholar:** 1997-1999 – US State Department Program.
- 2018 Innovation Awards, City of Coral Springs, FL
- Nov 2018 - 3rd Place Hackathon with “*Eye of the Storm*” at Office Depot, Boca Raton, FL
- Top projects in Emerge Americas 2018 Hackathon with Video Anemometer, Miami, FL
- Fifth Place in Bitcoin Hackathon 2018 with Bitcoin Caster, Miami, FL

https://github.com/win2013/bitcoin_alex

- Winner of Kinect/Gesture-controlled Hackathon in Boca Raton, FL <https://github.com/win2013/airthenticate>
- Finalist and presenting EGLA COMMUNICATIONS at Florida Venture Forum in Coral Gables, FL 2015
- Finalist at “Emerge America’s” Conference with Mediamply/MEVIA in **2014**, Miami Convention Center
- Finalist with Mediamply “Music Sparks” in LAB Miami, FL in 2015.
- Mention of honor in the Honduran National Science Contest, May 1997.
- Ranked 1st in undergraduate studies, Costa Rica Institute of Technology, July 1995.
- Four consecutive academic scholarships undergraduate work at Costa Rica Institute of Technology (ITCR), 1991-1995.
- Winner Business Plan Competition in **University of Florida** 2002 and Runner-up in 2001
- *High-Performance Computing and Simulation Lab* student award, spring 1999.
- In March 2001, as a co-founder of E-melodies, runner-up during the *2001 UF Business Plan Competition* at the University of Florida and winner of the *2002 UF Business Plan Competition in Information Technology*

EOU and Software Code Reviews Expertise

- Many source code reviews involving multiple languages including C/C++ for several vendors in 802.11, LTE, 3G systems, Bluetooth, Board Support Packages (BSP) Systems, Augmented Reality, Wearables, UWB, and other wireless technologies including WPC/Qi-charging,
- Review of FPGA circuits: WIFI6, Beamforming: 802.11ax, others systems
- Source Code reviews for web applications: E-Commerce Platforms (PHP, Apache Gradle, Javascript, Servlets, Tomcat, NodeJS, Typescript platforms and others),
- Source Code Review for networking and virtual machines: 3G, 4G systems, handover protocols, Open Loop Power Control, eNodeB, NodeB systems, FemtoCells, MME source code, etc.
- Source Code Review for mobile technologies: Android modules and drives, iOS applications, including packet captures RRC, RRB Protocols, 3G/4G modems, Power Management drivers, displays, sensors, BSP.
- Source Code Review for storage platforms: FreeBSD, Linux, Ext2FS, RAID configurations, etc
- PowerShell and others for a Windows platform including Cisco Routers, VMWare, Xen, Docker, and networking designs
- Experimental setups for WIFI, Bluetooth, IP networks, to support or rebut Infringement theories, and analysis with forensic tools for data.
- Wide experience with clean room environments

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.
- A. 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

Books

- Viva5G for Executives and Entrepreneurs – Q1, 2025
- Viva5G for Engineers and Scientists - Q1, 2025

Technical Reports and Prior to publications

- E. Hernandez “MEVIA COIN – White Paper “ – November 2021
- E. Hernandez “Mediamplify: 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 (16 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. Poursabastian, 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 with over 140 references.**
- E. Hernandez,– Issued US Pat: **10,123,074, 10,524,002, 11,140,441, 12,075,116 and 18/800,685 patents and continuations.** PCT No. 16/729,986 and 15874332.8, and issued European Patent **EP3238457**. For the following countries: Germany, France, UK, Spain, Portugal, Italy, Hungary, Austria, Estonia, in 17 Jurisdictions.
- E. Hernandez – Anemometer with Augmented Reality – April 2018 – Patent Application Filed and discontinued
- E. Hernandez - SYSTEMS AND METHODS FOR IMPROVED BIOHAZARD WASTE DESTRUCTION SELECTION – Filed – US Patent **11,441,773** and Continuation **18/780,152**

- E. Hernandez – Decentralized Operating System and MEVIA OS – The MEVIAVERSE Platform in the works. US Pat **18/622,249 and PCT/US2024/022310**
- E. Hernandez – AI/ML Reservation system for healthy food ordering – Under completion.
- E. Hernandez – Portal to the METAVERSE - Under completion
- E. Hernandez – Web3 and NFT Authentication system for IRL and Virtual Worlds – Under completion
- E. Hernandez – NFT Phone Number – Universal Calls – Under Completion

