

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION AND AT&T SERVICES, INC,

Petitioners,

v.

LEMKO CORPORATION
Patent Owner.

Case No. IPR2025-01142
U.S. Patent No. 8,310,990

**DECLARATION OF JAMES PROCTOR
IN SUPPORT OF PETITION FOR *INTER PARTES*
REVIEW OF U.S. PATENT NO. 8,310,990**

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DR. PROCTOR’S EXHIBIT LIST

Exhibit No.	Brief Description
Ex1001	U.S. Patent No. 8,310,990
Ex1002	U.S. Patent No. 8,310,990 File History
Ex1004	<i>Curriculum Vitae</i> of Mr. James Proctor
Ex1005	U.S. Patent Application Publication 2007/0021120 (“Flore”)
Ex1006	3GPP TS 23.002 v7.1.0, “Network architecture,” March 2006.

I. Introduction And Qualifications

1. My name is James A. Proctor, Jr. At the request of Microsoft, I have been asked to analyze and offer my opinion regarding certain claim terms relating to the validity of Claims 1, 3-9, and 20 of U.S. Patent No. 7,855,988 (“the 990 Patent”) and the disclosures of Flore (Ex 1005).

2. For purposes of this declaration, I will provide my detailed analysis and opinions regarding validity below.

3. Prior to that, I summarize some of my relevant educational background, work experience, and other relevant qualifications. A more detailed recitation of my professional qualifications and background is reflected in my Curriculum Vitae (“CV”), attached hereto as Exhibit 1004.

4. I have worked as an engineer and entrepreneur in the field of wireless communications for over 25 years and have been involved with various aspects of wireless communications for the duration of my career.

5. I matriculated from the University of Florida with my Bachelor of Science in Electrical Engineering in 1991 and from Georgia Institute of Technology with my Master of Science in Electrical Engineering in 1992. My Master’s studies focused on digital signal processing.

6. From 1986 to 1991, while at the University of Florida, I interned with Harris Corporation in various roles including mechanical design, software

development, and digital design. From 1991 to 1992, while at Georgia Institute of Technology, I worked at the Georgia Tech Research Institute as a graduate research assistant, performing software development on classified government programs.

7. From 1993 to 1995, while working for Harris Corporation, I designed various cellular communications systems for voice, data, and tracking/location. Many of these systems used advanced communications technologies, such as those codified in the then-developing and future telecommunication standards, such as Interim Standard 95 (“IS-95”), wideband code-division multiple access (“W-CDMA”), and aspects of the 3rd Generation Partnership Project’s (“3GPP’s”) long-term evolution (“LTE”).

8. From 1995 to 1998, I worked at Spectrian Corporation (“Spectrian”) in advanced development and technical marketing. At Spectrian, I interfaced with Nortel Networks Corporation and Qualcomm Technologies, Inc. (“Qualcomm”) and performed advanced technology development and systems analysis. In this role, I designed IS-95 CDMA and Global System for Mobile communication (“GSM”) base station power amplifiers and control electronics, and received several patents associated with advanced linearization techniques for the reduction of transmitted intermodulation distortion within multicarrier and single carrier

amplifiers and transceivers. My work and patents encompassed both analog (radio frequency (“RF”)) and digital linearization approaches.

9. From 1998 to 2002, I served as the Director of Strategic and Technical Marketing at Tantivy Communications (“Tantivy”), a venture capital-funded 3G cellular data and chipset company. At Tantivy, I helped to architect and standardize the Internet-CDMA (“I-CDMA”) Spread Spectrum Systems Air Interface Standard (T1P1.4). I also developed both wireless access terminals and base stations that complied with the standard. The base stations utilized various Internet Protocol (“IP”) protocols and interfaced with the wireline network utilizing IP over Ethernet. Additionally, I participated in and provided technical contributions to 3GPP/3GPP2 standardization efforts related to the development of CDMA2000 and 1xEV-DO technical specifications. This work resulted in me contributing as a named inventor to more than 150 pending or issued U.S. patents and applications.

10. From 2002 to 2007, as co-founder of WiDeFi, Inc. (“WiDeFi”), I served in various roles including President, CEO, CTO, and board member. As the CEO, my responsibilities included advanced development of platform technologies. I was a named inventor of wireless technology components, including a frequency translating time division duplex (“TDD”) repeater, frequency repeater architecture for frequency division duplex (“FDD”) and TDD

based systems, and physical layer multi-stream multiple-input and multiple-output (“MIMO”) repeater technology. WiDeFi invented and provided wireless home networking products based on Wi-Fi and cellular technologies. While at WiDeFi, I was a named inventor on over 25 issued U.S. patents or patent applications.

11. From 2007 to 2009, I consulted as a principal engineer for Qualcomm as part of Qualcomm’s acquisition of WiDeFi’s technology. While at Qualcomm, I worked with its corporate Research and Development division and developed consumer 3G and 4G cellular coverage enhancement systems utilizing WiDeFi’s baseband interference cancellation technologies. My responsibilities included working with international cellular operators on product requirements, detailed W-CDMA simulations, LTE systems analysis, and participation in prototype product realization. I am currently a named inventor on roughly 45 issued United States patents or patent applications assigned to Qualcomm.

12. From 2010 to the present, I have served as managing director and co-founder of Proxicom Wireless, LLC (“Proxicom”), which has developed and continues to develop cloud-based, mobile social networking and mobile payments technology based upon the proximity and location of mobile devices. Proxicom currently holds fifteen issued U.S. patents and multiple pending patent applications, and I am a named inventor on each of those patents and patent applications. The significant aspects of Proxicom’s technology include a mobile

device's use of short-range wireless technologies (*e.g.*, 802.11, near field communications, and Bluetooth®) in combination with cellular data links (3G/WCDMA or 4G/LTE, for example) to facilitate frictionless interactions via a wireless networked central cloud server.

