

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION AND AFFIRMED NETWORKS, INC.

Petitioners,

v.

LEMKO CORPORATION,
Patent Owner.

Case No. IPR2023-00530
U.S. Patent No. 7,548,763

DECLARATION OF JAMES PROCTOR
IN SUPPORT OF PETITION FOR *INTER PARTES*
REVIEW OF U.S. PATENT NO. 7,548,763

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PETITIONER'S EXHIBIT LIST

Ex. No.	Brief Description
1001	U.S. Patent No. 7,548,763
1002	File History of U.S. Patent No. 7,548,763
1003	RESERVED
1004	<i>Curriculum Vitae</i> of James Proctor
1005	U.S. Patent No. 8,184,603 to Waylett et al.
1006	U.S. Patent No. 8,271,619 to Cope et al.
1007	RESERVED
1008	RESERVED
1009	Technical Specification, <i>Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS) – Stage 1 (3GPP TS 02.68 version 8.1.0 Release 1999)</i> , ETSI TS 100 925 v8.1.0 (2000-11)
1010	<i>interWAVE to provide wireless GSM network on cruise ship</i> , Wireless Networks Online, Dec. 21, 2000

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 the validity of Claims 1, 4, 6, 9, and 15 (“Challenged Claims”) of U.S. Patent No. 7,548,763 (“the ’763 Patent”).

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

3. Prior to this, 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

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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 or 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 Proximcom Wireless, LLC (“Proximcom”), 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. Proximcom 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 Proximcom’s technology include a mobile

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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

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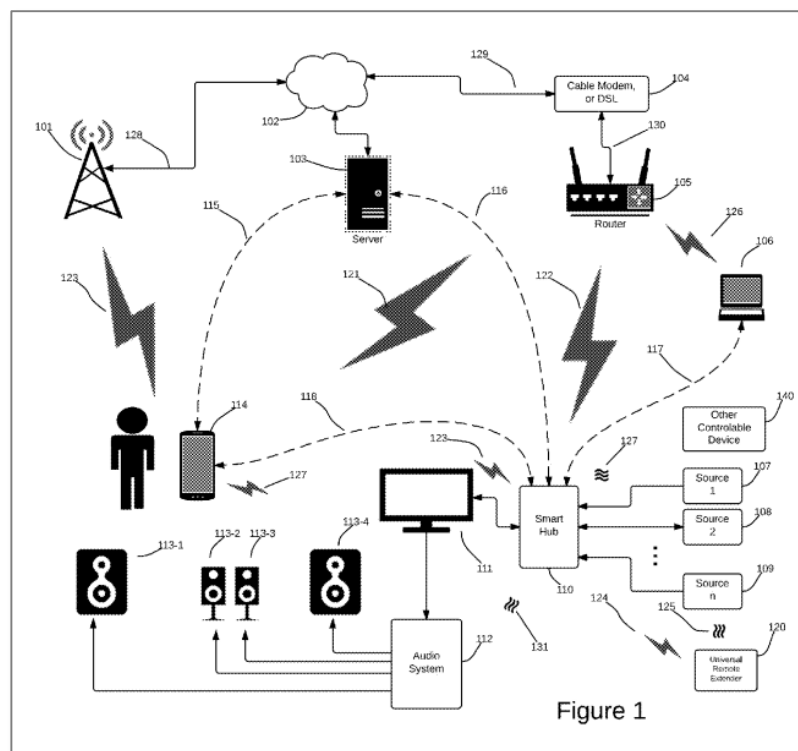
a joint development of I-CDMA cellular base stations in Seoul, South Korea that were used in a field trial in that country. Additionally, as co-founder and CEO of WiDeFi, I was responsible for similar such activities, as well as raising venture capital funding and reporting to the board of directors.

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 at 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 Report:

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:



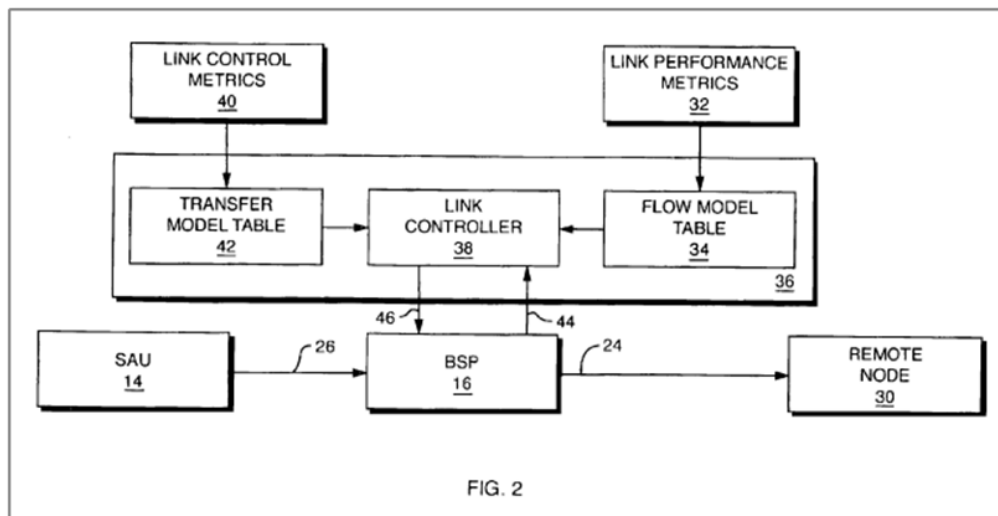
U.S. Patent 9,554,061 (“Smart Hub”) at Figure 1.

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.

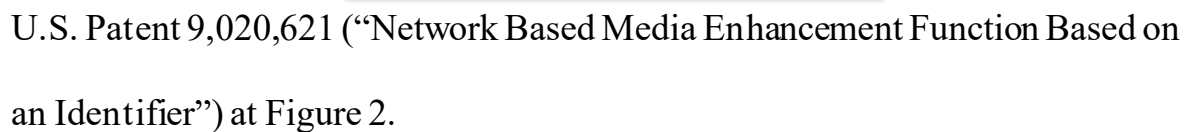
20. Figure 2 from the ’562 patent is pictured below:



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

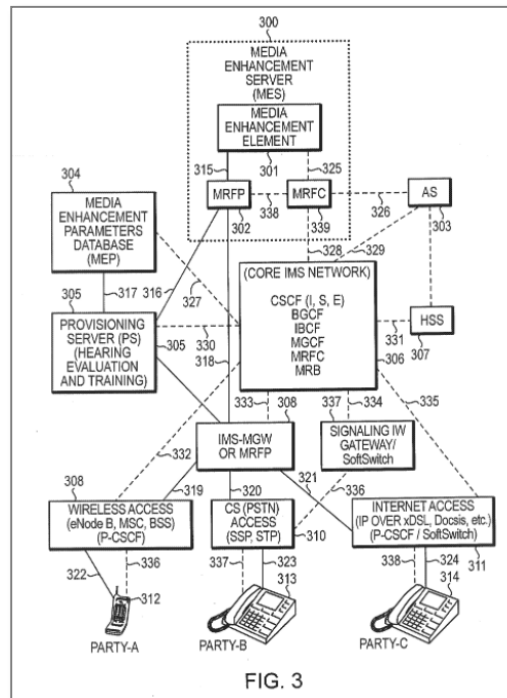
21. I included Figure 2 here because it depicts a block diagram of my claimed invention as shown in a telecommunication system, the conventional components of which were well known to me and any other POSA long before the earliest claimed priority date. For example, here, base station processor (“BSP”) 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 November 18, 2009, and the USPTO issued this patent on April 28, 2015. My patent here was directed to a network-based processing element for processing audio information to



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. Understanding of the Governing Law

A. Legal Standard for Prior Art

25. I understand that a patent or other publication must first qualify as prior art before it can be used to invalidate a patent claim.

26. I am informed by counsel that the applicable law in this case for prior art is 35 U.S.C. § 102 as written before the America Invents Act.

27. I am informed that the patent owner Lemko Corporation (“Lemko”) contends that the ’763 patent claims priority to April 13, 2005.

28. I understand that the “priority date” of a patent is the date on which it is filed, or the date on which an earlier-filed patent application is filed if the patentee claims it is entitled to the benefit of priority to that earlier-filed patent application. To be entitled to that benefit, I further understand that the earlier filed application must support the claimed subject matter in the manner required by 35 U.S.C. § 112. I understand that this section requires the patent’s specification to contain a sufficient written description of the claimed invention to demonstrate that the applicant actually possessed the invention as of the filing date as broadly as it is claimed. In considering whether this written description requirement is met, I understand that I should consider the written description from the viewpoint of a person of ordinary skill in the art. I also understand that I should consider whether this person of ordinary skill would have recognized that the written description describes the full scope of the claimed invention and that the inventor actually possessed that full scope as of the claimed effective filing date. I also understand that law for priority is not the same as the obviousness analysis under 35 U.S.C. § 103.

29. I further understand that the priority date is significant because patents, systems, or documents that are public prior to the priority date may invalidate the claims.

30. I understand that a U.S. patent or published patent application may qualify as prior art to an asserted patent if the date of publication or issuance is prior to the invention in the asserted patent.

31. I understand that a U.S. patent or published patent application may qualify as prior art to the asserted patent if the application for that U.S. patent or published patent application was filed in the United States before the invention of the asserted patent.

32. I understand that to qualify as prior art, a reference must contain an enabling disclosure that allows one of ordinary skill to practice the claims without undue experimentation.

33. I understand that documents and materials that qualify as prior art can be used to invalidate a patent claim as anticipated or as obvious.

B. Invalidity by Anticipation

34. I understand that once the claims of a patent have been properly construed, determining anticipation of a patent claim requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

35. I understand that a prior art reference “anticipates” an asserted claim, and thus renders the claim invalid, if all elements of the claim are disclosed in that prior art reference, either explicitly or inherently (i.e., necessarily present or implied).

36. I have written this report with the understanding that in an *inter partes* review (“IPR”), anticipation must be shown by a preponderance of the evidence.

C. Invalidity by Obviousness

37. I have been instructed by counsel on the law regarding obviousness, and understand that even if a patent is not anticipated, it is still invalid under 35 U.S.C. § 103, as written before the America Invents Act, if the differences between the claimed subject matter 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 of ordinary skill in the pertinent art.

38. I understand that a person of ordinary skill in the art provides a reference point from which the prior art and claimed invention should be viewed. This reference point prevents a person of ordinary skill from using one’s insight or hindsight in deciding whether a claim is obvious.

39. I also understand that an obviousness determination includes the consideration of various factors such as (1) the scope and content of the prior art, (2) the differences between the prior art and the challenged claims, (3) the level of

ordinary skill in the pertinent art, and (4) the existence of secondary considerations such as commercial success, long-felt but unresolved needs, failure of others, etc.