Broadcasting, Blogs & Podcasts

- FM Radio & Podcast – **Ask Alice Show** – May - August 2018
- Founder of TECHEDTV, TRAVELWITHED, EXPERT WITNESS TV – Host . <http://teched.tv> - 2019 to present in Apple iTunes, TuneIn, Spotify, Amazon Music, Google Android, and other podcast sites.
- Technical articles at medium.com/@edwinhm and edwinhernandez.com

Software & Engineering Skills

Operating Systems Experience: Linux Operating Systems (*Expert Level*), Windows Platforms, AWS, Google Cloud, Microsoft Azure

Artificial Intelligence: NVIDIA Tools including CUDA, LLM, private AI/ML lab for testing

Cloud Computing: AWS, Google Cloud, Azure, VmWare & XenServer, Docker Containers & Kubernetes. Cloud storage and platform development of multimedia delivery systems.

Marker Space & Electronics: 3D Printing, Sketching, Design, CAD/CAM, Circuit boards, logic boards, electronic components and RF engineering.

Block Chain Technologies: ERC-20, Solidity, Solana, Bitcoin, Ethereum, Binance, DEFI tokens, consensus algorithms, miners, NFT or Non-Fungible Tokens

Mobile Programming: iOS and Android. Android OS including Smart TV, IOS Development for iPad/iPhone/TV, Embedded Development with Raspberry PI. Legacy systems: Windows CE, J2ME, Blackberry RIM SDK, Motorola SDKs, Samsung SDK BREW, Qualcomm AMSS/DMSS.

Software Development languages: React, React-Native, Python (Django), PHP, Javascript (jQuery, NodeJS, AngularJS), Objective-C, Swift, Java, Java/Android, GNU C/C++, C#, VB.NET, Platform Builder, Java Micro-Edition, J2SE, and MySQL.

Machine Learning: Generative AI models, LSTM, Deep Learning, Scikit, OpenCV, Python and Text-to-Speech Technologies, Statistical model used in data science.

Multimedia Systems: Cable TV, DVB-C, DVB-S, IP Multicasting, Streaming Platforms, Encoding, Transcoding, Metadata, MPEG TS, Cable & Satellite Systems.

Wireless Protocols: GPRS, UMTS, 4G LTE Handoff, 5G XN, and NFV Platforms. Beamforming, Power Management, RRC Messaging, Femtocells, small cells, QXDM logs. Experience with Wearables, Bluetooth LE, BNEP, and many PAN systems. Wide experience with GSM, GPRS, and other legacy wireless standards such as CDMA 2000, iDEN, and others. Extensive experience with mobility protocols in UMTS, LTE, GSM, Mobile IP, MIH and research projects such as Cellular IP, HAWAII, AODV, and other systems. Expert level on WIFI, WPA-3, and IEEE 802.11 standards.

Software Defined Radios and Networks: GNU Radio, Propagation, RF and Software-based Emulation, Wireless Emulation, Fading, Modulation, & others

Internet Networking: In-depth knowledge of IPv4 and IPv6 protocols, IP tunnels, TCP/IP, Web Sockets. NDIS driver design in Windows platforms, PCAP, Experience managing and securing Cisco IOS routers networks & firewalls and SNMP management. Fiber optics, IP Tunnels, VPN, Switching, Redundancy.

3D Printing: Fusion360, 3D Slicing techniques

UI/UX: Figma Prototyping

Process Management: Github, JIRA, TFS & SCRUM

Data Center: Expert server admin, Power Management, A/C, Electrical Distribution, Networking,

Scientific and Engineering Tools: MATLAB, pSPICE, OrCAD, Network Simulator (ns-2 and ns-3), wide experience in electronic circuit design, digital design, and low-level debugging tools, including PC-104 and circuit design.

Legacy Programming Languages: VHDL, LISP, PROLOG, FOXPOR, Pascal, Embedded design, Intel assembly code (i8051, x86), and TCL/TK.

Technology Licensing

- The US patents Nos. 7231330, 7697508, and 8213417 are licensed by a major internet and wireless communications companies and are in use to manufacture millions of cellular devices and telecom carriers including **Verizon Wireless** as a licensee.
- US Patents 10,123,074, 11,440,441, 10,524,002, and 12,075,116 (**CloudtoCable** Patent Portfolio) campaign started for licensing
- US Patent 11,441,773 (Augmented Reality) started licensing campaign.
- Assisting several startups with technology licensing needs including Trademarks, Software, and Patents

Entrepreneurship & Ventures

EGLA CORP dba, EGLA COMMUNICATIONS: Corporation behind the EGLAVATOR and other startups: Mediampify & MEVIA Platform (Cloud to Cable TV), Expert Witness Consulting & Services, Software/Cloud hosting, Multimedia Delivery Services, EGLA.ai - Artificial Intelligence, Demolizer, and other platforms.. For additional, information: www.eglacomm.com | www.eglacorp.com

