

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

METACLUSTER LT, UAB,

Petitioner

v.

BRIGHT DATA LTD.,

Patent Owner

Case IPR2022-00936

Patent No. 11,206,317

DECLARATION OF DR. TIM A. WILLIAMS

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
United States Patent and Trademark Office
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I. INTRODUCTION

1. I, Dr. Tim A. Williams, declare as follows:

2. My full name is Tim Arthur Williams.

3. I have been retained as an independent expert in this matter by counsel for Patent Owner Bright Data Ltd. (“Bright Data”). I have been asked to provide my opinions on certain references in the above-identified *inter partes* review (“IPR”) proceeding, IPR2022-00936, involving U.S. Patent No. 11,206,317 (“the ’317 Patent”).

4. I reviewed the Petition (Paper 1) and the exhibits submitted with the Petition (EXS. 1001-1022). I have reviewed other exhibits submitted concurrently with this declaration, as cited and discussed herein.

5. I am being paid for my work preparing this declaration at my normal consulting rate plus reimbursement of direct expenses. My compensation is not tied to the outcome of this matter and is not based on the substance of the opinions that I provide.

6. QUALIFICATIONS

7. I am an industry professional with over 45 years of experience in wireless communications, computer networking and telecommunications technology. A copy of my CV is attached as Exhibit A.

8. I am currently active currently active as Chief Executive Officer at Beach Technologies, LLC (Danville, CA) a company related to intellectual property consulting.

9. I am also currently active as a Member at Calumet Venture Management (Madison, WI) a company related to the investment into start-up companies.

10. Beginning in 2004, I was the Founder and Chairman at DoceoTech Inc. (Danville, CA) which provides training for engineers in wireless, computer networking, and telephony technologies.

11. From 2008 to 2010, I was Founder and Board Member of BitRail Networks, Inc (Miami, FL). This company designed and produced computer networking equipment. One market the company served was edge devices for residential and community access.

12. From 2006 to 2015, I was Founder and Board Member of BEEcube, Inc. (Freemont, CA). This company built high speed computing and computer networking equipment. One market the company served was networking equipment for backhaul networks used in 5G cellular networks.

13. From 2004 to 2008, I was Founder and CEO of SiBEAM, Inc. This company designed and produced wireless networking IC and equipment.

14. From 1999 to 2000, I was Interim CEO and Advisory Board Member of Atheros Communications, Inc. (Palo Alto, CA) . This company designed and produced wireless networking IC and equipment.

15. From 1998 to 2000, I was CTO of Picazo Communications, Inc. (San Jose, CA). This company built computer networking equipment to provide VoIP PBX functionality.

16. From 1991 to 1998, I was Co-Founder, CTO, VP Engineering of Wireless Access, Inc. (Santa Clara, CA). This company developed over the air communication protocols for communication between the subscriber device and the network.

17. From 1979 to 1991, I was a Member of the Technical Staff at Motorola, Inc. (Schaumburg, IL and Austin, TX). In IL, I designed protocols for Digital voice communications. In TX, I designed ICs for communications including Telecom, Wireless, Cellular and Computer Networking.

18. I have been engaged in over 200 patent related litigations since 1999. Many of these cases relate to computer networking technologies, including protocols for Internet communications and the architecture of computer networks.

19. I hold degrees from Michigan Technological University (B.S.E.E., 1976) and the University of Texas at Austin (M.S.E.E., 1982 and Ph.D., Electrical Engineering, 1985 and M.B.A., 1991).

20. I am the principal inventor on 28 U.S. Patents all of which relate to communications technologies.

21. I have been a Registered Patent Agent since 2002.

II. LEGAL PRINCIPLES

22. When interpreting a patent, it is my understanding that it is important to view the disclosure and claims of that patent from the level of ordinary skill in that art at the time of the invention. My opinion of the level of ordinary skill in the art is based on my personal experience working and teaching in the technical field of Internet communications, my knowledge of colleagues and others working in that field, my study of the '317 Patent and its file history, and my knowledge of:

- a. The level of education and experience of persons actively working in the field at the time the subject matter at issue was developed;
- b. The types of problems encountered in the art at the time the subject matter was developed;
- c. The relevant prior art patents and publications;
- d. The activities of others working in that field;
- e. The prior art solutions to the problems addressed by the relevant art; and,
- f. The sophistication of the technology at issue in this case.

23. In determining the level of ordinary skill in the art, I have also considered, among other things: (1) the sophistication of the relevant technology; (2) the rapidity with which innovations are made in that field; and (3) the educational level of active workers in that field. I also understand that these factors are not exhaustive and are merely a useful guide to determining the level of ordinary skill in the art.

24. Taking the above factors into account, based on my experience in the art and my study of the Internet communication systems disclosed in the '317 Patent, in my opinion a person of ordinary skill in the art (a "POSA" hereafter) would be an individual who, as of October 8, 2009, the filing date of the shared provisional application, had a Master's Degree or higher in the field of Electrical Engineering, Computer Engineering, or Computer Science or as of that time had a Bachelor's Degree in the same fields and two or more years of experience in Internet communications. I exceeded that level of skill in the relevant time frame.

25. Based on the foregoing, I believe that I am qualified to provide reliable opinions in the technical field of the '317 Patent, including regarding what a POSA would have understood from the specification, drawings, claims, and file histories, as well as from the prior art in the field at the time of the invention (October 8, 2009).

26. When offering opinions about how a POSA would evaluate or understand a particular issue, I have placed myself in the mindset of such a POSA, basing my opinions on the relevant education and skillset of such a POSA.

A. ANTICIPATION

27. It is my understanding that “anticipation” exists only if a single alleged prior art reference discloses each and every limitation of the claim at issue, either expressly or inherently. In other words, every limitation of the claim must appear in a single prior art reference for the reference to anticipate that claim. I also understand that all limitations of the claim must be disclosed in the reference as they are arranged in the claim. I also understand that a requirement of a claim that is missing from a prior art reference may be disclosed inherently if that missing requirement is necessarily present in the prior art. I also understand that to be considered anticipatory, the prior art reference must be enabling and must describe the patentee’s claimed invention with sufficient specificity to have placed it in the possession of a POSA. I also understand that a POSA must be able to at once envisage the claimed invention based on the prior art reference without any need for picking, choosing, and combining various disclosures.

B. OBVIOUSNESS

28. I also understand that a patent may be rendered “obvious” based on an alleged prior art reference or a combination of such references plus what a POSA

would understand based on his or her knowledge and those references. I understand that a patent cannot be properly granted for subject matter that would have been obvious to a POSA at the time of the alleged invention. It is also my understanding that in assessing the obviousness of claimed subject matter a POSA should evaluate obviousness over the prior art from the perspective of one of ordinary skill in the art at the time the invention was made (and not from the perspective of either a layman or a genius in that art).

29. It is my further understanding that the question of obviousness is to be determined based on:

- a. The scope and content of the prior art;
- b. The difference or differences between the subject matter of the claim and the prior art (whereby in assessing the possibility of obviousness one should consider the manner in which a patentee and/or a Court has construed the scope of a claim);
- c. The level of ordinary skill in the art at the time of the alleged invention of the subject matter of the claim; and,
- d. Any relevant objective factors (the “secondary indicia”) indicating non-obviousness as I discuss further below.

30. It is also my understanding that the United States Supreme Court clarified the law of obviousness in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. at 398

and 419 (2007) case (“KSR”), which I have read and incorporate herein by reference. Based on KSR, it is my understanding that to determine whether it would have been obvious to combine known limitations in a manner claimed in a patent, one may consider such things as the interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge of a POSA.