40. I am informed that secondary considerations of non-obviousness may include (1) a long-felt but unmet need in the prior art that was satisfied by the invention of the patent, (2) commercial success or lack of commercial success of processes covered by the patent, (3) unexpected results achieved by the invention, (4) praise of the invention by others skilled in the art, (5) taking of licenses under the patent by others, and (6) deliberate copying of the invention. I also understand that there must be a relationship or “nexus” between any such secondary indicia and the invention. I further understand that contemporaneous and independent invention by others is a secondary consideration supporting an obviousness determination.

41. I understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the link between two or more prior art references is simple common sense. I further understand that obviousness analysis recognizes that market demand, rather than scientific literature, can drive innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

42. I understand that if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

43. I also understand that practical and common-sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I further understand that a person of ordinary skill in the art looking to overcome a problem will often be able to fit the teachings of multiple publications together like pieces of a puzzle, although the prior art need not be like two puzzle pieces that must fit perfectly together. I understand that obviousness analysis therefore considers the inferences and creative steps that a person of ordinary skill in the art would employ under the circumstances.

44. I understand that a particular combination may be proven obvious by showing that it was obvious to try the combination. For example, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp because the result is likely the product not of innovation but of ordinary skill and common sense.

45. I understand that the combination of familiar elements according to known methods may be proven obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, obviousness likely bars its patentability.

46. It is further my understanding that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. Additionally, a reference outside of the field of endeavor may still be prior art if the reference is reasonably pertinent to the particular problem being solved by the patentee.

47. I understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense and knowledge of one of skill in the art.

48. I understand that a person of ordinary skill could have combined two pieces of prior art or substituted one prior art element for another if the substitution can be made with predictable results, even if the swapped-in element is different

from the swapped-out element. In other words, the prior art need not be like two puzzle pieces that must fit together perfectly. The relevant question is whether prior art techniques are interoperable with respect to one another, such that a person of skill would view them as a design choice, or whether a person of skill could apply prior art techniques into a new combined system. The person of ordinary skill would use ordinary creativity and is not limited like an automaton.

49. In sum, my understanding is that prior art teachings are properly combined where a person of ordinary skill in the art, having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a reason for combining the elements of multiple prior art references in the claimed manner.

50. I have been informed and understand that the obviousness analysis requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

51. I have written this report with the understanding that in an IPR, obviousness must be shown by a preponderance of the evidence.

D. Interpreting Claims Before the Patent Office

52. I understand that IPR is a proceeding before the United States Patent & Trademark Office (“USPTO”) for evaluating the validity of issued patent claims. I understand that, in an IPR, a claim term is interpreted in a manner consistent with the standard used in patent litigation. That standard generally construes the claims according to their “ordinary and customary” meaning in view of the claim language, specification, and file history, and where applicable, relevant other evidence.

53. I understand that a patent’s “specification” includes all the figures, discussion, and claims within the patent. I understand that the USPTO will look to the specification and prosecution history to see if there is a definition for a given claim term, and if not, will apply the ordinary and customary meaning from the perspective of a POSA at the time in which the alleged invention was made.

E. Materials Relied on in Forming My Opinions

54. 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.

55. In addition, I have reviewed the Challenged Patent (Ex. 1001), its prosecution history (Ex. 1002), and the references listed in the Table of Exhibits of this declaration.

F. Level of Ordinary Skill in the Art

56. 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 2005, a POSA in the field of the '763 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 (Ex. 1004), I was qualified as a POSA at the relevant time.

57. 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.

58. 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.

G. The Challenged Claims are Obvious

59. In my opinion, and as I explain below, claims 1, 4, 6, 9, and 15 are obvious over Waylett in view of Cope.

III. The '763 Patent

A. Assumed Effective Filing Date

60. The '763 Patent was filed on April 13, 2005. For purposes of this Declaration, I have been informed by counsel to assume that the '763 claims are entitled to a priority date of April 13, 2005.

B. Overview of the Challenged '763 Patent

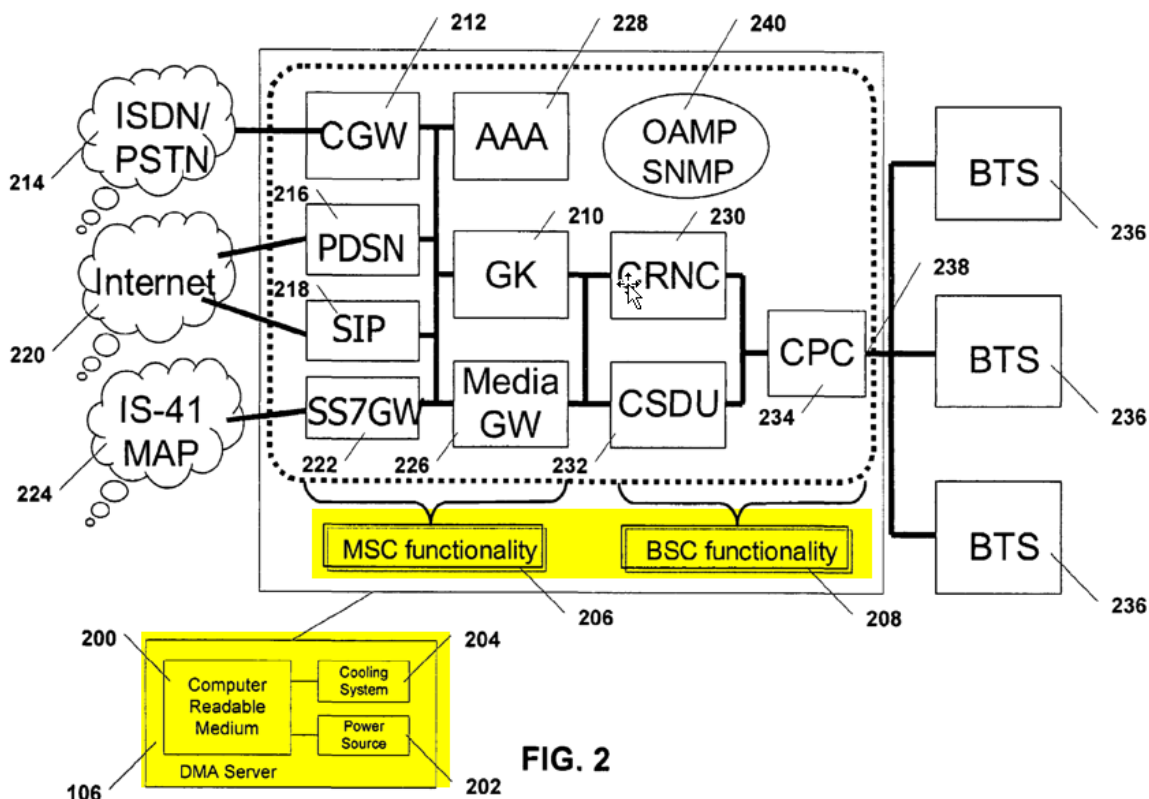
61. US Pat. No. 7,548,763 entitled "System, Method, and Device for Providing Communications Using A Distributed Mobile Architecture" issued on June 16, 2009. Ex. 1001 at Cover. The '763 Patent resulted from Application No. 11/105,173, filed April 13, 2005. For the purposes of this Declaration, I assume that the Challenged Claims are entitled to a priority date of April 13, 2005.

62. The '763 patent relates to mobile telecommunication networks. For example, the Abstract of the '763 patent states that this patent is directed at “[a] method of providing telephone communication is disclosed and includes allowing a group call between four or more participants. Each participant calls from a separate telephone device that communicates with a base transceiver station that is coupled to a distributed mobile architecture server.” Ex. 1001, Abstract. The '763 patent states that “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 1.2.” Ex. 1001, 1:22-26.

63. The '763 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.*, 1:34-38.

64. Thus, to solve the problem of high deployment costs, the '763 patent purports to satisfy the “need for an improved communications system that is relatively inexpensive to deploy and relatively inexpensive to operate.” Ex. 1001, 1:48-50. To that end, the '763 patent describes a distributed management architecture (DMA) server (*e.g.*, DMA 106) including conventional features of a

BSC 208 and MSC 206 in a single enclosure, which allows mobile subscribers to communicate wirelessly, shown in Figure 2 below.



Ex. 1001, Fig. 2 (emphasis added), 4:1–31.

65. In describing the DMA server, the '763 patent states that “[t]he DMA server 106 is essentially a processor, or computer, having a housing and a computer readable medium 200” embedding “a mobile switching center (MSC) module 206 and a base station controller (BSC) module 208.” Ex. 1001, 4:3-5, 4:14-17.

66. Claim 1 is representative of the challenged claims and shown below:

[Claim] 1. A system, comprising:

a first distributed mobile architecture server comprising:

a first computer readable medium;

a first mobile switching center module embedded in the first computer readable medium;

a first base station controller module embedded in the first computer readable medium; and

a first call detail record (CDR) generation program embedded in the first computer readable medium,

wherein the first distributed mobile architecture server is in direct physical connection with a first wireless transceiver; and

a second distributed mobile architecture server, comprising:

a second computer readable medium;

a second mobile switching center module embedded in the second computer readable medium;

a second base station controller module embedded in the second computer readable medium;

a second call detail record (CDR) generation program embedded in the second computer readable medium; and

a program to allow a group call among four or more mobile communication devices, wherein the program is embedded in the second computer readable medium,

wherein the second distributed mobile architecture server is in direct physical connection with a second wireless transceiver;

wherein telephony traffic received at the first wireless transceiver of the first distributed mobile architecture server is transmitted from the first

distributed mobile architecture server to the second distributed mobile architecture server via a peer-to-peer connection.

67. The '763 patent describes the DMA server as “a flexible communications device ... [that] can operate stand-alone or seamlessly within an existing cellular or other network. Moreover, the DMA server 106 can be integrated with virtually any third party base station. The DMA server 106 can operate with multiple air interfaces including CDMA IS-95, CDMA 1X, CDMA EVDO, GSM, GPRS, W-CDMA, 802.11 (Wi-fi), 802.16 (Wi-fi), etc. Further, the DMA server 106 can provide integrated prepaid billing, OAMP, network management, and AAA functionality. The DMA server 106 can include a Java based user interface and feature configuration system. Also, the DMA server 106 can provide real time call metering, call detail record (CDR) generation, and real time call provisioning.” Ex. 1001, 11:14-29. According to the '763 patent, the DMA server “may be implemented using ... widely available computer equipment.” Ex. 1001, 11:31-32.

68. The '763 patent describes a system in which “each DMA server 106 is interconnected with the other DMA servers 106 via an Internet protocol network 110” and that “there exists a peer-to-peer connection 112 between each DMA server 106” in the system.” Ex. 1001, 3:34-37. The DMA servers handle telephony

traffic and “can hand-off calls to each other as mobile communication devices move around and between the cellular coverage sites 102.” Ex. 1001, 3:41-44.

C. Relevant Prosecution History

69. During prosecution, I understand that an Examiner at the U.S. Patent and Trademark Office rejected the claims multiple times. These rejections included numerous references, such as U.S. Pat. No. 6,411,825 to Csapo and U.S. Pub. No. to Bertino 2006/0046760. Ex. 1002 at 87.