13. I have also served as the principal of Proctor Consulting, LLC since 2007. In this role, I have been a consultant on issues relating to wired, wireless, and cellular communications and technologies, start-up companies, and intellectual property. I have also been involved with numerous patent infringement, patent validity, and patent analysis assignments for public and private companies in the wired, wireless, and cellular networking industries.

14. Additionally, I have worked and consulted for both cellular infrastructure and device focused companies (*e.g.*, Spectrian, Qualcomm, Fastback Networks), and defense contractors (*e.g.*, Harris Corporation), where I developed covert-tracking and location technologies involving CDMA and smart-antenna technologies.

15. In several of the above-detailed roles, I have been responsible for the development of business plans, product development plans, product development budgets, and product bill of materials estimations. I have been responsible for numerous product development teams, including schedules and costs for the development process at various stages of my career. For example, at Tantivy, I ran

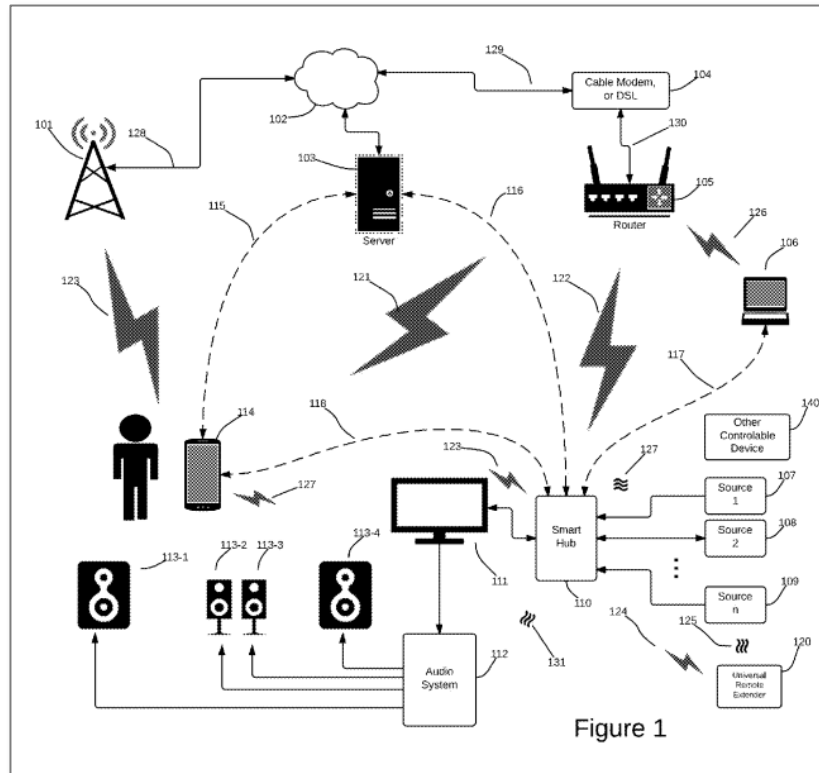
a joint development of I-CDMA cellular base stations in Seoul, South Korea that were used in a field trial in that country. Additionally, as co-founder and CEO of WiDeFi, I was responsible for similar such activities, as well as raising venture capital funding and reporting to the board of directors.

16. I am currently a named inventor on more than 320 issued U.S. patents and more than 700 international patent publications. A substantial portion of my work has been focused on wireless communication systems and products. A number of these patents and patent applications are related to the subject matter of the patents asserted in this matter, specifically methods for initiating calls in a wireless telecommunications system. The following patents, for which I am a named inventor, provide a few examples of some of my experience relevant to the subject matter of this declaration:

U.S. Pat. No.	Title	Priority Date
6,542,481	Dynamic Bandwidth Allocation for Multiple Access Communication Using Session Queues	1998-06-01
8,908,654	Dynamic Bandwidth Allocation for Multiple Access Communications Using Buffer Urgency Factor	1998-06-01
9,306,658	Method and Apparatus for a Spectrally Compliant Cellular Communication System	1999-12-20
8,321,542	Wireless Channel Allocation in a Base Station Processor	2000-05-05
6,937,562	Application Specific Traffic Optimization in a Wireless Link	2001-02-05

6,941,152	Wireless Subscriber Network Registration System for Configurable Services	2001-04-24
6,888,807	Applying Session Services Based on Packet Flows	2002-06-10
9,554,061	Smart Hub	2006-12-15
8,370,955	Enforcing Policies in Wireless Communication Using Exchanged Identities	2008-09-08
9,020,621	Network Based Media Enhancement Function Based on an Identifier	2009-11-18

17. For instance, I am a named inventor of U.S. Patent No. 9,554,061 (“the ’061 patent”) entitled “Smart Hub.” There, I developed an intelligent hub for interfacing with other devices and performing smart audio or video source selection. The United States Patent and Trademark Office (“USPTO”) awarded me a patent on my claimed invention on January 24, 2017. Figure 1 from this patent is pictured below:

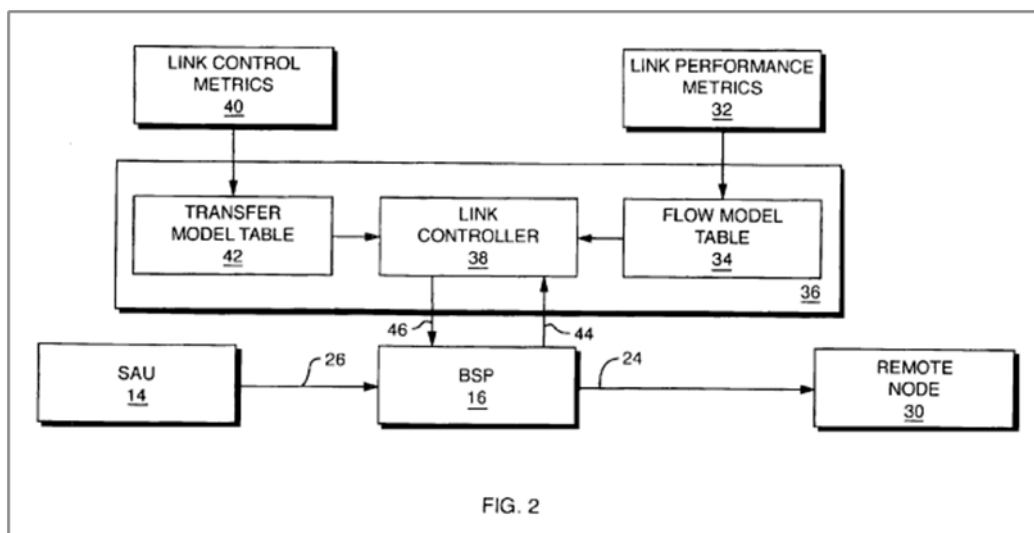


U.S. Patent 9,554,061 (“Smart Hub”) at Figure 1.

18. The claimed invention uses wired and/or wireless physical communication links, such as wired Institute of Electrical and Electronic Engineers (“IEEE”) 803.2 Local Area Network (“LAN”) connections, IEEE 802.11 Wi-Fi connections, Bluetooth® connections, Wi-Fi Direct®, intermediary network nodes, cellular mobile communications via a base station, wireless and wired routers, Near Field Communications (“NFC”), Ultra-wideband (“UWB”), and the like. The ’061 patent further discloses Voice over Internet Protocol (“VoIP”) and Session Initiation Protocol (“SIP”) processing, including a user agent in an approach compatible with the 3GPP cellular standards, including IP Multimedia Subsystem (“IMS”) services.

19. By way of further example, I am a named inventor of U.S. Patent No. 6,937,562 (“the ’562 patent”) entitled “Application Specific Traffic Optimization in a Wireless Link.” This patent is directed to a data packet system for use in a network, such as a Transmission Control Protocol (“TCP”)/IP network, for transmitting a variety of data types along links in the network. The packets are transmitted in a stream between nodes and interconnected by the links, which conform to transport layer protocols and include wireless links. I filed the patent application that issued as the ’562 patent on February 5, 2001, and the USPTO issued the patent on August 30, 2005. The ’562 patent is one of many examples demonstrating that I was at least a person of ordinary skill in the art (“POSA”) well before the earliest possible priority date of the asserted patents.

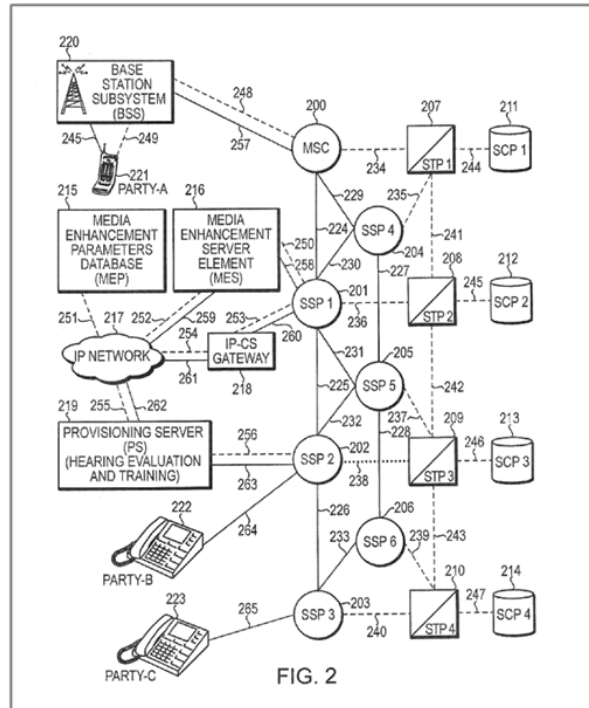
20. Figure 2 from the ’562 patent is pictured below:



U.S. Patent 6,937,562 (“Application Specific Traffic Optimization in a Wireless Link”) at Figure 2.

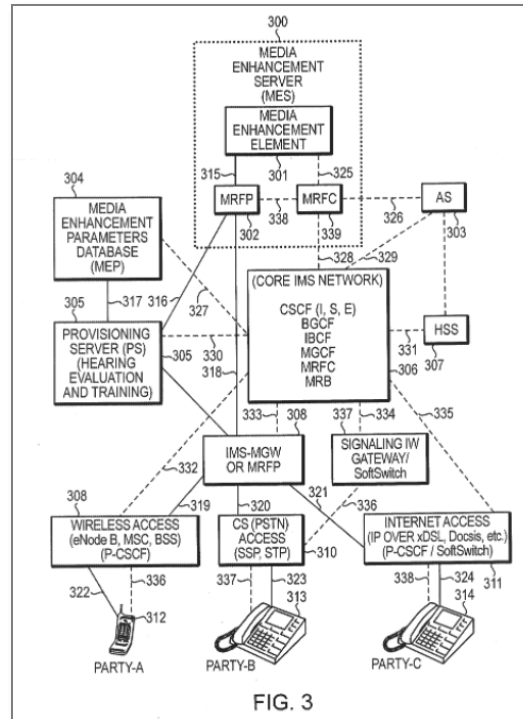
21. I included Figure 2 here because it depicts a block diagram of my claimed invention as shown in a telecommunication system, the conventional components of which were well known to me and any other POSA long before the earliest claimed priority date. For example, here, base station processor (“BSP”) 16 maintains a database table of link performance metrics 32 and link control metrics 40 and communicates directly with link controller 38.