- **EGLAVATOR:** Technology incubator in Boca Raton, FL www.eglavator.com
 - **Mobility Workx, LLC:** Principal, 3G/4G/5G Emulation and X2, XN Handoffs under patents US7231330, US8213417 and US7697508 also known as MobileCAD and MobileIPP. www.mobilityworkx.co
 - **UBIWIRELESS, LLC dba EDWIN HERNANDEZ, LLC:** Founder & owner. This company dedicated to IP Monetization, previous projects include RxProfile™ (<http://rxprofile.net>), FUTMOB, and Ad2Fone, among others (Mobile Applications). Licensing entity of EDWIN HERNANDEZ, LLC.
 - **EGLA Ownership:** Guiltless To Go, Shibzoids NFT, Turbo Booster, Pointskash, Marine Cyber, and others.
- COMPUNET S. de R. L.** Founder and CTO, Honduras Pioneer Internet Service Provider founded in 1997 completed operations in November 2009, one of the first ISPs in Honduras. Other ventures founded in Gainesville, FL: US BioMedical Information Systems, Inc, E-Melodies, LLC, SmartFit, LLC,

Personal Information

- **Hobbies:** Guitar playing, running, soccer, volunteering for charities, option and derivatives trading.
- **Citizenship:** Honduran and US Citizen
- **Religion:** Catholic - Salesian Alumni – Instituto Salesiano San Miguel

Services and Memberships

- Mentor for hackathons and internships at the **EGLAVATOR**
- Member of **Industry Advisory Board** for Florida Atlantic University, Electrical and Computer Engineering Department, 2017-present
- Presenter as Technology Showcase and member of South Florida TECH 2020-2022
- **GSMA – 2019 & 2020 Mobile World Congress, Judge**, Barcelona, Spain
- Emerge Broward and Leadership Broward Member 2014-2016
- Organizing Committee, Mobile Mondays Miami, 2009-2013
- Organizer “Startup Weekend Boca,” October 2013
- Hispanic Graduate Student Association, Finance chair, 2001-2002
- Hurricane Mitch Volunteer, Gainesville, FL. October 1998

- IEEE member (current)
- Tae Kwon Do, black belt
- St. Andrew's Catholic church, Life Teen, Coral Springs, FL, 2004-2005
- Member of Lovebags.org, 2007-2009
- Member of Society of Hispanic Professional Engineers, 2009-2010

Technical Program Committees/Reviewer for International Conferences

- 2025 14th IEEE International Conference on Communication Systems and Network Technologies
- Reviewer Indonesian Journal of Electrical Engineering and Computer Science -
- 2024 IEEE - INTERNATIONAL CONFERENCE ON INNOVATION AND INTELLIGENCE FOR INFORMATICS, COMPUTING, AND TECHNOLOGIES
- 2024 IEEE TENCON
- 2024 IEEE GLOBECOM – Global Communications Conference -
- 2024 AICT Conference – Bahrain
- 2024 CSNT Conference – Communications Systems and Network Technologies, India
- 2024 Indonesian Journal of Electrical Engineering and Computer Science
- 2023 IEEE-ICM – International Conference on Mechatronics
- 2023 IEEE-MCET 23 – 4th Multidisciplinary Conference on Engineering Technology
- 2023 IACT - 7th Arab ICT Conference
- 2023 IEEE GLOBECOM, Global Communications Conference
- 2023 IEEE CSNT Conference
- 2022 IEEE 11th International Conference on Communication Systems and Network Technologies 2022 IEEE CSNT Conference
- 2021 IEEE TELKOMNIKA (reviewer)
- 2021 – IEEE International Seminar on Machine Learning Optimization and Data Science, ISMODE (Reviewer)
- 2021 CICN - IEEE International Conference on Computational Intelligence and Communication Networks (Technical Program Committee)
- 2021 3rd ICERA – IEEE International Conference on Electronics Representation and Algorithms (Reviewer)
- IJ-ICT 2021 – IEEE International Journal of Information and Communication Technology (Reviewer)
- IJEECS 2021 and 2022 – IEEE Indonesian Journal of Electrical Engineering and Computer Science (Reviewer)
- IJRES – IEEE International Journal Research Education and Science 2021 and 2022 (**Associate Editor**)
- IEEE The International Conference on Communication Systems and Network Technologies (CSNT2021)
- ICCAIST 2021: IEEE 4th International Conference on Computer Applications & Information Security, Saudi Arabia.
- 2020 IEEE TELKOMINKA, Telecommunication, Computing, Electronics and Control
- Editorial Board of **Indonesian Journal of Electrical and Computer Engineering** 2021
- 2020 CICN - International Conference on Computational Intelligence and Communication Networks
- 2020 BDAW - Big Data and Advanced Wireless Technologies,
- 2019 International Symposium on Electrical and Electronics Engineering, ISEE2019.
- 2019 IEEE Asia-Pacific Conference on Applied Electromagnetics (APACE2019)
- 2019 1st International Conference on Cybernetics and Intelligent System (ICORIS) 2019.
- 2019 IEEE Game Entertainment and Media – Ireland
- **Editorial Board Member and Reviewer**, Journal for Networks and Systems Management, from 2004-present
- 2018 Journal of Simulation: Transactions of the Society for Modeling and Simulation International
- 2018 International Conference on Information and Communications Technology (ICOIACT)
- 2017 2nd International conferences on Information Technology, Information Systems and Electrical Engineering (ICITEE)