70. I understand that Lemko ultimately distinguished the claims from the prior art based on the CDR feature:

The cited portions of Lee, Csapo and Bertino, individually or in combination, do not disclose or suggest the specific combination of claim 11. For example, the cited portions of the above-cited references fail to disclose or suggest a first call detail record (CDR) generation program embedded in the first computer readable medium of the first distributed mobile architecture (DMA) server or a second call detail record (CDR) generation program embedded in the second computer readable medium of the second DMA server, as in claim 11. Ex. 1002 at 230 (emphasis omitted).

71. I understand that the Examiner allowed the claims based on Lemko’s remarks in the January 9, 2009 response, like the one shown above. This reasoning from Lemko contended that the CDR feature was not disclosed by any of the prior art considered by the Examiner. Waylett, however, was not considered by the Examiner.

IV. Claim Construction

72. The Board construes claims under the same standard used in civil actions in federal district court. It is my opinion that, for purposes of this Declaration¹, no construction of claim terms is necessary.

V. The Challenged Claims Are Obvious

73. Based on my study of the references below, as well as on my education and years of experience in the relevant art, it is my opinion that these references render obvious each and every element of the challenged '763 patent claims. In my opinion, the challenged claims are unpatentable. As further explained below, I show that claims 1, 4, 6, 9, and 15 are obvious over Waylett in view of Cope.

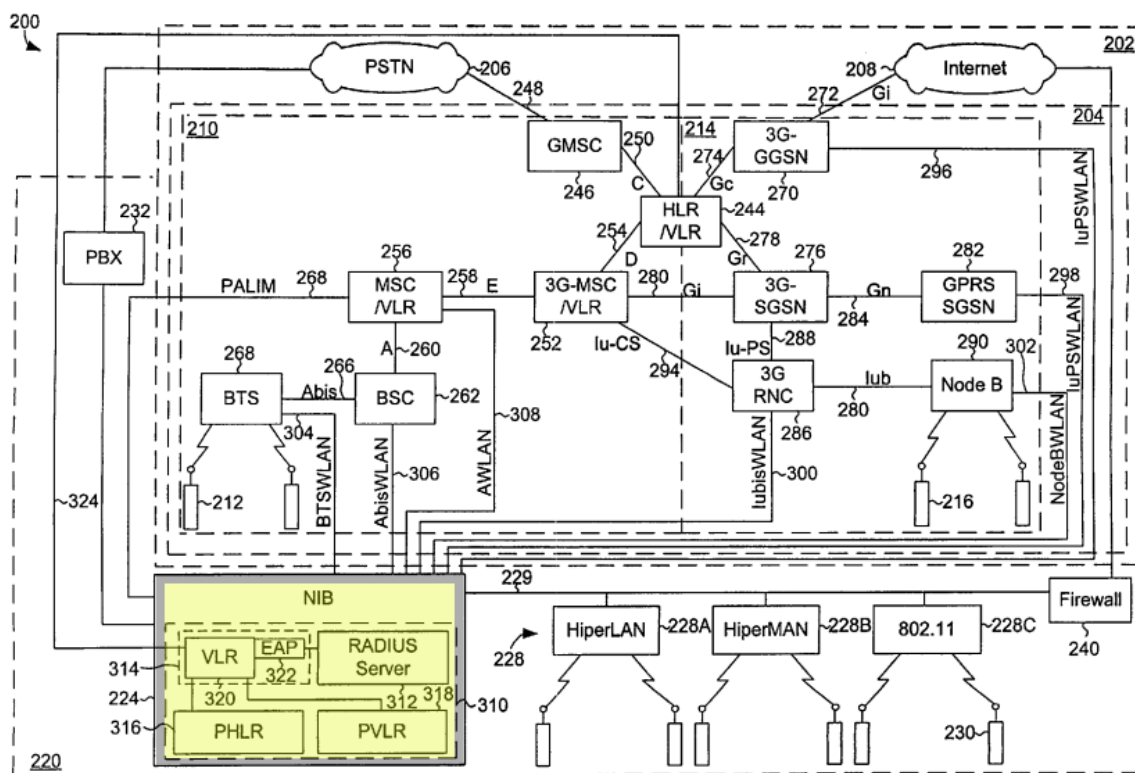
A. Overview of the Principal Prior Art

1. Waylett (Ex. 1005)

74. US Patent No. 8,184,603 to Waylett ("Waylett") was filed on July 15, 2004 and claims priority through several continuations filed as early as January 14, 2003. Waylett issued on May 22, 2012. I have been instructed to assume that Waylett is prior art.

¹ This claim-construction analysis is not a concession as to the scope of any claim term in litigation, or a waiver of any argument in any proceeding that claim terms are indefinite, invalid, or unpatentable.

75. Waylett describes a device termed Network-In-A-Box (e.g., NIB 224) including conventional features of a BSC and MSC in a single enclosure, which allows user equipment terminals to communicate wirelessly, shown in Figure 6 below. Waylett states that “[t]he NIB 224 includes a MSC, a BSC and a BTS in a single enclosure.” Ex. 1005, 9:41–42. Waylett states that an example of NIB 224 can be “a complete stand-alone Network-In-a-Box (NIB), such as a WAVEXpress NIB platform, commercially available from Interwave Communications, of Menlo Park, Calif.” Ex. 1005, 8:7-10.



Ex. 1005, Fig. 6.

76. In describing the NIB, Waylett states that the NIB includes “(i) a power supply 138; (ii) a number of plug-in-modules or cards 140, including a number of radio frequency (RF) transceivers for communicating with the RTSs 118; (iii) an RF combiner 142 for combining signals to and/or from the multiple transceivers; (iv) an RF power amplifier 144 for amplifying received and/or transmitted signals; and (v) an antenna 146.” Ex. 1005, 8:10-17.

77. Waylett states that the NIB 224 couples the WLAN 228 to the public network 202 and is “adapted to enable voice and data communication between the private UEs 230 and the private mobile stations 226, public mobile stations 212, public UEs 216, PBX telephones 234, and telephones ... coupled to the PSTN 206 and/or the Internet 208.” Ex. 1005, 9:47-53.

78. Waylett describes the same problem identified by the ’763 patent: high deployment costs of conventional telephone systems. *Compare* Ex. 1005, 1:44-49 *with* Ex. 1001, 1:34-38. Waylett, for example, describes “the difficulty and expense of scaling the network to provide services to additional users or additional services.” Ex. 1005, 1:57-60. The ’763 patent discusses a similar problem in the need for a scalable system that can “broaden, or otherwise extend, cellular coverage.” Ex. 1001, 11:59-63. A POSA would have understood that both Waylett and the ’763 patent are directed toward the same problem.

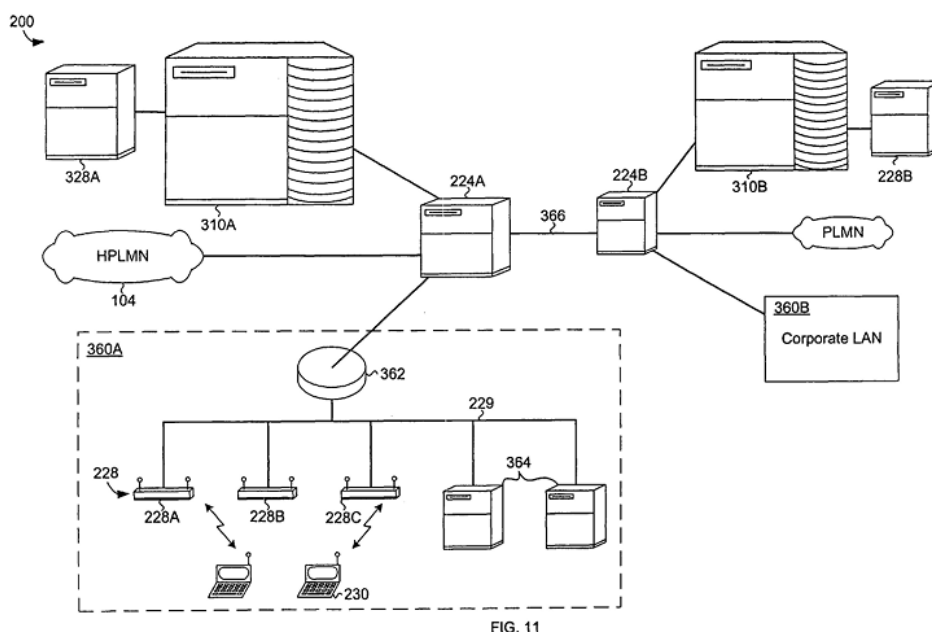
79. A POSA would have recognized that both Waylett and the '763 patent propose the same solution, as well. Waylett discloses “a complete, stand-alone Network-In-a-Box,” *e.g.*, NIB 224 for use in a communication system “providing voice and data communication between a public network and a number of UEs.” Ex. 1005, 8:7-8, 2:25-27. Likewise, the '763 patent describes a DMA server as “a flexible telecommunications device ... [that] can operate stand-alone or seamlessly within an existing cellular or other network,” “can handle telephony traffic,” and “can include a data network connection.” Ex. 1001, 11:14-18, 3:34-39, 9:25-26. Notably, Waylett describes its NIB as having similar components as the DMA server in the '763 patent: *a MSC, a BSC, and a BTS in a single enclosure. See* Ex. 1005, 9:41-42; Ex. 1001, 4:14-17.

80. In addition, both the '763 patent and Waylett recognize the need for telephony services to rural and underserved communities. The '763 patent states “the last decade of the telecommunications boom has not alleviated the disparities between urban and rural communities.” Ex. 1001, 1:22-24. Similarly, Waylett invention provides a cost-effective solution to help expand networks to “underserved areas or communities” or “communities hitherto unserved by conventional wireless or wired communications systems.” Ex. 1005, 7:59-63, 7:67-8:3.

81. Both the '763 patent and Waylett describe that their systems are designed to work in similar environments. The '763 patent states “FIG. 12

illustrates an in-building telecommunications network that is generally designated 1200. FIG. 12 depicts a structure 1202, e.g., an office building, a commercial building, a house, etc. An enterprise local area network (LAN) 1204 is installed within the building 1202.” Ex. 1001, 9:45-49. Similarly, Waylett identifies similar deployment: “[a] communication system according to the present invention is particularly useful to operators of hotels, hotel chains, airports, airport building maintenance, and other like enterprises for deployment of in-building broadband RF services, or for users of UEs with e-mail messaging capabilities.” Ex. 1005, 4:63-67.

82. Like the ’763 patent describing interconnected DMA servers, Ex. 1001, Fig. 1, 3:21-50; *see id.*, Fig. 11, 17:7–16. Waylett describes that multiple NIBs can work together, such as those in Figure 11:



83. Waylett explains that such systems, shown above, are “particularly suitable for use in enterprises operating a number of different WLANs 228 or corporate LANS 360A, 360B, at a number of different sites.” Ex. 1005, 17:11–14; *see also id.* 17:7–16. Similarly, the ’763 patent describes “an office DMA server 1214 can be connected to the enterprise LAN 1204.” Ex. 1001, 9:58-64.