31. It is my further understanding that for a claim to be found invalid as obvious, it must be obvious to a POSA at the relevant time. I also understand that the existence of each and every limitation of the claimed invention in multiple prior art references/systems does not necessarily prove obviousness since most, if not all, inventions rely on building blocks of prior art. Obviousness may be found where, for example, the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

32. It is my further understanding that I should consider whether there was a reason that would have prompted a POSA to combine the known limitations in a way the claimed invention does, taking into account such factors as: (1) whether the claimed invention was merely the predictable result of using prior art limitations according to their known function(s); (2) whether the claimed invention

provides an obvious solution to a known problem in the relevant field; (3) whether the prior art teaches or suggests the desirability of combining limitations claimed in the invention; (4) whether the prior art teaches away from combining limitations in the claimed invention; (5) whether it would have been obvious to try the combinations of limitations, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions; and (6) whether the change resulted more from design incentives or other market forces. I also understand that to render a claim obvious, the cited combination of prior art must provide a reasonable expectation of success for the proposed combination.

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

34. It is my further understanding that although the KSR decision I identified above has led to the elimination of the “teaching, suggestion or motivation” test as the sole test for judging whether the prior art can be combined

for the purposes of an obviousness assertion, the use of “impermissible hindsight” is still inappropriate when making such an assertion. For example, § 2142 of the Manual of Patent Examining Procedure (“MPEP”) includes a specific direction to Patent Examiners that: “[t]he tendency to resort to “hindsight” based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” In my opinion, this direction to Examiners is equally applicable to experts who assert that the general knowledge of a POSA and/or a combination of references invalidates a patent claim through obviousness.

35. I have also been informed that in cases such as the decision *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), the Court of Appeals for the Federal Circuit (the “CAFC”) has stated that, “[c]are must be taken to avoid hindsight reconstruction by using the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.” In my opinion, this is also important because, as the Supreme Court also stated in *KSR* at pp. 418-19, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of

two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.”

36. Additionally, and also relevant to the above caution to avoid hindsight, it is my understanding that it is not enough to find that prior art references could be combined, and that to show obviousness one must prove that a POSA would actually combine the multiple references to arrive at the claimed invention, including showing that a POSA would be motivated to do so. For example, in the case *PersonalWeb Technologies, LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017), the Federal Circuit clarified that “obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” (Emphasis in original.)

37. It is also my understanding that I should consider any objective evidence (sometimes called the “secondary considerations”) that may have existed at the time of the invention and afterwards that may shed light on the non-obviousness of the claims, such as:

- a. Whether the invention was commercially successful as a result of the merits of the claimed invention (rather than the result of design needs or market-pressure advertising or similar activities);
 - b. Whether the invention satisfied a long-felt need;
 - c. Whether others had tried and failed to make the invention;
 - d. Whether others invented the invention at roughly the same time;
 - e. Whether others copied the invention;
 - f. Whether there were changes or related technologies or market needs contemporaneous with the invention;
 - g. Whether the invention achieved unexpected results;
 - h. Whether others in the field praised the invention;
 - i. Whether persons having ordinary skill in the art of the invention expressed surprise or disbelief regarding the invention;
 - j. Whether others sought or obtained rights to the patent from the patent holder; and,
 - k. Whether the inventor proceeded contrary to accepted wisdom in the field.
38. It is my further understanding the Board has designated a precedential decision regarding the proper analysis of secondary considerations in the case of *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, Paper 33 (PTAB Jan. 24,

2020)(designated April 14, 2020)(“Lectrosonics” hereafter). I understand that for secondary considerations of non-obviousness to be accorded substantial weight, the patentee must establish a nexus between the evidence and the merits of the claimed invention. *Id.* at 32. “There is no nexus unless the evidence presented is ‘reasonably commensurate with the scope of the claims.’” *Id.* I understand that a patentee is entitled to a presumption of nexus “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Id.* I understand that “[a] patent claim is not coextensive with a product that includes a ‘critical’ unclaimed feature that is claimed by a different patent and that materially impacts the product’s functionality.” *Id.*

39. I understand that “a finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations.” *Lectrosonics* at 33. “To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* I understand that “there must be a nexus to some aspect of the claim not already in the prior art.” *Id.*

III. BACKGROUND TO THE FIELD OF TECHNOLOGY

40. In my opinion, a POSA would understand that network component devices, such as client devices and web servers, communicating over the Internet are identified by Internet Protocol (“IP”) addresses. A web server, one type of network component, typically stores content that may be identified by a uniform resource locator (“URL”). IP addresses include certain information that can be used to geolocate a network component with a particular IP address.

41. In my opinion, a POSA would understand that an IP packet sent over the Internet to, for example, a web server includes an IP header and payload. The IP header includes a Source IP Address (the IP address of the sending network component) and a Destination IP Address (the IP address of the receiving network component, for example, the IP address of the web server). The payload includes the data being transmitted, such as a request for content stored on the web server.

42. In my opinion, a POSA would understand that, normally, a request for content is sent from a device, such as a client device, to a web server. For example, a customer that is considering buying a product from a store may use the customer’s client device to request content associated with that particular product from the store’s website. That same customer may also request content associated with that same product at a different store’s website. As one example, a customer may request content to see if the product is on sale. Therefore, in my opinion, a

POSA would understand that the IP packet would include the Source IP Address associated with the customer's client device.

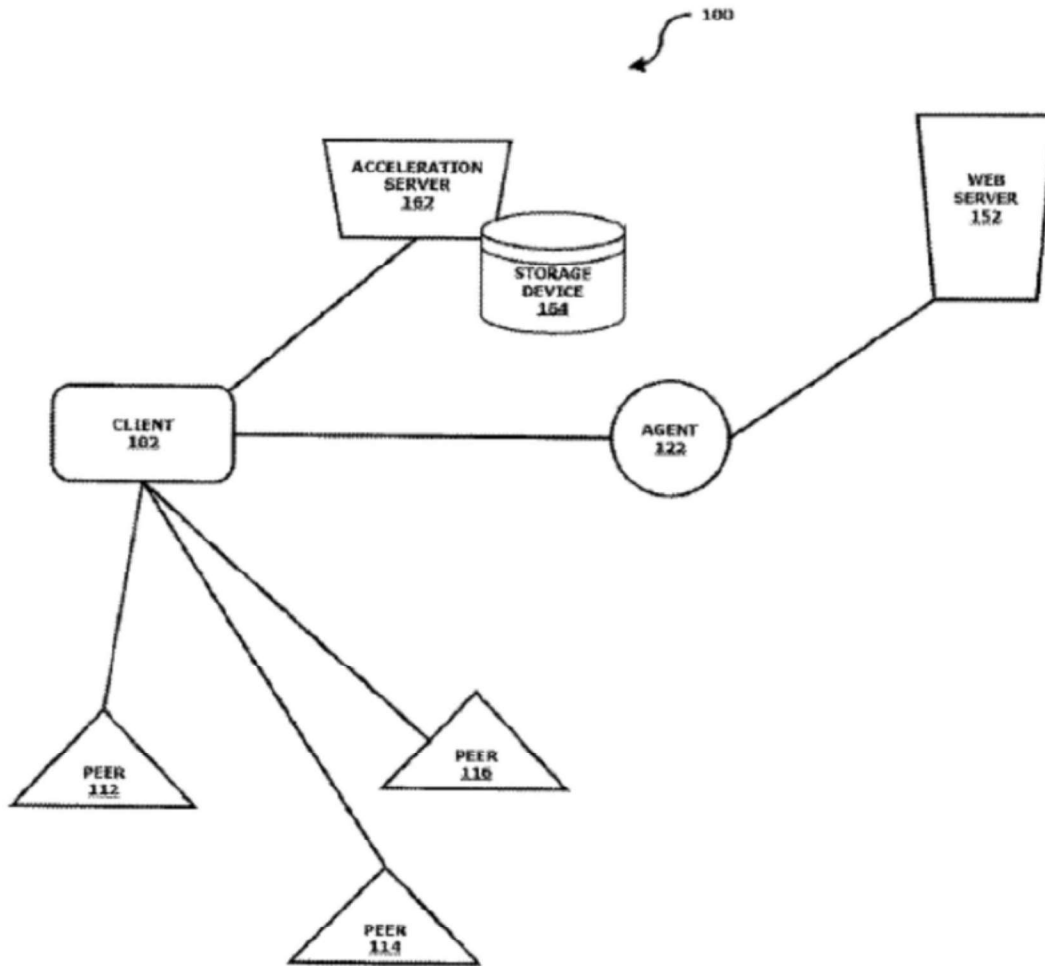
43. In my opinion, a POSA would understand that, normally, the web server responds to a request for content by sending the requested content back to the Source IP Address of the request. However, in some cases, the web server may block or send fake content ("spoof") in response to a request based upon the Source IP address of the request. For example, the web server may determine that the geographic location of the Source IP Address of the request is outside the geographic area in which the web server operates. As another example, the web server may perceive large numbers of requests having the same Source IP Address as suspicious activity possibly associated with a competitor's web scraping.