- 2016 Global Summit on Computer and Information Technology
- 2016 International Conference on Information Technology, Information Systems, and Electrical Engineering
- 2016 Recent Advances in Communications and Networking Technology
- WCI 2015 – Women in Computing and Informatics
- 2012 (2012 IEEE Symposium on Wireless Technology & Applications).
- IEEE International Consumer Networks, 2011
- IEEE Broadnets - 2008
- IEEE Wireless Networks Magazine, 2002-2003
- IEEE Transactions on Mobile Computing 2007
- IEEE Wireless Local Networks 2005-2007
- IEEE Local Computer Networks 2007-2008
- IEEE GLOBECOM 2005
- IEEE SOUTHEAST CONFERENCE 2005
- IEEE Conferences in 2014-2015
- 2004-2009 - Panelist at 4G Wireless (Miami Beach, FL), several “Mobile Monday” events, and Mobile Commerce Latin America (2009).

Tutorials

- Electrical and Computer Engineering Technology Faculty, Rochester Institute of Technology (RIT), Tutorial on LTE Emulation & Signaling for Handover, September 2020
- WEBCONF Latino 2010, Tegucigalpa, Honduras.
- Mobile Computing Platforms, Tegucigalpa, Honduras.
- IEEE SOUTHEAST CONF 2005. “Windows Cryptographic API,” A Session Keys Paradigm.
- *Keynote speaker* at "First Tuesday" Tegucigalpa, Honduras, and San Salvador, El Salvador

Training

- **Tucks Schools of Business – Dartmouth University**, Digital Strategies for Entrepreneurs, Google Campus, Seattle, WA, and December 2016.
- **Management Skills and Business Strategies**, FAU Campus, Boca Raton, FL, January 2014

Languages

Fluent in Spanish and English. Basic knowledge of German and French

Teaching Experience

Teaching Assistant for Mobile Computing, University of Florida, (Spring - Fall 2001)

Experience: Mobile Computing is level-6000 graduate class. The class involves the discussion of research papers and a practical section where different wireless technologies are covered. In addition to my job duties, an automated examination tool was developed as an additional class aid for grading. The class required J2ME/JSEE knowledge and the ability to support the class with Motorola smart phone development, plus all additional aid required to run the killer application competition sponsored by Motorola.

Teaching Assistant for Software Engineering, University of Florida (Fall 2000)

Experience: The class was targeted to computer engineering seniors as an introduction to the software development cycle. Students carry-on a web-based project and deliver specific documents and specifications (architectural, design, UI), develop a prototype, schedule different tasks, and manage the project to be delivered on time. The TA assists technically and supervises their work, grades quizzes and exams.

Teaching Assistant for Introduction to CIS/Java, University of Florida (Summer 2000)

Experience: I taught an introductory lab session, graded quizzes, exams, and assignments. As an assistant I held different tutorial sessions on object-oriented concepts and problem-solving skills.

Teaching Assistant for C++, University of Florida (Spring 2000)

Experience: Grading and preparing assignments for the class.