84. Based on the above disclosures, a POSA would have understood that Waylett and the ’763 patent thus describe the same problem of high deployment costs of conventional telephone systems and recognize the need to serve under served communities. Such a person would have recognized that both propose the same solution: a single enclosure that includes a MSC, a BSC, and a BTS.

2. Cope (Ex. 1006)

85. US Patent No. 8,271,619 to Cope (“Cope”) was filed on September 5, 2001 and issued September 18, 2012. I have been instructed to assume that Cope is prior art.

86. Cope describes using peer-to-peer IP (“P2P”) connections between different service providers to communicate telephony traffic. Cope defines “a ‘peer-to-peer IP connection’ [as] an IP connection between different service providers that is established by mutual agreement for the exchange of IP traffic.” Ex. 1006, 6:3-6. Cope explains that, by using P2P connections, it “allows an end-user who is connected to a first service provider to obtain packet-based telephony services from a second service provider, even though the end-user is not directly connected to the second service provider” based on “an IP tunnel through both the first service provider and a peer-to-peer IP connection between the first and second service providers.” Ex. 1006, 3:57-64.

87. Like both the ’763 patent and Waylett, *see* ¶ 80 above, Cope’s technology is also concerned with “expand[ing] potential service coverage areas—even to end-users in remote areas.” Ex. 1006, 4:6-9; Ex. 1001, 8:50–53; Ex. 1005, 7:59-63, 7:67-8:3. Cope’s solution addresses this problem using a P2P connection that “may be quickly and cheaply deployed.” Ex. 1006, 4:18-23, 4:4-6.

B. Claims 1, 4, 6, 9, and 15 Are Rendered Obvious by Waylett (Ex. 1005) and Cope (Ex. 1006)

1. Claim 1

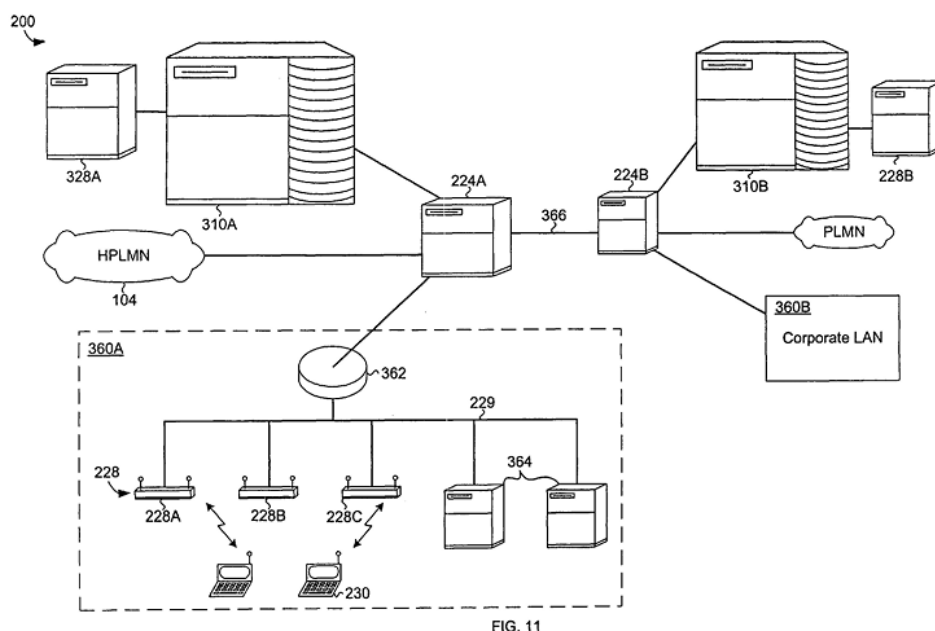
88. In my opinion, a POSA would have understood that Waylett discloses the limitations of claim 1.

a. Preamble

89. The preamble of claim 1 recites “*A system, comprising.*”

90. To the extent the Board considers the preamble to be limiting, Waylett discloses this limitation.

91. Waylett discloses a communication system that include two Networks in a Box (“NIBs”), 224A and 224B, shown in Figure 11 below.



Ex. 1005, Figure 11.

92. Waylett further explains that the communication system in Figure 11 is “particularly suitable for use in enterprises operating a number of different WLANs 228 or corporate LANS360A, 360B, at a number of different sites.” Ex. 1005, 17:11–14; see also *id.*, 17:7–16. Waylett also states that “[t]he present invention is directed to a communication system and method for providing high capacity voice and high speed data communication between a number of user equipment terminals (UEs) and a public network via a communication system including a community Wireless Local Area Network (WLAN).” Ex. 1005, 6:56–61.

93. Based on the above disclosures, a POSA would have understood that Waylett discloses “*a system.*”

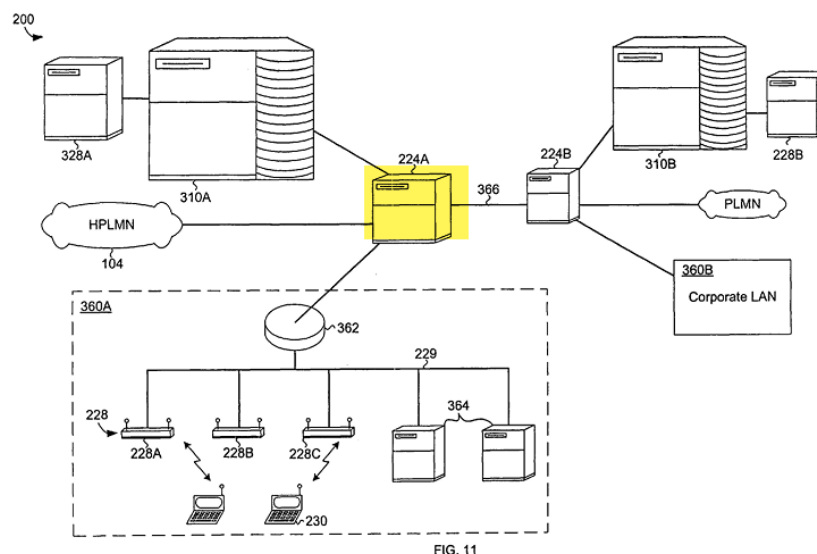
94. For these reasons, a POSA would have understood that Waylett discloses the preamble.

b. A First DMA Server

95. Claim 1 recites “*a first distributed mobile architecture server.*”

96. Waylett discloses this limitation.

97. Figure 11 of Waylett includes a Networks in a Box (“NIBs”), 224A and 224B, shown below:



Ex. 1005, Fig. 11, (annotated). Waylett describes that a Network in a Box, like NIB 224, is a single enclosure that allows a UE to communicate with a private cellular networks:

The communication system 200 further includes a private network 220 with a private cellular network 222 for communicating with private MS 226, a WLAN 228 for communicating with private transceivers or UEs 230, and, optionally, a PBX 232 for communicating with PBX telephones 234. In one embodiment, the private cellular network 222 includes at least one WAVEXchange™ (WXC) or a Network-In-A-Box™ (NIB 224) commercially available from interWAVE Communications Inc., of Menlo Park, Calif. . . . ***The NIB 224 includes a MSC, a BSC and a BTS in a single enclosure. The private cellular network 220 is coupled to***

the GSM network 210, the GPRS network 218, and the 3G-network 214 of the public cellular network 204 through a number or interface functions or links, described in more detail below.

Ex. 1005, 9:32-46 (emphasis added). As shown in the quote above, Waylett's NIB includes a mobile switching center (MSC), base station controller (BSC), and base transceiver station (BTS). *See id.* Waylett's disclosure of an NIB is similar to how the '763 patent describes a DMA server:

The DMA server 106 is essentially a processor, or computer, having a housing and a computer readable medium 200 that is disposed therein. . . . As depicted in FIG. 2, the DMA server 106 can include a mobile switching center (MSC) module 206 and a base station controller (BSC) module 208 embedded within the computer readable medium 200.

Ex. 1001, 4:3-5, 4:14-18. In addition, the '763 patent describes that the DMA server connects a base transceiver station. Ex. 1001, 3:26-33.

98. In addition, Waylett also discloses that the NIB 224 may include a private HLR and private VLR 318. See Ex. 1006, Fig. 6 (showing a VLR, PHLR, and PVLR included in the NIB), Fig. 15 (showing PHLR 316, VLR 318, and VRAD 314 being part of NIB 224), 18:16-64. It is my opinion that the aforementioned description in Waylett likewise mirrors how the '414 patent describes a

“DMA system” Ex. 1001, Fig. 2, 4:1-5:49. Accordingly, Waylett’s NIB satisfies the claimed “[a] *distributed mobile architecture (DMA) system*.”

99. Based on the above disclosures, a POSA would have recognized that each NIB is a “*distributed mobile architecture server (“DMA”) server*.” Such a person would have recognized that the NIB 224A in Figure 11 satisfies the “*first distributed mobile architecture server*” in the system.

100. For these reasons, a POSA would have understood that Waylett discloses this limitation.

c. A First Computer Readable Medium

101. Claim 1 recites “*a first computer readable medium*” and that it is comprised by the first distributed mobile architecture server.

102. Waylett discloses this limitation.

103. Waylett discloses that each NIB (“*distributed mobile architecture server*”) includes a “*computer readable medium*.” Specifically, Waylett describes that a Network-In-A-Box contains a single enclosure that includes a mobile switching center, base station controller, and base station transceiver:

The NIB 224 includes a MSC, a BSC and a BTS in a single enclosure. The private cellular network 220 is coupled to the GSM network 210, the GPRS network 218, and the 3G-network 214 of the public cellular network 204 through a number of interface functions or links, described in more detail below.

Ex. 1005, 9:32-46.

104. Based on the above implementation, a POSA would have recognized that, to implement such functionality, the NIB 224 (“*distributed mobile architecture server*”) must necessarily include a computer readable medium. Waylett, for example, describes a NIB 224 as commercially available system called an interWAVE Communications’ Network-In-A-Box™ (NIB 224). This system implements its components (*e.g.*, MSC, BSC, RADIUS server, HLR, VLR, etc.) using software stored on a computer readable medium. *See* Ex. 1010 (“[interWAVE] has pioneered a product suite that provides all of the infrastructure equipment and software necessary to support an entire wireless network within a single compact system [referring to its Network-In-A-Box].”). Accordingly, Waylett discloses this limitation.

105. To the extent that Patent Owner disagrees, implementing Waylett’s NIB components (*e.g.*, MSC, BSC, RADIUS server, HLR, VLR, etc.) on a computer readable medium would have been obvious for four reasons.

106. First, such an implementation was an obvious variation of implementing known components in the prior art. At that time, software implementation was a well-known way to implement network functions, such as those performed by Waylett’s NIB components. Each NIB component—such as the MSC, BSC, HLR, VLR—had well-known functionality defined by

communications standards. Based on these standards, a POSA would have recognized that these components were known in the prior art. Such a person would have understood that implementing these components using software would be obvious variation of implementing well-known components.