22. And finally, for purposes of my discussion here, I am a named inventor of U.S. Patent No. 9,020,621 (“the ’621 patent”) entitled “Network Based Media Enhancement Function Based on an Identifier.” I filed the earliest provisional application to which that patent claims priority on September 18, 2009, and the USPTO issued this patent on April 28, 2015. This was directed to a network-based processing element for processing audio information to improve the understanding of speech or music for intended listeners based on an identifier. Relevant to this Report, my device was intended for use in a wireless communications-based system utilizing both a cellular communications network and an IP network as shown in Figure 2 below:



U.S. Patent 9,020,621 (“Network Based Media Enhancement Function Based on an Identifier”) at Figure 2.

23. The claimed invention in this patent was directed to calls made to a telephony network or a VoIP network where voice or a voice and video call is transacted. In addition to the inventive features of my patent, the patent specification also walks through some well-known architectures and methods for routing calls, including VoIP calls. Figure 2 above depicts the integration of the media enhancement architecture with legacy circuit switch telephony networks. Figure 3 below depicts the integration of the media enhancement architecture with the 3GPP Internet Media Subsystem (IMS) packet-based telephony system, which supported Voice over LTE (“VoLTE”) telephony services.



Id. at Figure 3.

24. My CV, which includes a more detailed summary of my background and experience, as well as a complete list of my publications and a list of previous engagements in patents, is included as Exhibit 1004.

II. Materials Relied on in Forming My Opinions

25. In forming my opinions expressed in this declaration, I have relied on my own knowledge, experience, and expertise, as well as the knowledge of a POSA in the relevant timeframe.

26. In addition, I have reviewed the Challenged Patent (Ex1001), its prosecution history (Ex1002), and the following references:

Exhibit	Brief Description
Ex1005	U.S. Patent Application Publication 2007/0021120 (“Flore”)
Ex1006	3GPP TS 23.002, “Network architecture,” March 2006.

III. Level of Ordinary Skill in the Art

27. My opinions are provided based on what a person of ordinary skill in the art in the technical field of the purported invention would have understood at the time of the purported invention of the Challenged Patent. Around 2008, a person of ordinary skill in the art (“POSA”) in the field of the 990 Patent’s field would have had a bachelor’s degree in electrical engineering, computer engineering or an equivalent, as well as two years of industry experience related to telecommunications networks. Such knowledge would encompass the design, architecture, and operations of mobile telecom networks, including gateways, servers, and user devices that were compliant with various standards, and how they interact with other components of a radio access network. Additional graduate education of a POSA could substitute for professional experience, or significant experience in the field could substitute for formal education. The basis for my familiarity with the level of ordinary skill is my interaction with large numbers of workers in the telecommunications and communications industry who were at this level of skill. As shown by my experience listed above and my CV (Ex1004), I was qualified as a POSA at the relevant time.

28. In reaching this opinion as to the hypothetical person of ordinary skill in the art, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level and professional capabilities of workers in the field.

29. I have been informed and understand that the content of a patent and prior art should be interpreted the way a person of ordinary skill in the art would have interpreted those references at the time of the invention of the patent. I understand that the person of ordinary skill is a hypothetical concept referring to one who thinks along the lines of conventional wisdom at the time.

IV. Overview of the 990 Patent

30. U.S. Pat. No. 8,310,990 entitled “System, Method, and Device for Routing Calls Using a Distributed Mobile Architecture” issued on November 13, 2012. Ex1001, Cover. The 990 Patent claims priority to Application No. 12/172,639, filed July 14, 2008, and I have been asked to assume the Challenged Claims are entitled to that date.

31. The 990 Patent relates to “[m]ethods and devices for routing communications between distributed mobile architecture (DMA) servers using DMA gateways.” Ex1001, Abstract. The 990 Patent states “the last decade of the telecommunications boom has not alleviated the disparities between urban and

rural communities,” citing that “[t]he average imbalance, in terms of telephone penetration, in Asia, for example, is over ten to one and is often as high as twenty to one.” *Id.*, 1:32-36.

32. The 990 Patent continues that “[c]urrent telephone systems are expensive to deploy” and provides an example of a “typical cellular system that includes a mobile switching center (MSC), a base station controller (BSC) and a home location register/visitor location register (HLR/VLR) can cost over \$2.0 million.” *Id.*, 1:46-49.

33. Thus, to solve the problem of high deployment costs, the 990 patent purports to satisfy the “need for an improved communications system that is relatively inexpensive to deploy and relatively inexpensive to operate, as well as able to integrate different communications systems.” *Id.*, 2:5-9. To that end, the 990 patent describes an apparatus called a distributed mobile architecture (DMA) server, such as, for example, a portable unit depicted in Figure 1 (reproduced below):

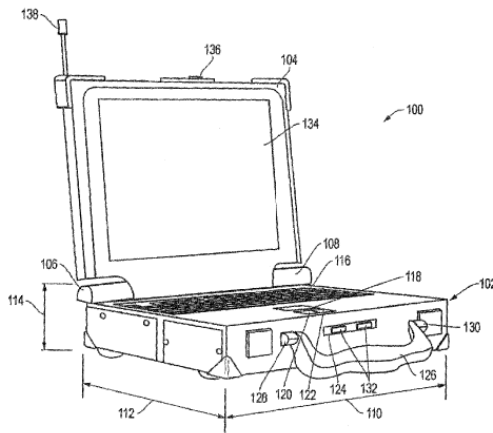


FIG. 1

34. The 990 Patent states that “[i]n a particular embodiment, the DMA server 406 is essentially a processor, or computer, having a housing and a computer readable medium 500” embedding “a mobile switching center (MSC) module 506 and a base station controller (BSC) module 508” *Id.*, 8:17-20; *see also* Fig. 5.