44. In my opinion, a POSA would understand that, at the time of invention, an additional network component device such as a proxy server may be used as an intermediary between a client device and web server in order to conceal the original Source IP Address for a request for content. See EX. 1001 at Fig. 1. The IP packet will be sent from the original requestor to the proxy server and from the proxy server to the web server. Because an intermediary proxy server is used in sending the request to the web server, the web server receives a request with the Source IP Address identifying the proxy server, not the client device. Consequently, the web server cannot identify the original requestor based upon the

Source IP Address of the request. Instead of being blocked or spoofed, the requested content may be sent back to the original requesting network component via the proxy server.

IV. INTRODUCTION TO THE '317 PATENT

45. The specification of the '317 Patent provides several exemplary embodiments in the detailed description and the figures showing that both servers and client devices can be configured to operate as intermediaries. *E.g.*, Figures 1, 3 and 2:8-18; 4:43-5:7. Figure 1 shows a network 2 with a proxy server 6 as an intermediary between, for example, client device 16 and web server 32. Figure 3 shows an exemplary embodiment of network 100 with an agent 122 as an intermediary between a client 102 and web server 152.

**FIG. 3**

46. As described in the specification, the communication network comprises communication devices that can serve as a client, peer, or agent, as well as separate servers and web servers:

“An example of such a communication network 100 is provided by the schematic diagram of FIG. 3. The network 100 of FIG. 3 contains multiple communication devices. Due to functionality provided by software stored within each communication device, which may be the same in each communication device, each communication device may serve as a client, peer, or agent, depending upon requirements of the network 100, as is described in detail herein. It should be noted that a

detailed description of a communication device is provided with regard to the description of FIG. 4.

....

The communication network 100 also contains a Web server 152. The Web server 152 is the server from which the client 102 is requesting information and may be, for 65 example, a typical HTTP server, such as those being used to deliver content on any of the many such servers on the Internet. It should be noted that the server 152 is not limited to being an HTTP server. In fact, if a different communication protocol is used within the communication network, the server may be a server capable of handling a different protocol. It should also be noted that while the present description refers to the use of HTTP, the present invention may relate to any other communication protocol and HTTP is not intended to be a limitation to the present invention.”

’317 Patent at 4:43-5:7.

47. As each communication device is configured to operate as a client, agent or peer as necessary, in my opinion, a POSA would understand client 102 and agent 122 to both be client devices.

48. As shown in Figure 3, agent 122, in some embodiments, is a client device which can receive requests for content intended for web server 152. *See, e.g.,* ’317 Patent at 5:23-34. The specification also describes that the ‘agent’ can request this content directly from the web server. *See, e.g.,* ’317 Patent at 14:62-15:12.

49. The specification further explains:

“The communication network 100 further contains an acceleration server 162 having an acceleration server storage device 164. As is described in more detail herein, the acceleration server storage device 164 has contained therein an acceleration server database. The

acceleration server database stores Internet protocol (IP) addresses of communication devices within the communication network 100 having acceleration software stored therein. Specifically, the acceleration server database contains stored therein a list of communication devices having acceleration software stored therein that are currently online within the communication network 100. For each such agent, the acceleration server assigns a list of IP addresses.

‘317 Patent at 5:8-20.

50. In one embodiment, an application running on a client device, such as client 200, can initiate a request for a resource, which is intercepted by a client module (*e.g.* client module 224). ‘317 Patent at 12:62-13:3. The client module 224 looks up the IP address of web server 152 that is the target of the content request and sends the IP address to a server (*e.g.* acceleration server 162). ‘317 Patent at 13:8-15. In one embodiment, “acceleration server 162 prepares a list of agents that may be suitable to handle the request from this IP address (block 358)... The list of agents is created by the acceleration server 162 by finding the communication devices of the communication network 100 that are currently online, and whose IP address is numerically close to the IP of the destination Web server 152.” ‘317 Patent at 13:19-30; see also 10:32-36; see also Fig. 7.

V. REVIEW OF THE ‘317 PATENT CLAIMS

51. The ‘317 Patent contains 30 claims, with only claim 1 being independent. Claim 1 recites:

“[1 preamble] A method for fetching, by a first device, a first web-page that is identified by a first Uniform Resource Locator (URL) and is stored in a first web server and a second web-page that is identified by a second URL and is stored in a second web server, for use with a second device that stores a group of Internet Protocol (IP) addresses, each of the IP addresses is associated with a respective geographical location, the method comprising:

[1a] identifying, at the first device, the first URL and a first geographical location that is associated with at least one of the IP addresses in the group;

[1b] sending, by the first device to the second device, the first URL and the first geographical location;

[1c] receiving, by the first device from the second device, the first web-page, in response to the sending of the first URL and the first geographical location;

[1d] identifying, at the first device, the second URL and a second geographical location that is associated with at least one of the IP addresses in the group;

[1e] sending, by the first device to the second device, the second URL and the second geographical location; and

[1f] receiving, by the first device from the second device, the second web-page, in response to the sending of the second URL and the second geographical location.”

52. Upon reviewing the specification, in my opinion, a POSA would understand that the '317 Patent discloses a first device may send multiple content requests for multiple webpages. For example, a first device may send a first content request for a first webpage identified by a first URL and stored in a first web server. That same device may send a second content request for a second webpage identified by a second URL and stored in a second web server.

53. In my opinion, a POSA would understand that the '317 Patent discloses a second device that stores a plurality of IP addresses associated with a plurality of devices such as for example proxy client devices that may be used as intermediaries. Each of these proxy client devices may be located in a different geographical location. For example, the plurality of proxy client devices may be located in different cities, states, or countries all over the world. In my opinion, a POSA would understand that a particular proxy device can be used as an intermediary to fetch content from a particular web server, based on the geographic proximity of the proxy device to the web server.

54. In my opinion, a POSA would understand that the '317 Patent discloses that, for example, a proxy client device can be selected based on the geographic proximity of the proxy client device to the web server. For example, “[t]he list of agents is created by the acceleration server 162 by finding the communication devices ... whose IP address is numerically close to the IP of the

destination Web server 152.” ‘317 Patent at 13:25-29; see also 5:25-24 (“the agent 122 receives the request from the client 102 as the communication device closest to the Web server 152”). In one embodiment, “the client then decides which of the agents in the list to use as its agent for this particular information request.” ‘317 Patent at 13:62-64. In another embodiment the agent selects itself. ‘317 Patent at 15:6-12.