Instructor at the Central American Internetworking Conference, (9/1998)

Experience: During the conference, I taught a 3-day intensive hands-on class on network security. I covered topics from: network intrusion detection, privacy, and authentication mechanisms

Instructor, Central American Telecommunication Videoconferencing (Summer 1996)

Experience: Teaching Linux (Operating Systems), C++, and Networking seminars to engineers all over Central America (Remote teaching)

Central American Telecommunication Commission, Engineer, Honduras, (8/1995 – 5/1997)

Experience: Network Engineer, Videoconference systems (VTEL and H.323), software development for telecommunications and traffic management

United Nations Development Program (UNDP), IT Consultant, Honduras, (11/1996 – 5/1997)

Experience: Network security and consultant for the United Nations program in Honduras. Software auditing and network configuration

Research Experience

Research Assistant, University of Florida, Gainesville, FL (1/2000 – 8/2002)

Experience: I investigated the effects of handoff and network mobility at different vehicular speeds. I used Mobile network simulation and emulation were important tools to study Mobile-IP and Layer-2/3 mobility protocols. I developed RAMON, Rapid Mobile Network Emulator, a device that emulates network layer mobility and programmatically replicates mobility conditions varying from signal strength, packet delay, BER, and speeds. RAMON uses real 802.11b Access Points, Omni-directional antennas, embedded computers (e.g. PC-104) and custom-build control circuitry. RAMON also used a .NET interface to automatically create network topologies to be emulated. In depth routing protocols explored, IP tunnels, and low-level network device driver adjustments. I conducted extensive simulation work on ns-2.

Research Assistant, University of Florida, Gainesville, FL (9/1997 – 12/1999)

Experience: I joined the High-performance Computing and Simulation Research Lab. During my thesis work, I applied Fuzzy Logic in Network Management, focusing on how adaptive sampling could reduce captured statistics without losing important network behavior. Additionally, I researched ATM networks, SNMP (Simple Network Management Protocol), Virtual Interface Architecture (VIA) over Myrinet, CORBA, and High-performance Cluster Computing topics.

Program Manager Intern, Microsoft Corporation, Redmond, WA (5/2001 – 9/2001)

Experience: As an intern, I investigated self-similarity and power management algorithms for Wireless Networks. I modeled the method how service time per packet could be estimated and used for QoS in ad-hoc and infrastructure networks.

Network Engineer, Radiografica Costarricense, R&D, Costa Rica. (Jan - Jul'95)

Experience: I developed a microcontroller-based (x8051 and RUP1-51 micro-controllers) system to measure X.25 and PBX data traffic, Windows-based GUI, and X.25 frame captures

Consulting and Expert Witness Experience

- **KOM, Inc vs. Netapp** – Expert Witness for KOM, Code Reviews, Expert Reports
Attorney Firm: Dinovo & Price
Case: Patent Case – Storage Computing & Compliance
Technology: Cloud storage, operating system driven access, WORM
Settled
- **BMG Music vs. Altice Inc.** – Expert Witness for BMG Music
Attorney Firm: StepToe
Technology: Firewalls, traffic analysis, detection methods.
Case: Copyright infringement – Technology Negligence
Q3’2023 – Settled
- **Cisco Systems vs. Corrigent Networks** – IPR2023-00169 – Assisting Corrigent Networks
Attorney Firm: Step Toe, Kramer Alberti Lim & Tonkovich LLP
Technology: Internet networking and Packet-based systems with cost routing
Case: Reexamination, IPR – Networking and Switching technologies
Q4’2023 – Final Decision.
- **ConnectQuest v. Oura** – Assisting ConnectQuest
Case: Patent Infringement - USDC USC 101 Declaration
Technology: Connected and Wearable devices, Bluetooth, others
Q4’2023 – Settled
- **Mojo Mobility v. Samsung**, USDC Eastern District of Texas
Case: IPR, Patent Infringement – Wireless Charging Technologies and Charging Protocols.
Technology: Wireless Charging for wearable devices, phones tablets, and pens.
Attorney Firm: McKool Smith
Mid-2023 – Technical Advise – Involvement Completed
- **Virtela Technology Services v. Andrew Funk**, USDC District of Colorado,
Expert Witness for Andrew Funk.
Attorney Firm: Dorsey Law
Technology: Cloud computing, Synchronization
Case: Trade Secret Theft – Cloud Computing
Mid 2015 - Case Settled 2016.
- **Del Castillo v. Bank of America**, USDC Southern District Florida
Expert Witness for Bank of America
Attorney Firm: Liebler Gonzalez & Portuondo PA
Technology: Social media propagation and cleanup of news.
Case: Online Reputation and Web search
Q1’2017 - Case settled 2017
- **BNR Mobile v. Several defendants (HMD, others)**, USDC Eastern District of Texas
Case: Patent Infringement
Technology: Beamforming, Mobile Services for Authentication, Mobile and Remote Control of devices, Integrated Circuits and Packaging.
Attorney Firm: Devlin Law
Q1’2020 – Settled and Completed Engagement
- **BNR v. Several Defendants (NOKIA, BLU, Samsung, TCL, AsusTeck)** – International Trade Commission Case No. 337-TA-3568 and 337-TA-1367
Case: Patent Infringement, Mobile Devices, Code Review, Evidence of Use, Certain Electronic Devices Having

Wireless Communication Capabilities and Components, Mobility Patents, WIFI

Technology: Beamforming, Mobile Services for Authentication, Mobile and Remote Control of devices, Integrated Circuits and Packaging.