35. The “DMA server enables the deployment or expansion of a communications network to... rural areas where remoteness of the area to be served or a relatively small customer base to be served make the installation of a conventional telephone system impractical or otherwise undesirable.” Ex1001, 4:56-60. The DMA server “may include a mobile switching center (MSC) module 506 and a base station controller (BSC) module 508 embedded within [a] computer readable medium.” *Id.*, 8:17-20.

36. The 990 Patent describes enabling communications of wireless devices connected to different DMASes through a private IP network, and bridging

communications between disparate private IP networks with a “Distributed Mobile Architecture Gateway” (DMAG) and DMAG Network, enabling hand-off for a mobile device traveling between two DMASeS served by two different private networks. *See* Fig. 6, reproduced below, and *id.*, 11:36-39 (“[e]mbodiments of the present disclosure enable devices on separate networks to communicate with each other via DMA gateways that bridge separate network and communications systems.” *Id.*, 11:36-39).

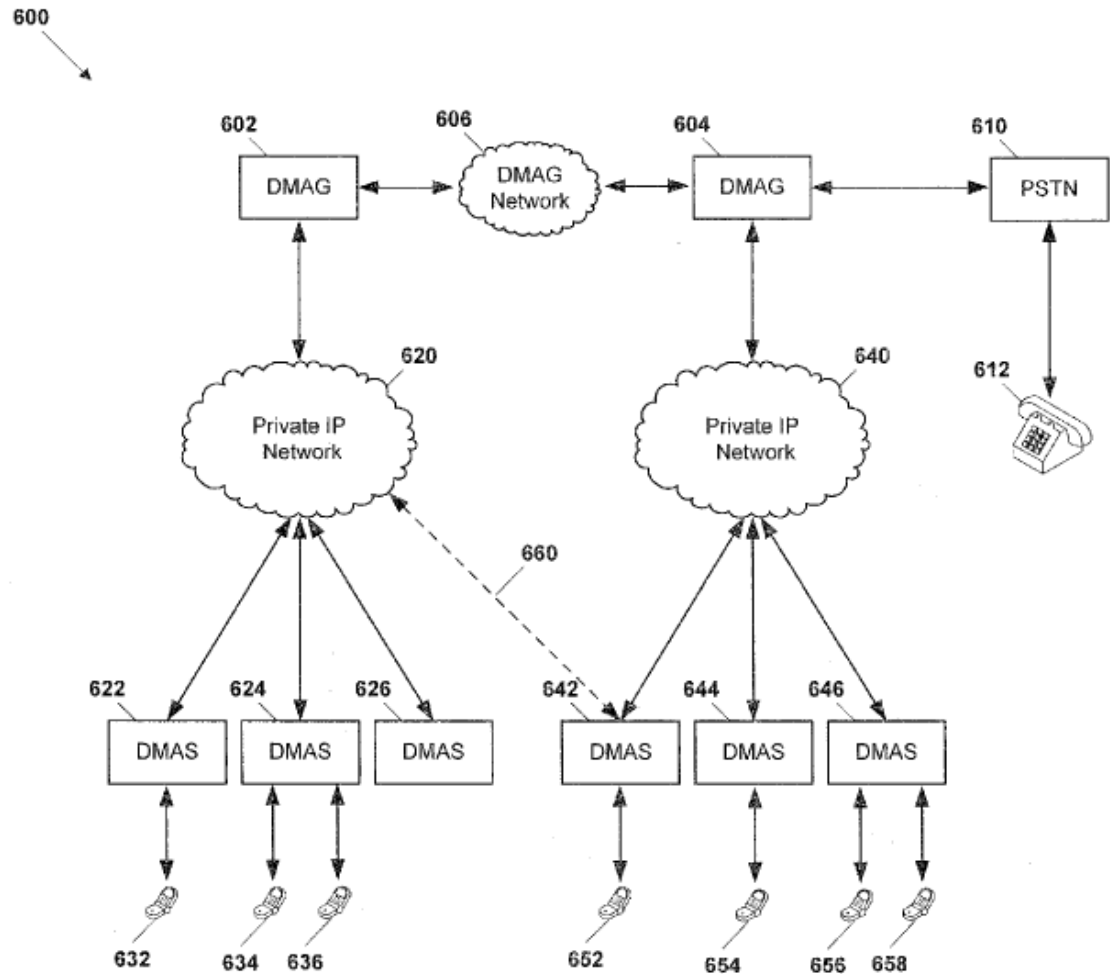


FIG. 6

37. “To facilitate communications between devices serviced by different networks, the DMA gateways 602 and 604 maintain information identifying the devices that each services.” Ex1001, 11:60-62. “When a DMA gateway detects that it is in communications range with one or more DMA servers, the DMA gateway sends communications information from the DMA servers or other communications networks to one or more other DMA gateways or to a central

database.” *Id.*, 15:50-55. The communications information “includes register information, such as home location register (HLR) information and visitor location register (VLR) information maintained by the DMA servers or other communications networks.” *Id.*, *Id.*, 15:66-16:2.