55. As another example, in response to a client’s request for content, “[t]he acceleration server then searches the agent database for the next 5 active agents whose IP address is closest to the IP address of the server who is targeted in the request (block 562). In this context, 192.166.3.103 is closer to 192.166.3.212 than to 192.167.3.104. The acceleration server then sends this agent list to the client (block 564).” ‘317 Patent at 16:65-17:6; see also Fig. 13.

56. In my opinion, a POSA would understand that the ‘317 Patent discloses a request sent from a first device to a web server via a second device and possibly a third device, such as a proxy client device. In my opinion, a POSA would understand that using the claimed methods would prevent the web server from seeing the source address as that of the first device. In my opinion, a POSA would understand that using the claimed methods allows the first device to remain anonymous as to the web server. This also allows the first device to avoid blocking/spoofing by the web server.

57. As a practical example, if a customer wanted to compare the price of a product sold by Amazon in the UK and the price of the same product sold by Amazon in the US, the customer could use the methods disclosed and claimed in the '317 Patent. The customer's first device may identify the first URL as "https://www.amazon.co.uk" and the second URL as "https://www.amazon.com". A second device may store a group of IP addresses, where each IP address is associated with a proxy client device and the geographical location of the proxy client device. The first device may identify the first geographical location for a desired proxy client device as the UK and the second geographical location for another desired proxy client device as the US. The first device may send the identified URLs and geographical locations to the second device. In this way, proxy client devices at the first and second geographical locations can be selected.

58. In this same example, the second device may send the first URL to a third device, *e.g.*, a proxy client device in the UK; and the second device may send the second URL to a fourth device, *e.g.*, a proxy client device in the US. The third device may then send the first URL to the first web server to obtain the requested content, with UK pricing information, and send it back to the first device via the second device. The fourth device may then send the second URL to the second web server to obtain the requested content, with US pricing information, and send it back to the first device via the second device. This method allows the customer

to avoid blocking/spoofing from the Amazon web servers and to obtain accurate pricing information.

VI. CLAIM CONSTRUCTION

59. It is my understanding that the first step in a proper invalidity analysis requires construing the relevant claims to determine their scope and meaning in view of the patent's specification, file history, and the understanding of a POSA.

60. The claim construction disputes as to “client device” and “server” do not affect my analysis herein for purposes of institution.

61. The claim construction disputes as to “source address” do not affect my analysis herein for purposes of institution.

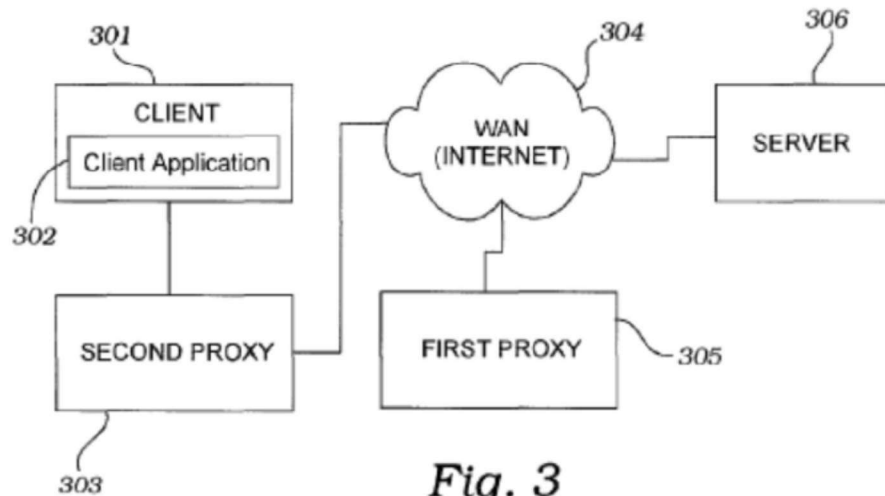
62. Independent claim 1 recites “first device” and “second device” which, in my opinion, a POSA would understand to be separate and distinct components. See, e.g., EX. 1010 at 14; see also, e.g., EX. 1011 at 13-14 and 16. Based on the analysis in the Petition, Petitioner agrees these are separate and distinct components. See, e.g., Petition at 37. This understanding is supported by the language of claim 1 itself, as well as the dependent claims (e.g., claims 16 and 18), and the '317 Patent specification (e.g., Figure 3 and associated description discussed above). Unless otherwise noted herein, even if the Board disagrees that these are separate and distinct components, my analysis does not change.

63. Dependent claim 3 recites “third device” and “fourth device” which, in my opinion, a POSA would understand to be separate and distinct components for the same reasons discussed above. Based on the analysis in the Petition, Petitioner agrees these are separate and distinct components. See, e.g., Petition at 50-54.

VII. OVERVIEW OF GOLDSTEIN (EX. 1005)

64. Goldstein (EX. 1005) is U.S. Pub. No. 2003/0149720. Goldstein is directed at a “system and method for accelerating internet access.” EX. 1005, Title.

65. With reference to Figure 3 of Goldstein, which is relied on by Petitioner, Goldstein discloses a network including a client 301 with a client application 302, a second proxy 303, a first proxy 305, and a server 306. EX. 1005 at [0024]. The first and second proxies communicate “using a specialized protocol, optimized for the kind of connection between the first proxy and the second proxy.” EX. 1005 at [0032]; see also Figure 5.



66. In operation, the client application 302 is disclosed as a browser. EX. 1005 at [0025]. With reference to Figure 5 of Goldstein, the browser of client 301 sends an HTTP request to the second proxy 305. EX. 1005 at [0042]. “The second proxy [303] decides whether to send the request directly to the destination server [306], or to a first proxy [305].” EX. 1005 at [0042].

67. Goldstein discloses “[t]he main advantage of a disclosed system with two proxies is that it allows to implement a protocol optimized for a special kind of connection between them.” EX. 1005 at [0036]. Goldstein additionally discloses “it allows the second proxy to decide, whether to send a request from the browser to the first proxy or directly to the web server.” EX. 1005 at [0036].

68. Goldstein discloses “[t]he second proxy can select which first proxy to use, based on such factors as location of the destination server, type of data, load on the different first proxies and so on.” EX. 1005 at [0036]. Goldstein

acknowledges that “[o]verhead from routing these requests through the first proxy, instead of sending them directly to the web server, may diminish or even reverse any speed advantages through the use of the optimized protocol” EX. 1005 at [0037].

69. Assuming the second proxy 303 decides to send the request to a first proxy 305, “[t]he second proxy applies transformations to the request, transforming it to the optimized protocol, and sends the transformed request to the first proxy [305].” EX. 1005 at [0042]. Goldstein discloses that the second proxy 303 “has means for compression of some or all of the requests, and the first proxy has compatible means for decompression of the compressed requests.” EX. 1005 at [0044].