Attorney Firm: Devlin Law

Q1'2020 - Case settled.

- LG Electronics v. **BNR** – Expert Witness for BNR - IPR2020-00108 for U.S. Patent No. 8,416,862 (Terminated, Settlement During 2020)
- SAMSUNG v. **BNR** – Expert Witness for BNR - IPR2020-00611 (**Denied**) and IPR2020-00613 (**Not Instituted**) for U.S. Patent No. 8,416,862
Case settled around 2020
- **Charles Smith Enterprises, LLC** v. Catapult Sports Inc, USDC District of Delaware,
Case: Patent Infringement (Claim Construction Matters)
Technology: Video encoding and processing using editing software.
Attorney Firm: Devlin Law
Q4'2022- Ongoing – Re-Exam continues in 2024
- **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**
Technology: Oracle Databases, Java-based Platform Code Review, Clean Room, Security, Storage, Data Center.
- Auditing of Honduran Elections, Forensics and fraud detection and analysis (Pro-Bono) in 2018
Auditing of Honduran Elections, Forensics and fraud detection and analysis (Pro-Bono) in 2021
Technology: Cryptography, Image Processing, and data analytics for fraud detection.
- **Intellectual Ventures** v. Toyota Motor Corporation,
Intellectual Ventures v. GM, Volvo, others. USDC Eastern District of Texas (Case settled for \$15M each)
LG vs. Intellectual Ventures – USDC of Delaware (Trial)
Case: Patent Infringement
Technology: Media Networks in Vehicles, Telematics, Video Sensors, Video encoding, Car Networks, and protocols. CAN, MOST, Ethernet, VCUs, etc.
Attorney Firm: Kasowitz Benson Torres LLP
Q1'2022 - Present
- **Key West Golf Club** v. Cable Provider – Cable TV distribution technologies –
Preliminary study – Key West, FL, Q1' 2019
Technology: DOCSIS 1.0 and 2.0 systems, measuring SNR to determine quality.
- **L2MT** v. Google,
L2MT v. OnePlus,
L2MT v. TCL and other defendants, USDC Northern District of California,
Case: Patent Infringement for 3G Protocols, Claim Construction Assistance
Attorney Firm: Fitch Even Tabin & Flannery LLP
Case dismissed for Google around 202
One Plus – Settled in 2024
TCL – Settled in 2024
- **Mobile Manufacturer** v. Carrier, USDC Eastern District of Texas,
Expert Witness for Mobile Manufacturer
Case: Patent Litigation – Wireless Protocols, Tunnels, and Signals.
Attorney Firm: Fish and Richardson
Q1'2017 - Case settled 2017

- **DISH Network LLC v. Multimedia Content Management LLC**, IPR2019-01014 and IPR2019-01015,
Expert Witness for Multimedia Content Management, LLC, 2019
Case: Patent Trial and Appeals Board
Technology: Hardware design and implementation, Multimedia Encoding.
Attorney Firm: Toler Law Group, PC
IPR Not instituted in both cases.
- **Bandspeed v. RealTek Semiconductor Corporation**, USDC Western District of Texas,
Case: Non-Infringement, Invalidity, Code Reviews, etc.
Attorney Firm: Orrick Law
Technology: WIFI and other technologies.
Q1'2023 – Settled
- **Seven Networks v. Google**– USDC Eastern District of Texas
Expert Witness for Seven Networks
Case: Patent Litigation
Attorney firm: Thompson and Knight LLP
Technology: Software for data synchronization
Case Settled 2017
- **TOT Power Control, SL v. T-Mobile**, USDC Eastern District of Texas
TOT Power Control, SL v. Handset Manufacturers, Massachusetts.
Code Review, Infringement, Validity
Case: Patent Infringement
Attorney Firm: DiNovo and Price
Technology: Power control, Open Loop and other systems in 3GPP systems
Q3;2023- Ongoing
- **TCL** - assistance & consulting for several patents and IP cases - Taiwan
Q2,2022 – Preliminary analysis on WIFI technologies
- **Stone v. AT&T, Vehicle**, USDC Southern District of California
Case: TCPA Matter – Expert Witness for AT&T, MMS Messaging
Technology: MMS messaging and Telephony
Attorney Firm: Hill, Kertscher and Wharton, LLP
Q1'2019- Case settled in 2019 (Deposed, Settled)
- **Barkan v. Sprint**, USDC Eastern District of Texas,
Attorney Firm: Susman Godfrey, LLP
Technology: PicoCell, MicroCell, and other small cells.
Case: Technical Expert Reports, Code Reviews, 4G, PicoCells, Tunnels, Invalidity and Infringement Reports,
Deposed (Q2'2020 - Case Settled in 2021, assisted Walt Bratic in damages expert with a large licensing deal)
- **Bell Northern Research, LLC v. LG Electronics, Inc., et al**, USDC Southern District of California
Attorney Firm: Skiermont Derby LLP
Case: Patent Infringement & Validity Federal Case. Code Review, Expert Witness Declaration and IPRs (3) –
Beamforming and Wireless Technologies
Technology: Beamforming, WIFI, and other Wireless Technologies
Settled around 2020, Terminated Institution
- **Bell Northern Research, LLC v. Samsung et al**, USDC Eastern District of Texas.
Attorney Firm: Skiermont Derby, LLP
Case: Infringement & Validity Federal Court, IPRs (3), California, Code Reviews Assisting infringements