107. Second, implementing Waylett's NIB components on a computer readable medium would have been the application of a known technique—that is, programming these components in software—resulting in improvements typical to all software. Implementing in software, for example, allows a user to fix problems with software over a network rather than dispatching an employee to location to fix hardware. Such an implementation would not have been beyond the skill of a POSA. Stated otherwise, a POSA would have known how to implement Waylett's NIB components in software.

108. Third, a POSA would have been motivated to implement Waylett's NIB components in a computer readable medium for other reasons. Such a person would do so to make manufacturing NIBs cost-effective because one would replicate the software in each NIB as opposed to designing a new hardware component.

109. Fourth, a POSA would have been motivated to implement Waylett's NIB components in a computer readable medium to allow for easy implementation of system-wide updates. Such a person would have recognized that software

updates can be sent over the internet, rather than having to update the hardware in each NIB.

110. For these reasons, a POSA would have understood that Waylett discloses this limitation or renders it obvious.

d. A First MSC

111. The '763 Patent's Claim 1 continues by reciting "*a first mobile switching center module embedded in the first computer readable medium*" and that it is comprised by the first distributed mobile architecture server.

112. Waylett discloses this limitation.

113. Waylett discloses that each NIB ("*distributed mobile architecture server*") includes a "*computer readable medium*" that includes a "*mobile switching center module*." Specifically, Waylett describes that a network in a box (NIB) contains a single enclosure that includes a mobile switching center. Ex. 1005, 9:41-42 ("The NIB 224 includes a **MSC**, a BSC and a BTS in a single enclosure."); Ex. 1005, 7:59 (stating that MSC stands for mobile switching center). As I explained above, such functionality necessarily requires implementation on a computer readable medium. To the extent that Patent Owner disagrees, and as I explained above, such an implementation on a computer readable medium would have been obvious for the reasons I explained above, *see* § V.B.1.c. Because this

module is located in the computer readable medium in the first NIB, it would be a “*first*” MSC located in “*the first computer readable medium.*”

114. For these reasons, a POSA would have understood that Waylett discloses this limitation.

e. A First BSC

115. The ’763 Patent’s Claim 1 continues by reciting “*a first base station controller module embedded in the first computer readable medium*” and that it is comprised by the first distributed mobile architecture server.

116. Waylett discloses this limitation.

117. Waylett discloses that each NIB (“*distributed mobile architecture server*”) includes a “*computer readable medium*” that includes a “*base station controller module.*” Specifically, Waylett describes that a network in a box (NIB) contains a single enclosure that includes a base station controller module. Ex. 1005, 9:41-42 (“The NIB 224 includes a MSC, **a BSC** and a BTS in a single enclosure.”); Ex. 1005, 7:58 (stating BSC stands for base station controller). As I explained above, such functionality necessarily requires implementation on a computer readable medium. To the extent that Patent Owner disagrees, and as I also explained above, such an implementation on a computer readable medium would have been obvious for the reasons I explained above, *see* § V.B.1.c.

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Because this module is located in the computer readable medium in the first NIB, it would be a “*first*” BSC located in “*the first computer readable medium.*”

118. For these reasons, a POSA would have understood that Waylett discloses this limitation.

f. A CDR Generation Program

119. Claim 1 recites “*a first call detail record (CDR) generation program embedded in the first computer readable medium*” and that it is comprised by the first distributed mobile architecture server.

120. Waylett discloses this limitation.

121. Waylett discloses that NIB 224 (“*distributed mobile architecture server*”) also include a radius server, which generates call detail records (CDRs). Specifically, Waylett discloses “the RADIUS server 312 receives accounting packets or call detail records (CDRs) ... and forwards these accounting packets to a billing server ... to bill telecommunications charges to the appropriate parties.” Ex. 1005, 14:16-22. Figure 6 shows that the RADIUS server is part of a NIB. *See* Ex. 1005, Fig. 6, RADIUS Server 312. Based on these disclosures, a POSA would have understood that the RADIUS server 312 located in each NIB, along with its call detail records, is a “*a call detail record (CDR) generation program embedded within the computer readable storage medium.*” To the extent that Patent Owner disagrees, and as I explained above, such an implementation on a

computer readable medium would have been obvious for the reasons I explained above, *see* § V.B.1.c. Because the RADIUS server is included in the computer readable medium in the first NIB, it would be a “*first*” CDR generation program located in “*the first computer readable medium.*”

122. For these reasons, a POSA would have understood that Waylett discloses this limitation.

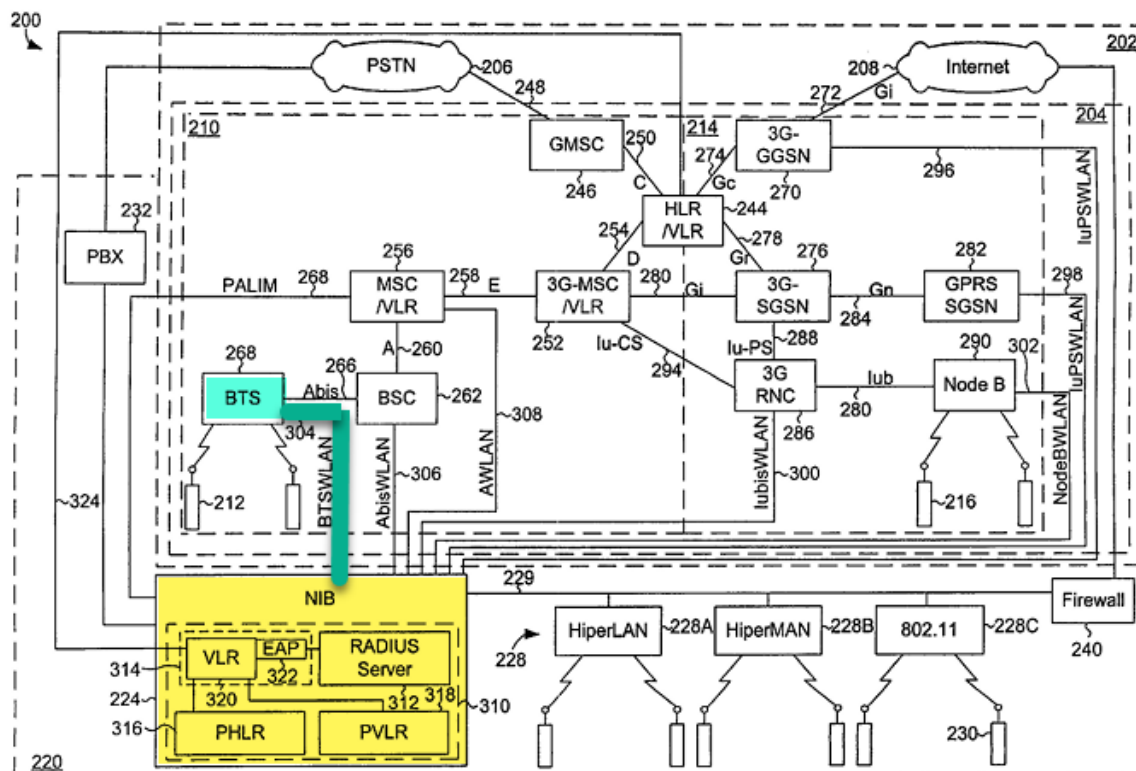
g. A First Wireless Transceiver

123. Claim 1 recites “*wherein the first distributed mobile architecture server is in direct physical connection with a first wireless transceiver*” and further requires that it is comprised by the first distributed mobile architecture server.

124. Waylett discloses this limitation.

125. Specifically, Waylett states that NIB 224 (“*distributed mobile architecture server*”) “includes a MSC, a BSC and a BTS in a single enclosure.” Ex. 1005, 9:41–42. A POSA would have understood that a “BTS” mentioned in this sentence refers to a “base station transceiver,” which is a “*wireless transceiver.*” *See* Ex. 1005, Abstract (showing acronym for “CBTS” is “centralized base transceiver station”). Such a person would further understand that the BTS in NIB 224 is used to receive calls from UEs—that is, making it “*in direct physical connection with a first wireless transceiver.*” Ex. 1005, 9:37-46 (describing “the private cellular network 222 includes ... a Network-In-A-Box™

(NIB 224) [that] includes ... a [base transceiver station] BTS” and further that “[t]he private cellular network 220 is coupled to the GSM network 210, the GPRS network 218, and the 3G-network 214 of the public cellular network 204 through a number of interface functions or links”). Based on these disclosures, a POSA would have understood that Waylett’s NIB is “*in direct physical connection*” with a BTS because Waylett’s NIB includes a BTS.



Ex. 1005, Fig. 6 (annotated), 13:49-55. Based on these disclosures, a POSA would have understood that Waylett's NIB 224 is also "*in direct physical connection*" with a BTS located outside the NIB.

127. Either of these implementations show that Waylett teaches this limitation. For these reasons, a POSA would have understood that Waylett discloses this limitation.

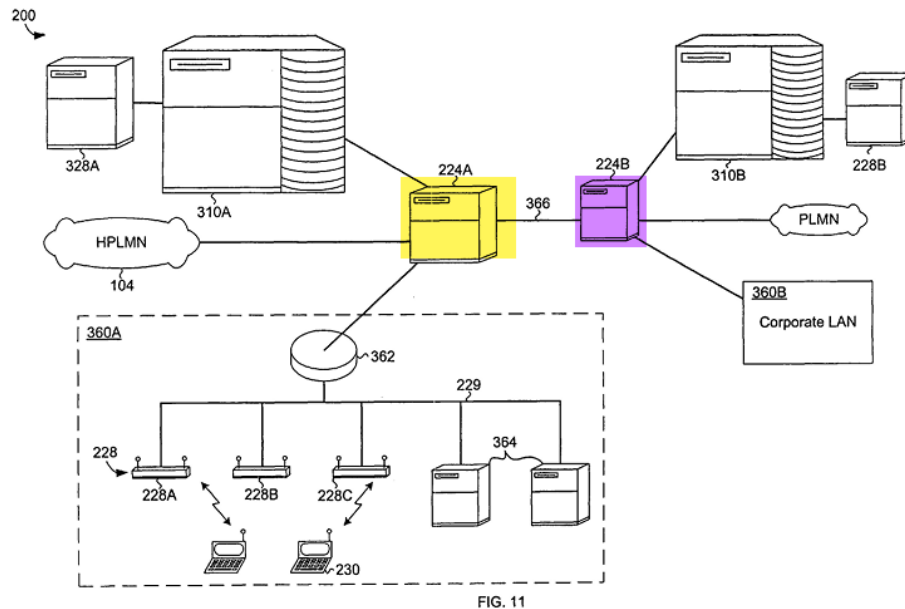
h. A Second DMA Server

128. Claim 1 recites "*a second distributed mobile architecture server, comprising.*"

129. Waylett discloses this limitation.

130. Figure 11 of Waylett includes multiple NIBs, 224A and 224B. Waylett explains that multiple NIBs are "particularly suitable for use in enterprises operating a number of different WLANs 228 or corporate LANs 360A, 360B, at a number of different sites. For example, a chain of hotels, recreational parks or business centers owned and/or operated by a single enterprise." Ex. 1005, 17:12-16. As I explained above, *see* § V.B.1.b, a POSA would have recognized that each NIB is a "*distributed mobile architecture server ("DMA") server.*" Such a person would have also recognized that each NIB would have the same structural arrangement, components, and functionality. Annotated Figure 11 below shows

that the NIB 224B satisfies the “*second distributed mobile architecture server*” in the system:



Ex. 1005, Fig. 11 (annotated). As shown above, the second NIB 224B satisfies a “*second distributed mobile architecture server*” (shown in purple) and the first NIB 224A satisfies a “*first distributed mobile architecture server*” (shown in yellow).