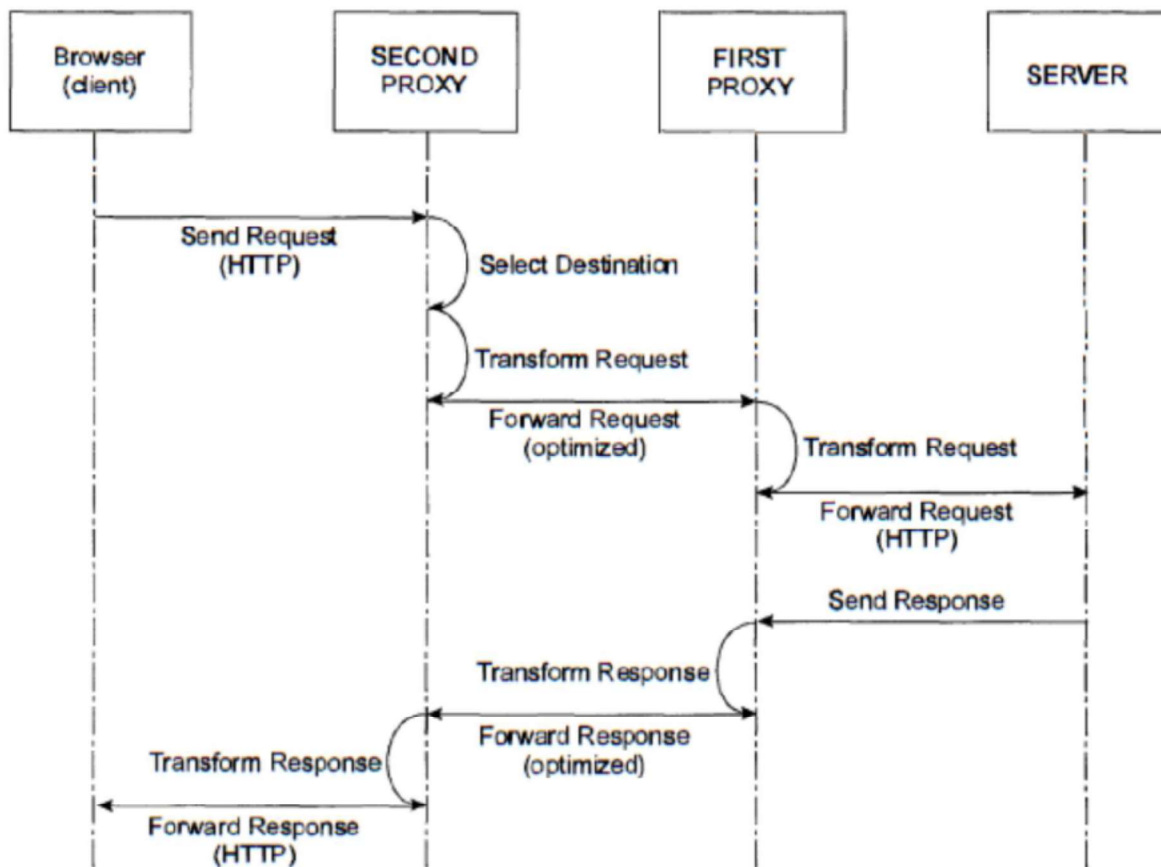


Fig. 5

70. With continued reference to Figure 5 of Goldstein, “[t]he first proxy [305] transforms the request back to HTTP and sends it to the destination server [306].” EX. 1005 at [0042]. “The server [306] sends the reply to the first proxy [305].” EX. 1005 at [0042]. “The first proxy [305] transforms a reply to the optimized protocol and sends it back to the second proxy [303].” EX. 1005 at [0042]. Goldstein discloses that the first proxy 305 “has means for compression of some or all of the responses, and the second proxy has a compatible means for decompression of the compressed responses.” EX. 1005 at [0043].

71. With continued reference to Figure 5 of Goldstein, “[t]he second proxy [303] transforms the reply to HTTP and sends it back to the browser [of client 301].” EX. 1005 at [0042].

A. TEACHING AWAY BY GOLDSTEIN

72. Goldstein teaches it is preferred that the second proxy is integrated with the client, rather than separate and distinct from the client. EX. 1005 at [0034]. This teaching is opposite to the method of claim 1 of the ‘317 Patent in which the “first device” and “second device” are separate and distinct components. See claim construction discussion above; see also, *e.g.*, dependent claim 16 (wherein the first device comprises a client device) and dependent claim 18 (wherein the second device comprises a server device).

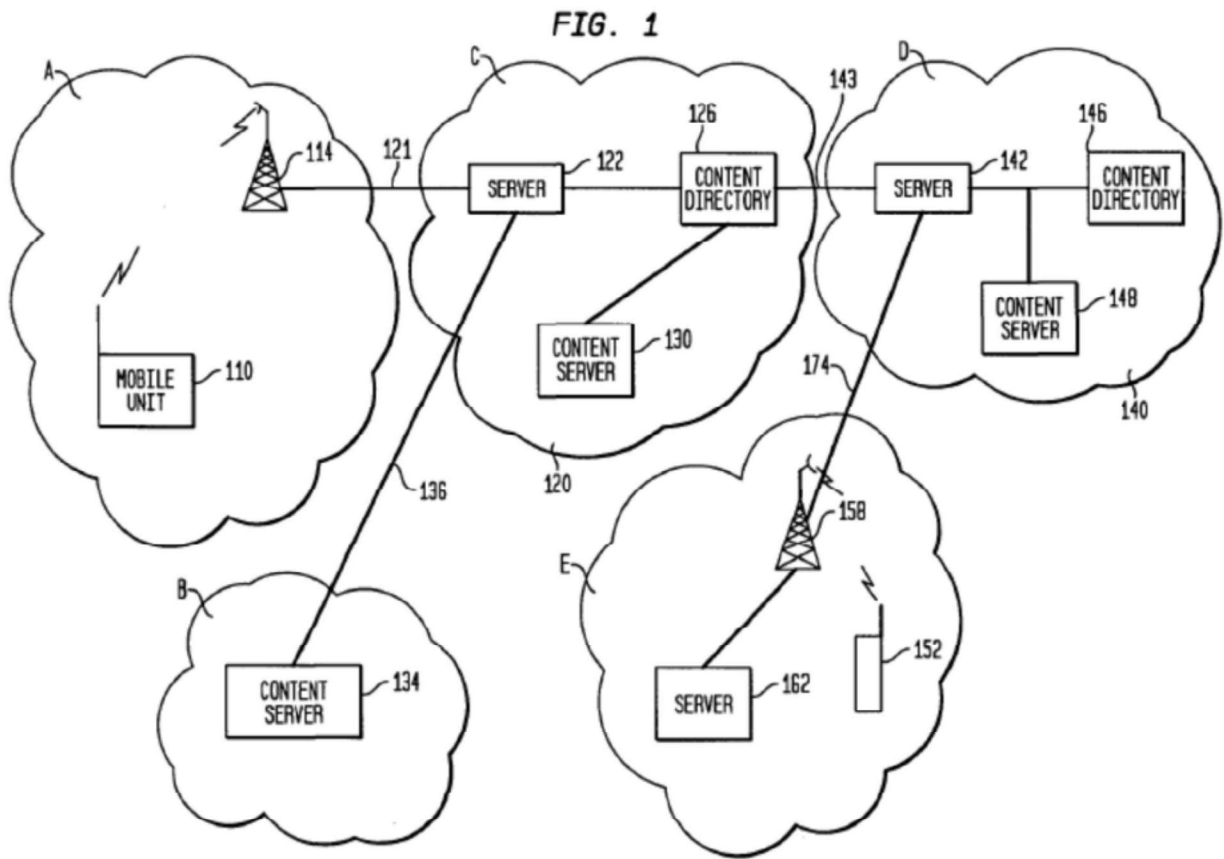
73. Goldstein teaches that the browser of the client sends all HTTP requests to the second proxy. EX. 1005 at [0033]. Petitioner agrees. Petition at 36. Goldstein teaches that it is the second proxy, not the client, that decides whether to forward requests to a first proxy or directly to the web server. EX. 1005 at [0036]. The client of Goldstein is agnostic as to whether a first proxy is used. The client of Goldstein is seemingly unaware as to whether a first proxy is used. This teaching is opposite to the disclosure of the ‘317 Patent in which a requesting client may purposely use a proxy device such as a proxy client device to avoid being blocked/spoofed by the target web server.