reports & damages models, Technical Expert Reports

Technology: Beamforming, WIFI, and other Wireless Technologies

Case Settled around 2020, 2 IPRs not instituted

- **Blue Radios v. Kopin, Inc, USDC, District of Colorado**
Blue Radios v. HBSR, Massachusetts District Court,
Expert Witness for Blue Radios –
Attorney Firm: Sheridan Ross, Jeffer Mangels Butler & Mitchell LLP, and others
Case: Patent Litigation, Code Review, Trade Secret Theft Matter in Wearables, Bluetooth, User Interfaces, Supplemental Report, Licensing Analysis, Head Mounted Displays, Military Technologies (ITAR)
Technologies: Military – Requires ITAR clearance, Wearables, and others.
Ongoing (**Deposed 2-times, 720 Hearing – Motion Denied to defendant Trial scheduled, 24.8M award to Blue Radios.**)
- Contour Data Solutions v. Gridforce, **CDW**, USDC Eastern District of Pennsylvania,
Case Technical Expert Reports (Data Center, Cloud and Virtual Machines, Trade Secrets)
Attorney Firm: Vedder Price
Deposed and Expert Report Files
Technology: Cisco Routers, Networking , Data Centers, Internet Protocols
Q1'2021 - Settled
- Workspot v. **Citrix** – PTAB, IPR2019-01002 – Declaration for CITRIX
Case: Patent Trial and Appeals Board
Attorney Firm: DLA Piper
(**Deposed, instituted but all claims held patentable** - PTAB judges agreed with my analysis., IPR denied for Citrix patent
- **Express Mobile v. DreamHost, LLC** – Expert Witness – USDC District Court of Delaware – 2019
Case: Patent Infringement – eCommerce Platforms, Javascript,
Technology: E-commerce, javascripting, networking, databases
Attorney Firm: Devlin Law
Expert Reports
Q1',2018 - Case settled in 2019.
- XCommerce v. **Express Mobile, Express Mobile v. BigCommerce**, USDC Eastern District of Texas and USDC Northern District of California
Case: Patent Infringement – Virtual Machines, e-Commerce Platforms, PHP/JavaScript
Attorney Firm: Devlin Law
Technology: E-commerce, javascripting, networking, databases
Expert Witness for Express Mobile. Review code for client, claim charts, code reviews, invalidity defenses, Deposed, Trial Scheduled and Pending
Q1'20218 - ongoing
- **Flexiworld v. Amazon, others**, USDC Western District of Texas, Technical Expert Reports (Streaming Technologies) (**Withdrawn**)
- **Gravel Inc v. T-Mobile, Bazaar Technologies, Target and other defendants**, USDC Eastern District of Texas
Case: Patent Infringement, Code Reviews, 101 issues, claim construction. Expert Reports
Attorney Firm: Devlin Law
Some cases settled, except with **Bazaar Voice Inc & others still ongoing**
Reports, Code Reviews e-Commerce Platform, Code Reviews. Server Gradle PHP, Java server
Q1'2022 – Settlement
- **Kaiffi v. T-Mobile, Verizon**, USDC Eastern District of Texas,
Technical Expert Reports (Streaming and wireless) (**Withdrawn by Client**)