131. For these reasons, a POSA would have understood that Waylett discloses this limitation.

i. A Second Computer Readable Medium

132. Claim 1 recites “*a second computer readable medium,*” and requires that it is comprised within the second distributed mobile architecture server.

133. Waylett discloses this limitation.

134. As I explained above, Waylett’s NIBs (“*distributed mobile architecture server*”) include a computer readable medium. *See* § V.B.1.c. To the extent Patent Owner argues otherwise, it would have been obvious for the same reasons above, *see* § V.B.1.c. Because this computer readable medium would be located in the second NIB, this computer readable medium would be a “*second computer readable medium.*”

135. For these reasons, a POSA would have understood that Waylett discloses this limitation and/or renders it obvious.

j. A Second MSC

136. Claim 1 recites “*a second mobile switching center module embedded in the second computer readable medium*” and requires that it is comprised within the second distributed mobile architecture server.

137. Waylett discloses this limitation for the same reasons described above, *see* § V.B.1.d. Because this module would be located in the second NIB (a “*second distributed mobile architecture server*”), this would be the “*second*” MSC located in the “*second computer readable medium.*”

138. For these reason, a POSA would have understood that Waylett discloses this limitation.

k. A Second BSC

139. Claim 1 recites “*a second base station controller module embedded in the second computer readable medium*” and requires that it is comprised within the second distributed mobile architecture server.

140. Waylett discloses this limitation for the same reasons described above, *see* § V.B.1.e. Because this module would be located in the second NIB (a “*second distributed mobile architecture server*”), this would be the “*second*” BSC located in the “*second computer readable medium*.”

141. For these reasons, a POSA would have understood that Waylett discloses this limitation.

l. A Second Call Detail Record Generation Program

142. Claim 1 recites “*a second call detail record (CDR) generation program embedded in the second computer readable medium*” and requires that it is comprised within the second distributed mobile architecture server.

143. Waylett discloses this limitation for the same reasons described above, *see* § V.B.1.f. Because this module would be located in the second NIB (a “*second distributed mobile architecture server*”), this would be the “*second*” CDR located in the “*second computer readable medium*.”

144. For these reasons, a POSA would have understood that Waylett discloses this limitation.

m. A Group Call Program

145. Claim 1 recites “*a program to allow a group call among four or more mobile communication devices, wherein the program is embedded in the second computer readable medium*” and requires that it is comprised within the second distributed mobile architecture server.

146. Waylett discloses this limitation.

147. Waylett discloses that the UE can use supplementary services, which include “Voice Group Call Service.” Ex. 1005, 4:38–53. A POSA would have recognized that these services would include hosting a group call across multiple mobile devices. Such a person would have recognized that, to provide such services, the NIB 224 (“*distributed mobile architecture server*”) would necessarily need to include a program to allow for such services. Consequently, NIB 224 includes “*a program to allow a group call among four or more mobile communication devices*” in its computer readable medium.

148. Although there is no size of a group mentioned in Waylett, a POSA would have recognized that a group call services, like those mentioned in Waylett (“Voice Group Call Service,” Ex. 1005, 4:4, 11:11), allow for a call among four or more mobile communication devices. This understanding is consistent with the GSM standards defining Voice Group Call Services. Ex. 1009, 10, *see id.*, 6–9, 11–14. For example, the ETSI standard for GSM defining “Voice Group Call

Service (VGCS),” ETSI TS 100 925V8.1.0, was published in November 2000. Ex. 1019, 1. That standard illustrates that a group call services allow for calls among different size groups, including those exceeding three participants:

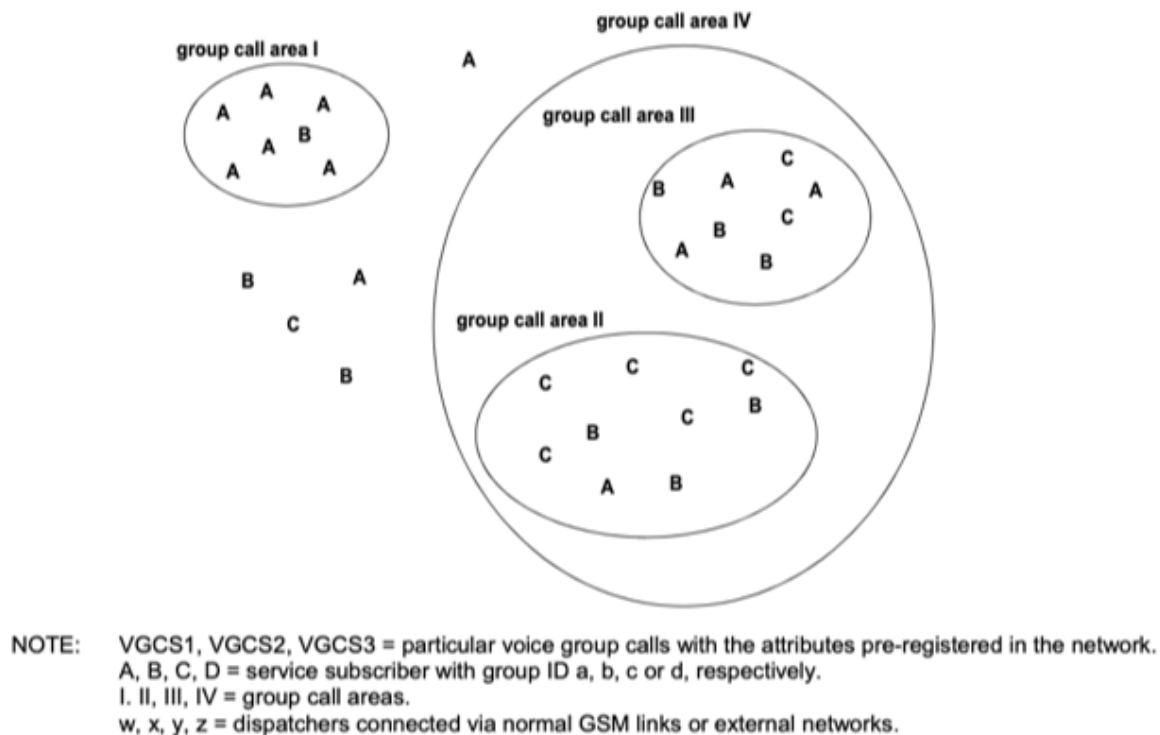


Figure 1: Logical concept of the VGCS

Ex. 1009, 10. For example, with respect to the above figure, ‘service subscribers’ participating in the group call having “Group ID a” were depicted by the capital letter “A,” and included up to 12 subscribers in a particular group call. A POSA would have thus understood Waylett’s reference to “voice group call services,” *see* Ex. 1005, 4:38-53, to refer to “*group call[s] among four or more mobile communication devices.*”

149. For these reasons, a POSA would have understood that Waylett discloses this limitation.

n. A Second Wireless Transceiver

150. Claim 1 recites “wherein the second distributed mobile architecture server is in direct physical connection with a second wireless transceiver.”

151. Waylett discloses this limitation for the same reasons described above, *see* § V.B.1.g. Because this base station transceiver would be located in the second NIB (a “*second distributed mobile architecture server*”), this would be the “*second*” wireless transceiver in “*direct physical connection with the second distribute mobile architecture server.*” *See* § V.B.1.g.

o. Peer-to-peer connection for telephony traffic.

152. Claim 1 recites “*wherein telephony traffic received at the first wireless transceiver of the first distributed mobile architecture server is transmitted from the first distributed mobile architecture server to the second distributed mobile architecture server via a peer-to-peer connection.*”

153. As I explain below, Waylett in view of Cope would have rendered a “peer-to-peer connection” between Waylett’s NIBs obvious.

i. Waylett discloses a connection for telephony traffic

154. Waylett discloses this limitation besides for a “peer-to-peer connection.” Waylett discloses that its NIBs send telephony traffic to each other.

See Ex. 1005 at 9:48-64. For example, Waylett's NIBs enable voice and data communications between UEs, both inside and outside the private network:

[T]he WLAN 228 is coupled to the public network 202 ***through the NIB 224 and is adapted to enable voice and data communication*** between the private UEs 230 and the private mobile stations 226, public mobile stations 212, public UEs 216, PBX telephones 234, and telephones (not shown) coupled to the PSTN 206 and/or the Internet 208. . . . One advantage of the communication system 200 of the present invention is the ability to enable communication between the public network 202 and less expensive, low-power, unregulated private UEs 230 while providing substantially the same functions and services available from much more expensive radios, MSs 212 or UEs 216 of the public cellular network 204 and/or private cellular network 222.

Ex. 1005 at 9:48-64 (emphasis added); *see id.*, 3:8-16, 4:11-28.

155. Further, with reference to Figure 11, Waylett discloses “NIBs 224A, 224B, linked by a PWAN 366.” Ex. 1005, 17:10-11; *see also* Ex. 1005, 9:67-10:1 (showing acronym for “PWAN” is “private wide area network”).

156. As the above disclosures show, a POSA would have recognized that UEs would transmit voice traffic—one type of “*telephony traffic*”—to a wireless transceiver of a NIB. When there are multiple NIBs, such as those in Waylett's Figure 11, a POSA would have understood how a UE connected to a first NIB

would call and/or communicate data to a second UE connected to a second NIB.

See Ex. 1005, 9:48-64; *id.*, 9:65-10:7 (“It will be understood, that the communication system 200 can include a number of private cellular networks 222, each with an associated WLAN 228, and each linked by a private wide area network (PWAN) (not shown) to provide wireless or cellular type communication via a WLAN over an extended service area. This embodiment provides the further advantages of the ability to avoid tolls and maintain ownership and control of information transmitted between different sites of an enterprise linked by the PWAN.”). As part of this process, the NIBs would establish a connection to provide the call and/or data communications between each NIB. Ex. 1005, Fig. 11, 9:48-10:7, 17:7-16. In doing so, a POSA would have recognized that a call from a first UE located in a network with a first NIB to another UE located in a network with another NIB will necessarily include the following steps:

- a UE call received by the first wireless transceiver of the first NIB, *see* Ex. 1005, 3:8-16, 9:48-64, and
- a call being relayed from the first NIB to the second NIB, Ex. 1005, Fig. 11, 9:48-10:7, 17:7-16, and
- the second NIB further relaying that call to its wireless transceiver to send to the second UE, *see* Ex. 1005, 4:11-28, 9:48-64.