38. I have been informed by counsel for this Petition that I should assume the earliest possible effective filing date for the 990 patent is July 14, 2008. I have also been informed by counsel for this Petition that I should assume the invention date for this patent is the same as its earliest effective filing date.

V. Claim Construction

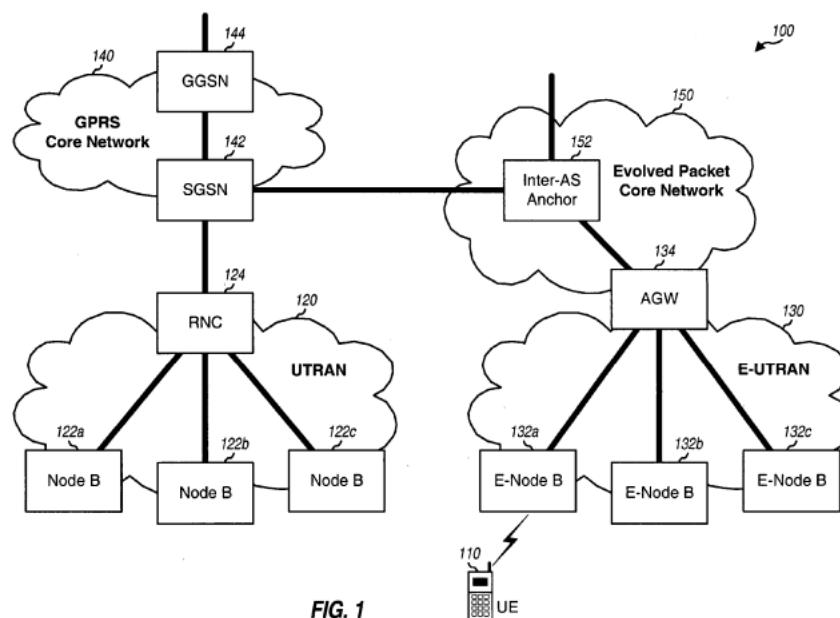
39. It is my understanding that for the purposes of this *inter partes* review, the claim terms are given their ordinary and customary meaning as would have been understood by a POSA in light of the specification and prosecution history, unless the inventor has set forth a special meaning for a term. I have also been informed that claim terms only need to be construed to the extent necessary to resolve the unpatentability inquiry

VI. Discussion of Issues Concerning the State of the Art

A. Overview of Flore (Ex1005)

40. U.S. Patent Application Publication 2007/0021120 to Flore (“Flore”) was published on January 25, 2007, more than a year before the earliest effective filing dates of the 990 Patent.

41. Flore discloses an exemplary network deployment consisting of two radio access networks (RANs). As one network deployment example, Flore discloses that the first RAN is a Universal Terrestrial Radio Access Network (UTRAN) 120 and the second RAN is an Evolved UTRAN (E-UTRAN) 130, shown in Fig. 1 (reproduced below):



Ex1005, Fig. 1. UTRAN 120 includes Node Bs coupled to Radio Network Controllers (RNCs) and E-UTRAN 130 includes Evolved Node Bs coupled to Access Gateways. Both Node Bs as well as Evolved Node Bs may be base stations. The E-UTRAN radio access network connects various E-Node Bs 132a-c to an AGW (“Access Gateway”). “Node Bs 122 provide radio communication for UEs within their coverage. ... E-Node Bs 132 provide radio communication for

UEs within their coverage and may perform radio resource management. AGW 134 provides control for E-Node Bs 132.”) *Id.* at [0026], [0027].

42. Flore describes the same problem identified by the 990 Patent — integrating *different* communication systems. *Compare* Ex1005, [0003] with Ex1001, 1:66–2:2. *See also* Ex1005, [0029] (describing functionality that “minimizes impact to legacy networks 120 and 140 to interoperate with new networks 130 and 150.”) Flore recognizes that “Inter-AS Anchor 152 provides interoperability between E-UTRAN 130 and UTRAN 120 and GPRS core network 140.” Ex1005, [0029]. Inter Access System Anchor (IASA) 152 “interfaces with AGW 134 and also with SGSN 142 in the GPRS core network 140.” *Id.*