- **Mediatek, et. al v. Nippon Telegraph, Nippon Telegraph** v. Media Tek, USDC Eastern District of Texas - IPR2020-01607, Declaration and Reports, IPR and USDC
Attorney Firm: Dickinson & Wright
Technologies: VHDL, Beamforming, Wireless Models, ISI
Case: Wireless Modulation, RF, OFDM, other wireless comm issues, Deposed IPR, Validity and Infringement, VHDL Code Reviews – Case Settled Q4’2019 to 2020
- **Mobility Workx v. T-Mobile, Inc**
Case: Patent Litigation – Wireless Handover 4G Protocols and Simulation
Attorney Firm: Machat Law and Others
(Deposed, Expert Declaration)
Q1’2016 ‘til Case settled 2017
- **Mobility Workx v. CellCo Partnership (Verizon Wireless,) USDC Eastern District Texas**
Damages Expert Witness for Mobility Workx, LLC - Daubert challenged, scheduled to testify in court for reasonable Royalty
Case: Patent Litigation and *Damages* Expert Royalty Calculation
Attorney Firm: Machat Law and HDMN Law
Deposed, Expert Report on Damages
Q1’2016 - Case Settled 2021
- **Netapp v. Proven Networks, PTAB Case: IPR2020-01436, Proven Networks** vs. Netapp USDC Western District of Texas
Declaration and Reports,
Case: Network Storage, Protocols, Caching devices.
Code Reviews, Infringement, Validity, Deposed for IPR, Not Instituted, Infringement, and Validity.
Attorney Firm: Russ August & Kabat
Q1’2021 – Settled in 2022
- **Talent Mobile Development v. Headios Group -USDC California**
Case: Trademark, Mobile Software, iOS and Android Applications
Attorney Firm: Machat Law
Technology: Mobile Applications, Android/IOS Apps, Authentication of Incoming Calls.
Jury trial testimonial with 700k award (**Trial Testimony**)
Mid 2018 – Q1, 2020
- **TPI v. Keller Williams, Inc, USDC Western District of Texas**
Case: Damages and Technical Expert Witness, Trade secrets, Reasonable royalties, software.
Attorney Firm: White & Case LLP
Technology: UI/UX Interfaces, Mobile Design, Mobile apps, Social Networks.
Q1,2019 - Settled 2020 (Deposed, Settled)
- **TrackTime, LLC vs. Amazon, Inc – Delaware District Court**
Deposed, Expert Reports on Infringement and Invalidity, Code Reviews
Case: Patent Infringement on Amazon Music Tap-to-Jump and Immersion Reading Multi-Page View
Technology: Multimedia Audio, Gesture interfaces, UI/UX design, Music Platform
Attorney Firm: Dunlap Bennet & Ludwig
Trial: Testimony at Jury Trial – Infringement, Validity, Trial Testimony with Judge Norakia. Client lost.
Q2,2022 - Q3,2023.

- **University of Florida Research Foundation, Inc. et. al. v. Motorola Mobility LLC.** At Southern District of Florida
Attorney Firm: Meltzer Law and Lundwall Law
Case: Patent Litigation Matter – Wireless Communications and Emulation
Case settled in 2014 (**Deposed**)
Q1'2011 – Settled 2014
- **Eric Mendis v. BMW North America** - Report on Wireless Charger analysis for a BMW X5 vehicle and other vehicles.
Attorney Firm: Law Office of Boris Davidovskiy, P.C.
Case: Consumer and Breach
Q2'2023 – ongoing.
- **LG Electronics vs PANTECH** – IPR2023-01271
Attorney Firm: Devlin Law
Case: Patent Trial Board, on User Interfaces, IPR Declarations.
Q4'2023 – settled
- **Square One Choice, Inc vs. DITEC solutions,** US District of UTAH
Attorney Firm: Newmann Law, LLP
Case: Paten Trial, Claim Construction on 3D printing pen, software and hardware,
Q3'2024 -- Ongoing
- **Other Consulting Engagements**
 - Review of X-Ray machine radiation reduction technology analysis for Dr. Phil. – Q2,2021
 - Technology: Embedded design for X-Ray machine device -
 - Review of Turbo Booster technology – 2020 - ongoing
 - Software Platform for Digital Marketing
 - Review of MedMatch Networks Platform Q1-Q4,2023
 - Software Platform for Doctors
 - Architecture for Guiltless To GO LLC (GTG) , and CTO management for software platform, GTG was presented in Elevator Pitch, TV show. – Q2,2022-Q4,2023
 - Software for Mobile Applications and Backend for Server-based AI-driven interfaces for healthy food.
 - Review of Marine Cybersecurity systems in IT and OT – Q1 2022-ongoing
 - Interfaces for firewalls and on-bard IT and OT networks in boats
 - Advising - Pre-trial / 4 Confidential Defendants/Plaintiffs (2013-2014)