Based on these disclosures, a POSA would have understood that Waylett discloses “*wherein telephony traffic received at the first wireless transceiver of the first distributed mobile architecture server is transmitted from the first distributed mobile architecture server to the second distributed mobile architecture server.*”

157. Waylett does not disclose that such a transmission of telephony traffic occurs over a “peer-to-peer connection.” Cope, as I explain below, renders a P2P connection obvious.

ii. Cope discloses a peer-to-peer connection.

158. Cope discloses a “*peer-to-peer connection*” (referred to as a “P2P connection”). Cope, for example, discloses that two different service providers exchange telephony traffic using a peer-to-peer connection, shown in Figure 4 below.

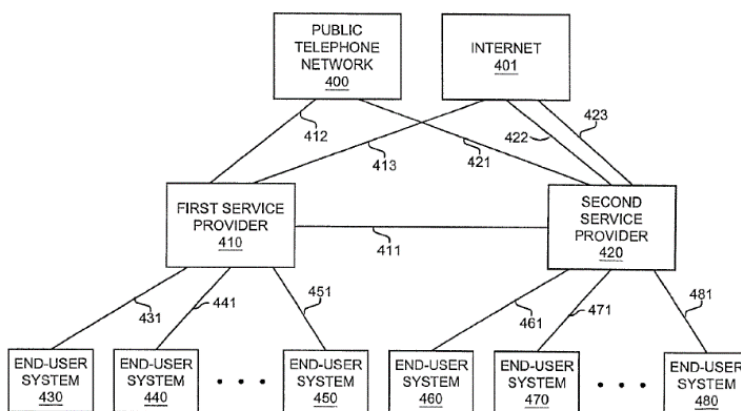


FIG. 4

Ex. 1006, Fig. 4, 3:56-4:3; 6:28-40.

159. Cope further explains that service providers establish a peer-to-peer connection to each other using their routers:

FIG. 5 illustrates second service provider 420 in the prior art. Second service provider 420 includes router 512, packet telephony network 513, and service portal 514. Router 512 is coupled to peer-to-peer IP connection 411 to first service provider 410.

Ex. 1006, 6:28-32.

160. Accordingly, a POSA would have recognized that Cope discloses a “peer-to-peer connection” between different service providers that relays “telephony traffic.”

161. For the above reasons, a POSA would have understood that Waylett in view of Cope discloses this limitation.

iii. A POSA Would Have Found It Obvious to Include Cope’s P2P Connection in Waylett’s Communication System

162. A POSA would have considered the systems described in Waylett in conjunction with those described in Cope, as both concern analogous art. Both belong to the same field of endeavor—that is, telecommunication over wireless networks. Ex. 1005, 1:8–10; Ex. 1006, 1:22–26; Ex. 1001, 1:7–50. Likewise, both Cope and Waylett are pertinent to the problem being solved by the inventor of the ’763 patent: “there exists a need for an improved communications system that is

relatively inexpensive to deploy and relatively inexpensive to operate.” Ex. 1001, 1:48–50; Ex. 1005, 1:32-69; Ex. 1006, 3:24-53.

163. A POSA would have been motivated to incorporate Cope’s P2P connections in the system of Waylett for three reasons.

164. First, Cope provides two express reasons to modify Waylett to include a P2P connection. Specifically, Cope explains that P2P connections “dramatically expands end-user choice and stimulates meaningful competition at the service level,” as well as “numerous other advantages.” Ex. 1006, 3:65-4:3. In addition, Cope also explains that peer-to-peer connections allow for “far more efficient” routing of IP traffic through an internet gateway and over the internet to other service providers. Ex. 1006, 3:17-20, *see id.*, 3:4-20. A POSA would have been motivated by either of these express reasons found in Cope to use a P2P connection in Waylett’s system.

165. Second, both Waylett and Cope focus on helping expand networks to remote areas. For example, Waylett explains that “there is a need for an inexpensive communication system and method of operating the same, that are capable of providing voice and high speed data communication to users in communities hitherto un-served or under served by conventional communication systems.” Ex. 1005, 3:3-7. Cope explains how peer-to-peer IP connections provide a solution to this need: “[f]or a service provider with many existing peer-

to-peer IP connections, the technology greatly expands potential service coverage areas—even to end-users in remote areas.” Ex. 1006, 4:6-9. Based on these disclosures, a POSA would be motivated to implement a peer-to-peer IP connection, as described by Cope, between Waylett’s NIBs to further Waylett’s express goal of providing voice and high-speed data communication to users in unserved or under-served communities.

166. Third, a POSA would have recognized that P2P connections were well-known at the time. Cope, in as early as 2001, describes that Peer to Peer IP connections were known and conventional. Ex. 1006, 2:35–3:21 (describing “Peer-to-Peer IP connections in the Prior Art”). A POSA would have recognized that using peer-to-peer connections for Waylett’s telephony traffic was nothing more than the simple substitution of one known element (i.e., a peer-to-peer IP connection) for another (i.e., the connection between NIBs in Waylett’s Figure 11). Stated otherwise, such a person would have recognized that a P2P connection would be easily substituted for whatever connection was between Waylett’s NIBs in Figure 11. A POSA would also have understood how to implement such a substitution.

167. For any of these reasons, a POSA would have found it obvious to connect Waylett’s NIB using Cope’s P2P connections.

2. Claims 4 and 6

168. Claim 4 depends on Claim 1 and further recites “*wherein the first distributed mobile architecture server further comprises a first home location register embedded in the first computer readable medium and a first visitor location register embedded in the first computer readable medium.*” Likewise, Claim 6 depends on claim 1 and further recites “*the second distributed mobile architecture server*” has the same requirements.

169. As I explain below, Waylett discloses this limitation as each of its two NIBs both include the claimed “*home location register*” and “*visitor location register embedded in the first computer readable medium.*”

a. Home Location Register

170. Waylett discloses that each NIB 224 includes “*a first home location register embedded in the first computer readable medium.*”

171. Figure 6 of Waylett discloses that the RADIUS system 310 of an NIB includes a private home location registry (“PHLR”):

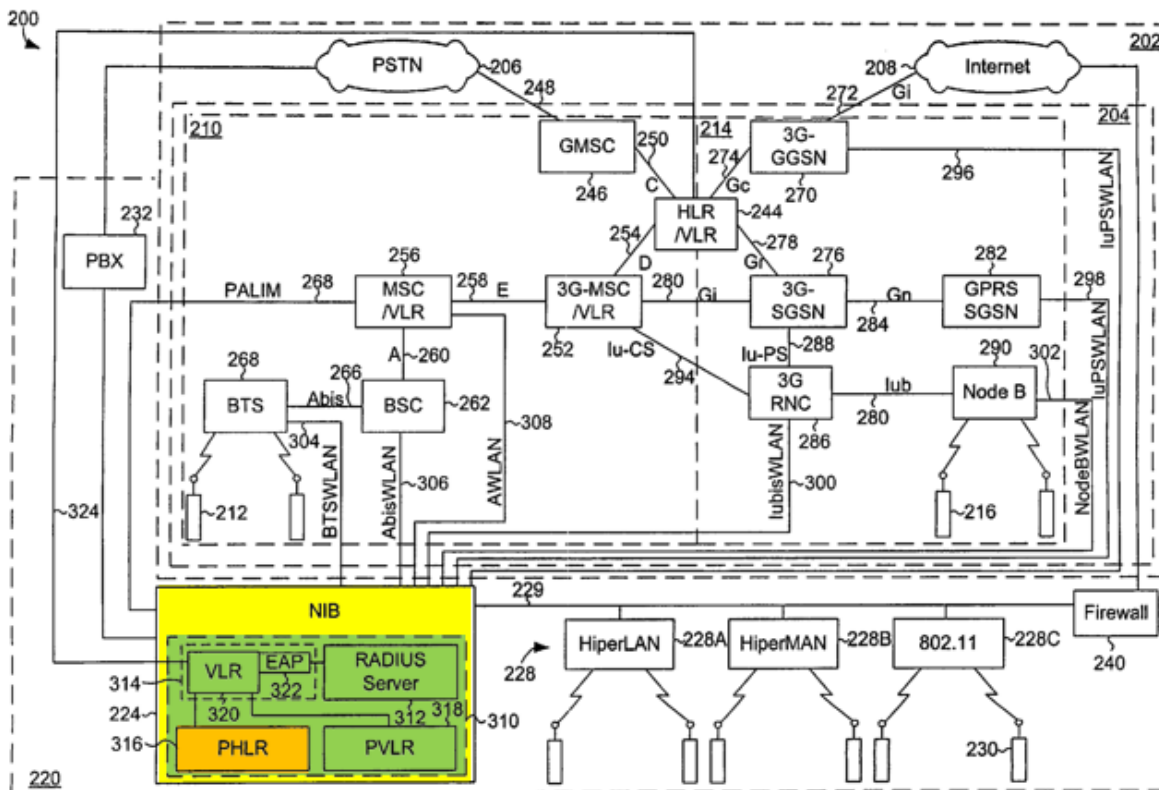


FIG. 6

Ex. 1005, Fig. 6 (annotated).

172. Waylett further discloses that “[t]he private HLR 316 is [sic] stores information on UEs 230 registered or subscribing to the communication system 200, and more particularly to the WLAN 228 and/or the private cellular network 222.” Ex. 1005, 14:32-35. Accordingly, a POSA would have recognized that Waylett’s private HLR is “*a first home location register embedded in the first computer readable medium.*”

173. For the above reasons, a POSA would have understood that Waylett discloses this limitation.

b. Visitor Location Register

174. Waylett discloses that each NIB 224 includes “a first visitor location register embedded in the first computer readable medium.”