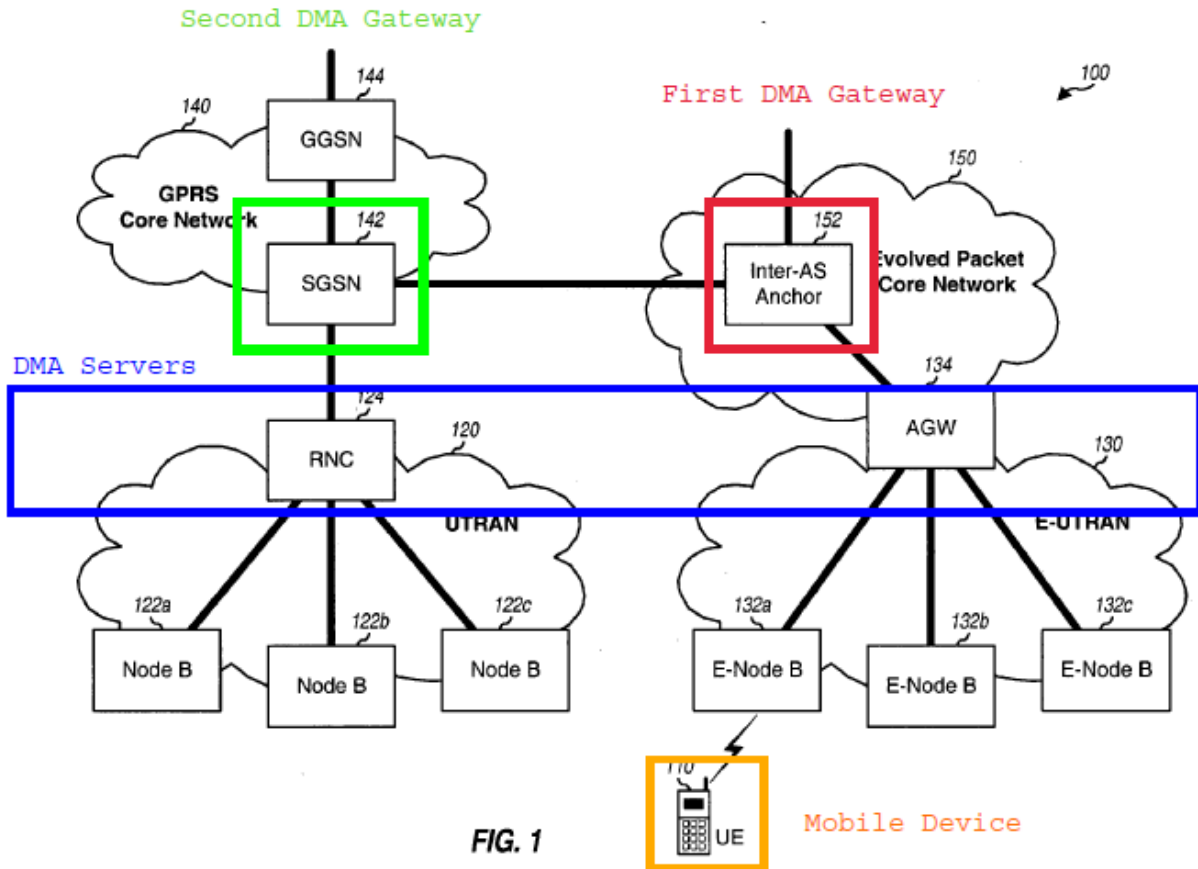
43. A POSA would have recognized that both Flore and the 990 Patent propose the same solution, as well. Flore teaches that “Inter-AS Anchor 152 may communicate with SGSN 142 via a Gn interface, which is a legacy interface between SGSNs and GGSNs within a GPRS core network. The use of the Gn interface allows SGSN 142 to communicate with Inter-AS Anchor 152 in the same manner as with another SGSN, which minimizes impact to legacy networks 120 and 140 to interoperate with new networks 130 and 150.” *Id.* Likewise, the 990 patent describes functionality of the DMA gateways in the same way: “embodiments of the DMA gateways also enable legacy networks and devices participating in the legacy networks to communicate with devices serviced by one

or more of the DMA servers” and further that “[a] first interface [included in a first DMA gateway] is adapted to communicate with a legacy communications network.” Ex1001 at 9:22-25, 3:16-18. Accordingly, a POSA would have understood that Inter-AS Anchor 152 of Flore operates as the “first DMA gateway” of the claims during a handover process as a UE moves out of the coverage of U-TRAN to the E-UTRAN. *See, e.g.*, Ex1005, at [0056].

44. In Figure 1 of Flore, the UTRAN 120 connects various radio towers (Node B 122a-c) through an RNC 124 to an SGSN 142. Ex1005, [0026] (“UTRAN 120 includes Node Bs coupled to Radio Network Controllers (RNCs).” The “Node Bs 122 provide radio communication for UEs [user equipment] within their coverage.” *Id.* The “RNC 124 provides control for Node Bs 122 and perform radio resource management, some mobility management functions, and other functions to support communication between the UEs and the UTRAN.” *Id.* Further, Flore recognizes that “AGW 134 is considered as a source RNC” and “RNC 142 is a target RNC.” Ex1005, [0041]. In an analogous manner, the 990 patent describes that a DMA server includes a cellular radio network controller (CRNC) (e.g., CRNC 530 shown in DMA server of Fig. 5) that “can provide cellular radio resource management and cellular call control.” Ex1001 at 8:41-42; *see also id.*, 7:32-35, 8:34-35 (“the DMA server 406 may include ... a base station controller (BSC) module 508” and “the BSC module 508 includes a cellular radio

network controller (CRNC) 530”). Accordingly, a POSA would have understood that the RNC and AGW described in Flore serve as the “**distributed mobile architecture (DMA) servers**” of the asserted claims.

45. Flore teaches that the SGSN (“Serving GPRS Support Node”) 142 is in communication with a GPRS Core Network 140, which is also in communication with one or more GGSN (“Gateway GPRS Support Nodes”) 144. “SGSN 142 facilitates exchanges of packets between RANs and GGSN 144 and also performs mobility management for UEs. GGSN 144 performs routing function and exchanges packets with external data networks. SGSN 142 interfaces with RNC 124 in UTRAN 120 and supports packet-switches services for the UEs communicating with the UTRAN.” *Id.* at 0028. Flore recognizes that by exchanging IP packets with user devices, the SGSN 142 provides IP functionality: “UE 110 exchanges IP packets with SGSN 142.” Likewise, the 990 patent specifies that the second DMA gateway provides IP functionality (“the second DMA gateway 1050 is associated with a private IP network 1060 that services a plurality of DMA servers 1052, 1054, 1056 and the devices they serve”). Ex1001 at 14:33-36. Accordingly, a POSA would have understood that the SGSN operates as the “**second DMA gateway**” of the claims during a handover process as a UE moves out of the coverage of U-TRAN to the E-UTRAN. *See, e.g.*, Ex1005, [0056] and Fig. 1 (annotated):



46. Based on the above disclosures, a POSA would have understood that Flore and the 990 patent thus describe the same problem of integrating different communication systems to provide interoperability with new networks while minimizing impact to legacy networks. Such a person would have recognized that both propose the same solution: using gateways and servers to facilitate devices on different networks to communicate with each other. In addition, a POSA would have understood that both Flore and the 990 consider the same network scenario: handover of user devices. For example, Flore teaches techniques for performing handovers of user devices from one access network to another, and the 990 patent

considers handing off of communications when a mobile device moves from one coverage area to another. *See, e.g.*, Ex1005, at Abstract, [0003], Ex1001.