VIII. OVERVIEW OF LING (EX. 1006)

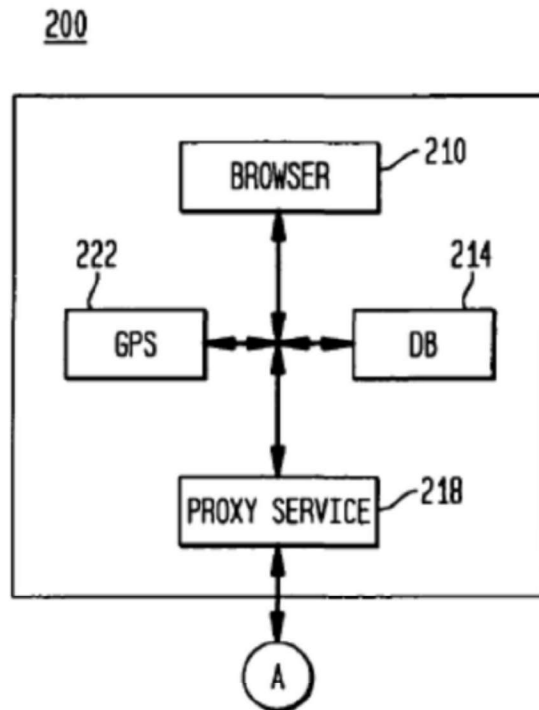
74. Ling (EX. 1006) is U.S. Pub. No. 2006/0206586. Ling is directed at a “method for routing content information to a mobile user or client application”.

EX. 1006, Abstract. For example, “the general architecture provides a way for a mobile device to send a request to a gateway server that is geographically close to the current location of the mobile device.” EX. 1006 at [0061].

75. With reference to Figure 1 of Ling, which is relied on by Petitioner, Ling discloses a network including a mobile unit 110 in a geographic area A; a gateway server 122, a content directory 126, and a content server 130 in a geographic area C; and an external content server 134 in a geographic area B. EX. 1006 at [0039] and [0049].



76. With reference to Figure 2 of Ling, which is relied on by Petitioner, Ling discloses mobile unit 200 includes a browser 210, a GPS block 222, a proxy service 218, and a database 214. EX. 1006 at [0054]. “[P]roxy service 218 acts as a browser interface that intercepts requests from the web browser and transparently redirects those requests to a gateway server, illustratively depicted as A in Fig 2.” EX. 1006 at [0055].

FIG. 2

77. “[D]atabase 214 acts as a local database for storing geographic information and IP addresses of gateway servers.” EX. 1006 at [0055]. “GPS block 222 obtains real-time geographic location or position information associated with the mobile device and provides that information to the proxy service 218.” EX. 1006 at [0055]. “[P]roxy service 218 uses the geographic location or position information [of the mobile unit] in accessing the local database 214 to determine the approximate gateway server to which the information should be directed.” EX. 1006 at [0055].

78. In operation, the browser of the mobile unit sends a request that is intercepted by the proxy service. EX. 1006 at [0056]. GPS block 222 of the mobile

unit provides the mobile unit's current geographic location or position information to proxy service 218, which uses database 214, to select a gateway server based on the geographic location of the mobile unit, as shown in, for example, Table 1. EX. 1006 at [0061]. Table 1 shows "the values in the longitude 1 and latitude 1 columns may represent the uppermost left point of a rectangular area, the values in the longitude 2 and latitude columns represent the lower-right most point of the rectangular area, and the values in the IP address column provide a network address of a gateway server residing in the corresponding rectangular area." EX. 1006 at [0061].

TABLE 1

Longitude1	Latitude1	Longitude2	Latitude2	IP
-74.47	40.47	-78.57	40.57	205.132.610
-78.57	40.57	-79.99	50.67	199.23.23.123

79. "Using Table 1, if the mobile device is in the location defined by the upper-left most point (-74.47, 40.47) and the lower-right most point (-78.57, 40.57), then the gateway server with IP address 205.132.6.10 is selected." EX. 1006 at [0062].

80. The proxy service modifies the request and sends the modified request to the selected gateway server. EX. 1006 at [0062].

81. The gateway server contacts the content directory to identify the location of the requested content. EX. 1006 at [0056]. In some embodiments, if the content directory cannot find a content server in its database, then the content directory accesses an external content server that has the requested content. EX. 1006 at [0070].

82. The gateway server then sends the content information to the mobile unit. EX. 1006 at [0056].

A. TEACHING AWAY BY LING

83. The mobile unit of Ling is unaware that the proxy service is redirecting its requests to various gateway servers. EX. 1006 at [0055]. This is opposite to the disclosure of the '317 Patent as discussed above.

84. The content directory determines the location of the information requested based on a minimum content routing cost. E.g., EX. 1006 at [0056], [0062]. The claims of the '317 Patent are not based on a minimum content routing cost. Rather, the '317 Patent discloses methods for fetching fresh content directly from the target web server using proxy devices such as proxy client devices.

85. Ling teaches that a gateway server is preassigned to a mobile unit in a particular geographic area. EX. 1006, Table 1; see also [0062]. This is opposite to the disclosure of the '317 Patent in which the requesting device may itself select a particular proxy device associated with a particular geographical location to be

used to fetch content direct from the target web server, based on the proxy device's proximity to the target web server.

86. Ling teaches "assigning each user a primary gateway server based on a residency area in accordance with an aspect of the present invention." EX. 1006 at [0059]. "When a user moves out of the assigned primary residency area, the location of the user will be sent back to the primary gateway server, which returns an IP address of a gateway server responsible for the area in which the user is currently located." EX. 1006 at [0059]. The teachings of Ling are focused on the geographic location of the mobile unit, rather than the geographic location of the target server. These teachings are opposite to the disclosure of the '317 Patent which purposely provides for geographic location of a proxy device such as that closest to the web server.

IX. OVERVIEW OF GOLDSTEIN-LING COMBINATION

87. Petitioner's proposed combination involves adding Ling's GPS unit 222 in Goldstein's client 301, allegedly corresponding to the "first device" of claim 1 of the '317 Patent. Petition at 37 and 39. Petitioner's proposed combination involves adding Ling's proxy service 218 and database 214 in Goldstein's second proxy 303, allegedly corresponding to the "second device" of claim 1 of the '317 Patent. Petition at 37 and 39. Petitioner's proposed combination is shown in Petitioner's annotated figure below:

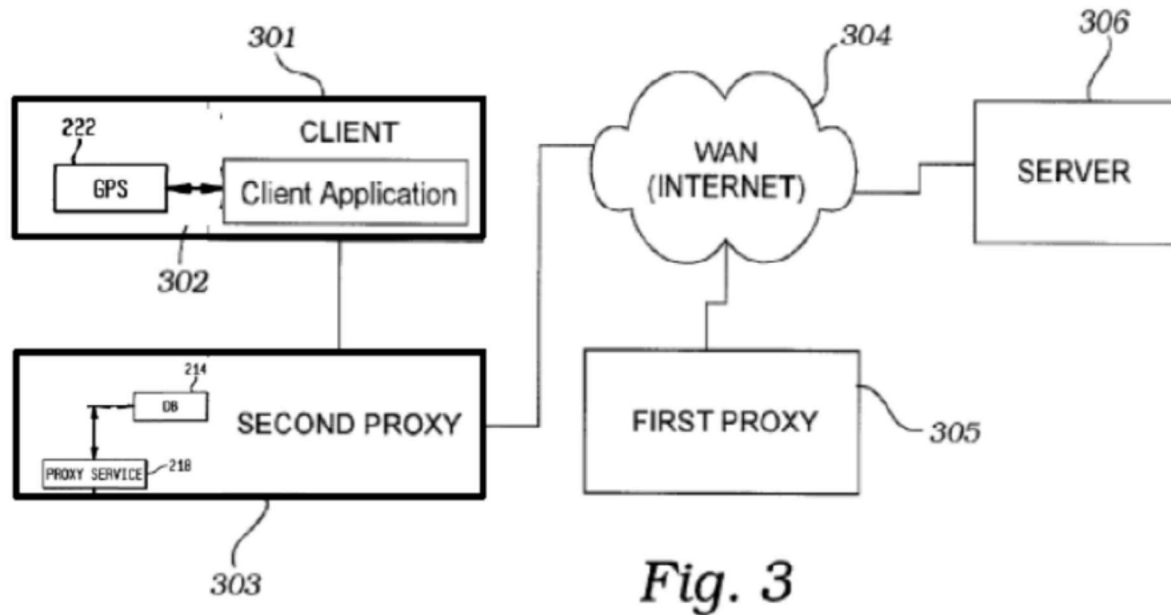


Fig. 3

Petition at 37.

A. CONTRARY TEACHINGS OF GOLDSTEIN AND LING

88. Goldstein teaches that the second proxy may select the first proxy based on the location of the destination server. EX. 1005 at [0036]. In contrast, Ling teaches that the proxy service selects the gateway server based on the location of the mobile unit. EX. 1006 at [0061], [0062]. In my opinion, a POSA would not be motivated to combine Goldstein and Ling based on these contrary teachings. Such a combination would change the function of either Goldstein or Ling.

B. PROPOSED COMBINATION TEACHES AWAY FROM THE CLAIMED INVENTION

89. The '317 Patent discloses methods for using a proxy device to obtain content directly from a web server, while protecting the anonymity of the

requesting device. For example, in order to obtain the requested content, a requesting client device may use a proxy device associated with a particular geographic location in order to avoid blocking or spoofing by the web server. The requesting client device may use for example a proxy device based on its geographic proximity to the target web server.

90. In contrast to the '317 Patent, Petitioner's analysis of the proposed Goldstein-Ling combination alleges that the proposed combination selects a first proxy based on proximity to the requesting client, rather than proximity to the target server. E.g., Petition at 50-54. Therefore, in my opinion, a POSA would not be motivated to combine Goldstein and Ling to arrive at the claimed invention.

C. NO MOTIVATION TO SPLIT FUNCTIONALITY OF LING

91. As discussed above, Ling discloses that GPS block 222, proxy service 218, and database 214 are all located within the mobile unit 200. EX. 1006 at [0054]; Fig. 2. Petitioner proposes to split (a) GPS block 222 and (b) proxy service 218 and database 214 in order to modify Goldstein. Petition at 37 and 39. However, Petitioner provides no motivation to split the functionality of mobile unit 200 of Ling between client 301 and second proxy 303 of Goldstein. In the embodiment of Fig. 3 of Goldstein, relied on by Petitioner, client 301 and second proxy 303 are separate and distinct components. In my opinion, Petitioner is using hindsight bias in order to map the proposed combination onto the claim elements.

In my opinion, the proposed combination is improper. For example, claim 1[a] requires “identifying, at the first device... a first geographical location” and claim 1[b] requires “sending, by the first device to the second device,... the first geographical location.” Petitioner must split GPS block 222 and proxy service 218 in order for Petitioner to map the alleged first device (client 301) sending the first geographical location to the alleged second device (second proxy 303). In my opinion, Petitioner is using hindsight bias and fails to explain why a POSA would be motivated to split the functionality of Ling’s mobile unit.

92. In my opinion, based on Petitioner’s analysis, the mobile unit of Ling would appear to correspond to the client of Goldstein; and the gateway server of Ling would appear to correspond to the second proxy of Goldstein. If the entire functionality of Ling’s mobile unit was added to modify Goldstein’s client, the resulting combination would be improper. As discussed above, Petitioner agreed all requests from Goldstein’s client are sent to the second proxy. Goldstein teaches that it is the second proxy that decides where to send the client’s request, either to the web server or to a first proxy. EX. 1005 at [0042]. Adding all of the functionality of Ling’s mobile unit to Goldstein’s client would change the overall operation of Goldstein because adding the proxy service to Goldstein’s client would make the client the decision-maker, rather than the second proxy. Such a

combination would be improper and a POSA would not be motivated to make such a combination.

D. MISCHARACTERIZATION OF “IP ADDRESS ASSOCIATED WITH A RESPECTIVE GEOGRAPHICAL LOCATION”

93. Claim 1 recites “a second device that stores a group of Internet Protocol (IP) addresses, each of the IP addresses is associated with a respective geographical location.”

94. In my opinion, upon reviewing the specification, a POSA would understand that each of the IP addresses in the group is associated with, for example, a proxy client device identified by the IP address and that proxy client device’s geographical location.

95. In my opinion, Petitioner’s analysis of the proposed Goldstein-Ling combination is flawed because, based on the teachings of Ling, the geographical location of the mobile unit is associated with an IP address of a gateway server. I therefore disagree with Petitioner’s characterization of claim 1 in the analysis of the proposed Goldstein-Ling combination. Petitioner alleges that the geographical location corresponds to the latitude/longitude of the modified client 301 of Goldstein. Petition at 39. In contrast, a POSA would understand from the ‘317 Patent that the geographical location corresponds to that of, for example, a proxy client device and not the first device.

96. Petitioner further alleges that geographical location of the modified client 301 is associated with a preassigned IP address based on Table 1 of Ling. Table 1 shows an IP address of a gateway server that is preassigned to a geographic area such that when the mobile unit is in that particular geographic area, the proxy service selects the preassigned gateway server. In my opinion, this analysis is inconsistent with the disclosure in the ‘317 Patent including, for example, a group of IP addresses stored in a second device where each IP address identifies a device that is associated with a geographical location. As discussed above, the ‘317 Patent discloses for example the second device storing a list of IP addresses of possible proxy client devices, and that the selection of a proxy client devices is, for example, based on geographic proximity of the proxy client device to the target web server. In contrast, as discussed above, Ling is focused on the geographic proximity of the mobile unit to the gateway server.

97. Therefore, in my opinion, the “association” alleged by Petitioner is not the same as the “association” disclosed and claimed in the ‘317 Patent. For at least these reasons, in my opinion, claim 1 of the ‘317 Patent is neither taught nor suggested by the proposed Goldstein-Ling combination.

**E. PROPOSED COMBINATION DOES NOT TEACH THE
LIMITATIONS OF CLAIMS 2-5 AND 7 REGARDING “FIRST IP
ADDRESS” AND “SECOND IP ADDRESS”**

98. In my opinion, a POSA would understand that the “first IP address” is different from the “second IP address” in the method of claim 2. Petitioner agrees. Petition at 50 (“proxy service 218 selects a different IP address”). In my opinion, this understanding is further supported by claim 3 which recites “a third device addressed in the Internet using the first IP address” and “a fourth device addressed in the Internet using the second IP address”. See also, e.g., claim 22. In my opinion, the “third device” is separate and distinct from the “fourth device” and a POSA would understand these devices to have different IP addresses. Petitioner agrees. Petition at 50-54.