175. Figure 6 of Waylett likewise discloses that the same RADIUS system 310 includes a private home visitor location registry (“PVLR”):

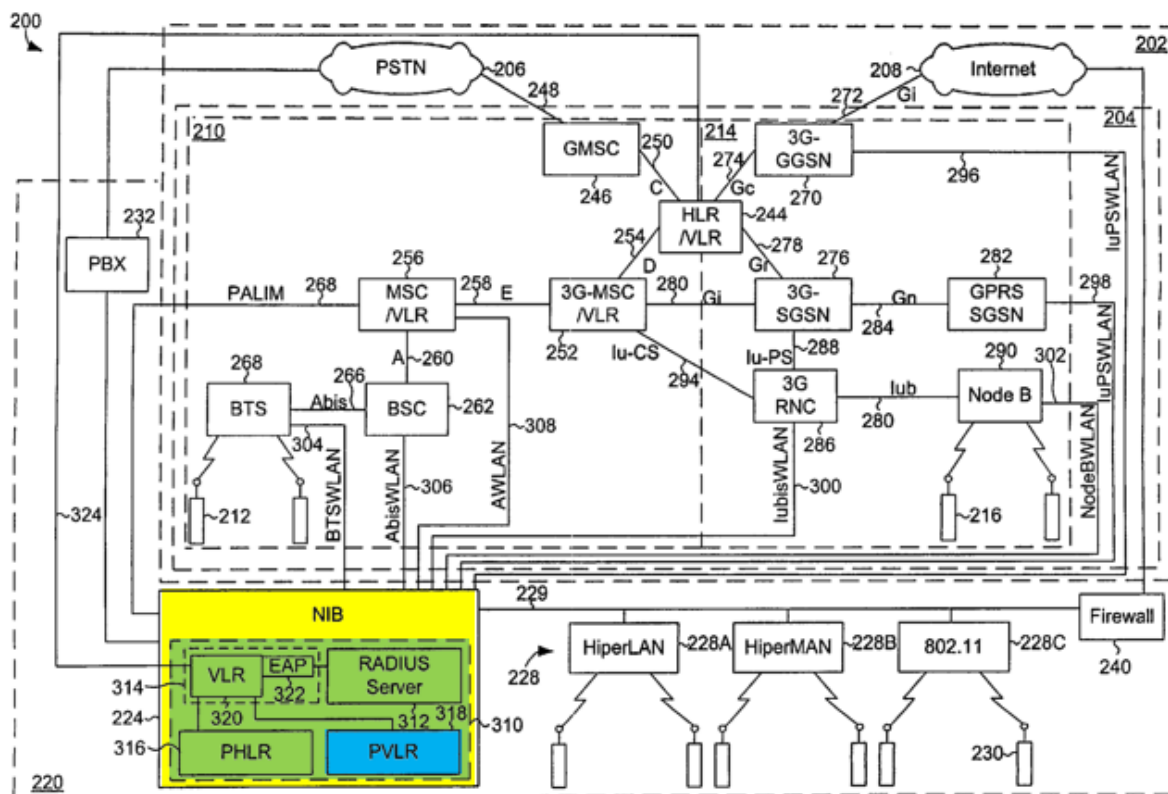


FIG. 6

Ex. 1005, Fig. 6 (annotated). Waylett further discloses that “[t]he private VLR 318 is capable of temporarily storing information on subscribers or UEs 230 considered as roaming within the service area of the WLAN 228.” Ex. 1005, 14:35-38. Alternatively, Waylett discloses a VLR 320 in the NIB. Ex. 1005, Fig. 6, VLR 320, 14:38-48. Based on these disclosures, a POSA would have recognized that either

Waylett's private VLR 318 or VLR 320 satisfies "*a visitor location register embedded in the first computer readable medium.*"

176. For the above reasons, a POSA would have understood that Waylett discloses this limitation.

3. Claim 9

177. Claim 9 depends on Claim 1 and further recites: "*wherein the first distributed mobile architecture server includes administrative information corresponding to one or more wireless telephone device subscribers.*"

178. Waylett discloses this limitation.

179. Figure 6 of Waylett discloses a RADIUS system 310 includes a RADIUS Server 312:

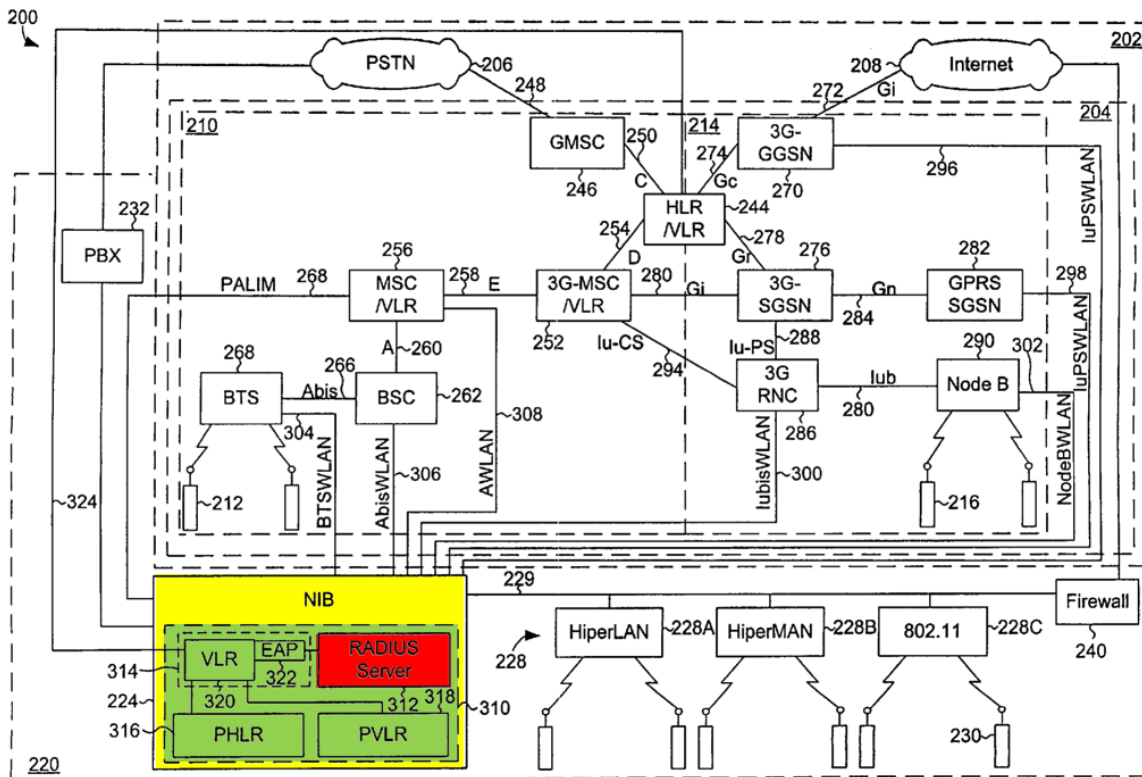


FIG. 6

Ex. 1005, Fig. 6 (annotated).

180. When Waylett's system includes a "distributed public" or "private HLR," *id.* 14:62-64, Waylett discloses that the RADIUS server 312 "routes an interpretation of either a username or a user identity provided in the authentication procedure, to the appropriate public or private HLR." *Id.* 14:64-66. To do so, Waylett discloses that RADIUS server 312 uses a "configuration table that matches the [International Mobile Subscriber Identity] ranges with the appropriate or controlling public or private HLR." Ex. 1005, 15:6-8. Stated otherwise, a POSA would have understood that Waylett's RADIUS server 312 uses a table of subscriber identities send user information to the appropriate HLR during the

authentication procedure. Consequently, Waylett's configuration tables necessarily include "*administrative information corresponding to one or more wireless telephone device subscribers.*"

181. Alternatively, Waylett also discloses "a memory system ... coupled to the NIB 224" for storing subscriber identification and security information. Ex. 1005, 10:45-48. Based on this disclosure, a POSA would have recognized that Waylett's subscriber identification and security information is "*administrative information corresponding to one or more wireless telephone device subscribers.*"

182. For the above reasons, a POSA would have understood that Waylett discloses this limitation.

4. Claim 15

183. Claim 15 depends on Claim 12 and further recites: "*wherein the first base station controller module embedded in the first computer readable medium of the first distributed mobile architecture server comprises a first cellular radio network controller.*"

184. Waylett renders this limitation obvious.

185. Waylett discloses that NIB 224 connects to an external 3G RNC 286 ("*first cellular radio network controller*");

66

186. A POSA would have been motivated to modify Waylett's NIB to further include a "*radio network controller*" for two reasons. First, such a person would have been motivated to do so for express reason described in Waylett. Waylett's NIB is an "inexpensive communication system" that is "capable of providing voice and high-speed data communication to users in communities hitherto un-served or under served by conventional communication systems." Ex. 1005, 2:3-7. Waylett's NIB already includes most of the necessary modules needed to for communicating over 3G networks. Ex. 1005, Figure 5. Part of these communication systems would also include a "radio network controller," as shown above. A POSA would have recognized that, by including the radio network controller module in Waylett's NIB, the resulting cost to the customer would be reduced because they would no longer need to purchase a 3G-RNC 266.

187. Second, Waylett also discloses there is a "need for a communication system and method of operating the same that can be quickly and inexpensively scaled up to provide service to increasing numbers of users." Ex. 1005, 2:8-11. A POSA would have recognized that, by including the "radio network controller" in Waylett's NIB 224, that radio network controller would be able to control other NIBs thereby allowing for additional expansion of a network. This modification would allow for additional expansion of a network where a single NIB controls all newly added NIBs. A POSA would have benefited by having a single NIB control

the network because all network configuration can be performed in a single location—rather than at multiple locations.

188. For any of these reasons, a POSA would have been motivated to include radio network controller in Waylett’s NIB 224. As I explained above, *see* §§ V.B.1.c–V.B.1.e, Waylett discloses that each NIB includes a “*computer readable medium*” that includes a “*base station controller module*.” Because the base station controller communicates with the radio network controller, such a person would have recognized that both components could be included in the same module.

189. For the above reasons, a POSA would have understood that Waylett renders this limitation obvious.

C. No Secondary Considerations Exist

190. No secondary indicia of non-obviousness exist. However, I reserve the right to supplement my opinions Patent Owner alleges or offers any purported evidence of objective indicia of non-obviousness.

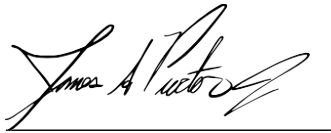
191. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine

Decl. iso Petition for IPR re U.S. Patent No. 7,548,763

or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed this 14th day of February, 2023.

Respectfully submitted,

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

James A. Proctor, Jr.

Appendix A: Table of Challenged Claims of the '763 Patent

Claim Element	Claim Language
1.a	1. A system, comprising:
1.b	a first distributed mobile architecture server comprising:
1.c	a first computer readable medium;
1.d	a first mobile switching center module embedded in the first computer readable medium;
1.e	a first base station controller module embedded in the first computer readable medium; and
1.f	a first call detail record (CDR) generation program embedded in the first computer readable medium,
1.g	wherein the first distributed mobile architecture server is in direct physical connection with a first wireless transceiver; and
1.h	a second distributed mobile architecture server, comprising:
1.i	a second computer readable medium;
1.j	a second mobile switching center module embedded in the second computer readable medium;
1.k	a second base station controller module embedded in the second computer readable medium;
1.l	a second call detail record (CDR) generation program embedded in the second computer readable medium; and
1.m	a program to allow a group call among four or more mobile communication devices, wherein the program is embedded in the second computer readable medium,
1.n	wherein the second distributed mobile architecture server is in direct physical connection with a second wireless transceiver;
1.o	wherein telephony traffic received at the first wireless transceiver of the first distributed mobile architecture server is transmitted from the first distributed mobile architecture server to the second distributed mobile architecture server via a peer-to-peer connection.
4.a	The system of claim 1, wherein the first distributed mobile architecture server further comprises:
4.b	a first home location register embedded in the first computer readable medium; and
4.c	a first visitor location register embedded in the first computer readable medium.
6.a	The system of claim 1, wherein the second distributed mobile architecture server further comprises:
6.b	a second home location register embedded in the second computer readable medium; and
6.c	a second visitor location register embedded in the second computer readable medium.
9	The system of claim 1, wherein the first distributed mobile architecture server includes administrative information corresponding to one or more wireless telephone device subscribers.
15	The system of claim 1, wherein the first base station controller module embedded in the first computer readable medium of the first distributed mobile architecture server comprises a first cellular radio network controller.