B. Opinions Related to the Claims of the 990 Patent, Flore and the State of the Art

1. “memory” / “home location register”

47. Flore explains that during a handover, an Update PDP Context Response Message is forwarded to the Inter-AS Anchor 152, which is a “DMA gateway.” Flore states “UE 110 may have established a call with E-UTRAN 130 by activating a Packet Data Protocol (PDP) context ... **AGW 134 stores the PDP context for UE 110** during the call and, in response to the request from SGSN 142, forwards the PDP context to Inter-AS Anchor 152, which forwards the information in an Update PDP Context Response message to SGSN 142 (also step 11).” Ex1005, [0046]. In response, the “Inter-AS Anchor 152 **updates its PDP context fields for UE 110**, so that future packets for the UE are forwarded to SGSN 142 instead of AGW 134.” *Id.*, emphasis added. After the handover is performed, Inter-AS Anchor 152 acts as a GGSN. *See* Flore [0039] (“FIG. 3D shows UE 110 communicating with UTRAN 120 after completing the inter-system handover. User data is exchanged between UE 110 and SGSN 142, which forwards the data to via [sic] Inter-AS Anchor 152 acting as the GGSN”), [0046] (“After the PDP context is updated, Inter-AS Anchor 152 acts as a GGSN to SGSN 142.”). Inter-AS Anchor 152 “emulates a virtual SGSN and a virtual GGSN... Inter-AS Anchor

152 behaves... as a GGSN after updating the PDP context.” *Id.* at [0050].

Moreover, Flore further explains that the Inter-AS Anchor would be comprised of “at least one processor **and a memory.**” Ex1005, [011] (emphasis added); *see also* Claim 30 (“The apparatus of claim 25, wherein the **memory stores Packet Data Protocol (PDP) context** for the UE”)

48. A POSA would have understood that a GGSN necessarily contains a location register—for example, Flore states “[t]he network entities in UTRAN 120 and GPRS core network 140 are described in 3GPP TS 23.002, entitled ‘Network architecture,’ March 2006.” Ex1006, at [0030]. The 3GPP TS 23.002 Technical Specification states:

- The Gateway GPRS Support Node (GGSN).

3GPP

Release 7

14

3GPP TS 23.002 V7.1.0 (2006-03)

The location register function in the GGSN stores subscription information and routeing information (needed to tunnel packet data traffic destined for a GPRS MS to the SGSN where the MS is registered) for each subscriber for which the GGSN has at least one PDP context active.

The GGSN is needed only in a PLMN which supports GPRS.

Thus a GGSN contains a “location register function” which “stores subscription information and routeing [sic] information ... for each subscriber for which the GGSN has at least one PDP context active.” This location register function is a “home DMA register.” Similarly, because Inter-AS Anchor 152 emulates a

GGSN, a POSA would have understood that also includes a location register function.

49. A POSA would likewise understand the Inter-AS Anchor's "PDP context fields for UE 110" are a home DMA register, or more generally, a memory of the Inter-AS Anchor. Inter-AS Anchor 152 necessarily has a list of entries for the UEs it serves, such as UE 110. Thus, by updating the PDP Context information with the address of SGSN 142 instead of AGW 134, the Inter-AS Anchor stores the communications information included in the Update PDP Context Response message to memory that includes a home DMA register.

2. *"a mobile switch center (MSC)"*

50. In Flore, the "legacy network" is the UTRAN 120 and GPRS core network 140. Ex1005, [0029] ("The use of the Gn interface allows SGSN 142 to communicate with Inter-AS Anchor 152 in the same manner as with another SGSN, which minimizes the impact to **legacy networks 120 and 140** to interoperate with new networks 130 and 150." The UTRAN network 120 is a "wireless communications network serviced by a mobile switching center (MSC).") Flore also states "[t]he network entities in UTRAN 120 and GPRS 140 are described in 3GPP TS 23.002, entitled 'Network architecture,' March 2006." The December 2005 version of this document (Ex1006) states in 3.3.1, "The CS domain refers to the set of all the CN entities... The entities specific to the CS

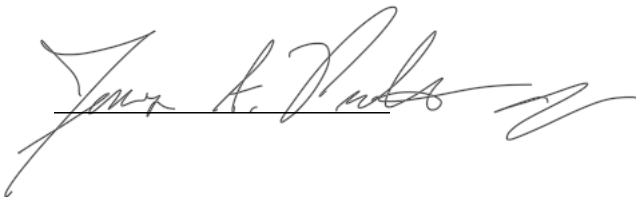
domain are: **MSC**, GMSC, VLR.” Ex1006 at 13. A POSA would therefore understand that UTRAN 120 is a wireless communications network serviced by a mobile switching center (MSC).

VII. Conclusion

51. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed this 14th day of June, 2025.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James A. Proctor, Jr.", written over a horizontal line.

James A. Proctor, Jr