99. Petitioner’s proposed combination adds Ling’s GPS block 222 to Goldstein’s client 301. Petition at 37. Such a combination would allow the modified client 301 to identify its geographical location at a given point in time. However, the proposed combination does not show that the modified client 301 would move physical locations when issuing different requests. Therefore, if Goldstein’s client 301 had not physically moved, the added GPS block 222 would return the same “first geographical location” and “second geographical location” of Goldstein’s client 301.

100. Petitioner alleges that the proposed Goldstein-Ling combination would result in the second proxy 303 selecting two different first proxies 305, one having a “first IP address” and another having a “second IP address”. Petition at 48-50. However, as discussed above, if the modified client does not physically move, the proxy service would select the same IP address because the first and second geographical locations are the same. Based on the teachings of Ling, the same mobile unit, in the same geographic area, would be pre-assigned a single gateway server with a single IP address. Using Table 1 of Ling, the proxy service would not select two distinct gateway servers for the same geographic area. Therefore, in my opinion, the proposed Goldstein-Ling combination would not select two different first proxies 305 as Petitioner alleges.

101. For at least this reason, in my opinion, Petitioner fails to show the proposed Goldstein-Ling combination teaches the limitations of claim 2. Additionally, claims 3-5 and 7 depend from claim 2 and necessarily incorporate the limitations of claim 2. For at least the reasons discussed above with respect to claim 2, Petitioner fails to show the proposed Goldstein-Ling combination teaches the limitations of claims 3-5 and 7.

This declaration is made under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Signed in Danville, California on September 7, 2022

Tim Arthur Williams

Dr. Tim Arthur Williams

EXHIBIT A

Tim Arthur Williams, Ph.D.
Curriculum Vitae

Dr. Williams has 45 years of professional experience in wireless communications, networking and telecom technology. He is an entrepreneur who has participated in the organization and operation of start up companies that brought wireless LAN, software VoIP PBX, and 2-way paging technology to the marketplace. Dr. Williams holds numerous patents in wireless and signal processing technology. He is an experienced litigation support consultant with experience in patent infringement matters. Dr. Williams is also a registered Patent Agent.

- Wireless LAN
- Cellular and PCS Standards
- Cellular Telephone Architecture
- Digital Signal Processing
- Telecommunications Technology
- VoIP Technology
- Computer Networking
- Wireless Networks & Protocols

Year	University	Degree
1991	University of Texas at Austin	MBA
1985	University of Texas at Austin	Ph.D., Dissertation: “Digital Signal Processing Techniques for Acoustic Log Data”
1982	University of Texas at Austin	MSEE, Thesis: “Cepstral Processing of Speech Signals”
1976	Michigan Technological University	BSEE

Professional Experience

From: 2008
To: 2010
Organization: Expressume, Inc / Montage Inc. – Milwaukee, WI
Title: Board Member
Summary: This company sells software for human resource recruiting. This company was sold in June 2019.

From: 2008
To: 2014
Organization: Faculte, Inc. – San Jose, CA
Title: Board Member
Summary: This company provided SaaS (Software as a Service) web video based communication products.

From: 2008
To: 2010
Organization: BitRail Networks Inc. – Miami, FL
Title: Founder, Board Member
Summary: This company sold computer networking solutions.

From: 2008
To: Present
Organization: Calumet Venture Management – Madison, WI
Title: Member
Summary: This company provides seed capital and management expertise to small companies.

From: 2006
To: 2015
Organization: BEEcube Inc. – Fremont, CA
Title: Founder, Board Member, Board Advisor
Summary: This company built high speed processing solutions. This company was sold to National Instruments, Inc. in Feb 2015.

Tim Arthur Williams, Ph.D.
Curriculum Vitae

From: 2006
To: 2015
Organization: Topaz Equity, LLC – Danville, CA
Title: Founder, Board Member
Summary: This is a private equity investment company. It owned AtomAMPD which develops, markets and sells software based network solutions.

From: 2004
To: Present
Organization: DoceoTech Inc. – Danville, CA
Title: Founder, Chairman
Summary: This was a training company that provides training for engineers in Wireless, Networking, and Telephony technologies. It is currently owned by Beach Technologies, LLC.

From: 2004
To: 2006
Organization: SiBEAM, Inc. – Sunnyvale, CA
Title: Founder, Chief Executive Officer
Summary: This is a fabless semiconductor company that develops high-speed wireless networking ICs. This company was sold to Silicon Image, Inc. in Apr 2011.

From: 2001
To: 2004
Organization: JetQue, Inc. – Danville, CA
Title: Founder, Chief Executive Officer
Summary: This company created messaging solutions for the mobile professional.

From: 1999
To: 2000
Organization: Atheros Communications, Palo Alto, CA
Title: Interim CEO, Advisory Board Member
Summary: This company builds wireless LAN ICs. Atheros became a public company in May 2004. (ATHR) This company was sold to QCOM in Jan 2011.

Tim Arthur Williams, Ph.D.
Curriculum Vitae

From: 1998
To: 2000
Organization: Picazo Communications, Inc. – San Jose, CA
Title: Chief Technology Officer, Advisory Board Member
Summary: This company built and sold software PBXs Telephony equipment using VoIP and Circuit Switched Technologies. The company was purchased by Intel.

From: 1996
To: Present
Organization: Beach Technologies, LLC – Danville, CA
Title: Chief Executive Officer
Summary: This is a consulting company that provides IP services. It owns DoceoTech LLC and Streaming Knowledge LLC, which perform the same services.

From: 1991
To: 1998
Organization: Wireless Access, Inc. – Santa Clara, CA
Title: Co-Founder, Chief Technical Officer, Vice President of Engineering, Vice President of Business Strategy
Summary: This was a startup company focusing on the Narrow Band PCS equipment market. The company developed the over the air protocols, the subscriber equipment and the ICs to deploy 2-way paging services. The company was sold to Glenarby Electronics.

From: 2014
To: 2021
Organization: Through Technology, LLC. – Chicago, IL
Title: Partner
Summary: This is a private equity investment company. It owns Through Technology Group, PTE LTD, which is registered in Singapore.

From: 1979
To: 1991
Organization: Motorola, Inc. – Austin, TX – Semiconductor Sector

Tim Arthur Williams, Ph.D.
Curriculum Vitae

Title: Sr. Engineer, Member Technical Staff, Sr. MTS
Summary: Business manager, project leader, and senior technical member of the teams which were responsible for product development of the following systems:

- ADPCM transcoder,
- ISDN U-reference point transceiver,
- CT-2 voice codec and channel modem,
- GSM voice codec and channel modem,
- TDMA voice codec and channel modem
- CDMA voice codec and channel modem, and
- Japanese Digital Cellular voice codec and channel modem.

From: 1976

To: 1979

Organization: Motorola Inc. - Chicago, IL - Communications Sector - Digital Voice Privacy Group

Title: Engineer

Summary: This group built the first commercial digitally encrypted two-way FM land mobile radio system.

Professional Certifications

▪Patent Agent – U.S. Patent and Trademark Office #50,790 (Jan 2002)

Issued Patents

Patent	Date	Description
9,787,471	2017	Data Enciphering or Deciphering using a Hierarchical Assignment System
7,904,117	2011	Wireless Communication Device using Adaptive Beamforming
6,781,962	2004	Apparatus and Method for Stored Voice Message Control
6,600,481	2003	Data entry apparatus and method
6,088,457	2000	Method and apparatus for over the air programming a communication device
5,854,595	1998	Communications apparatus and method with a computer interchangeable integrated circuit card
5,557,642	1996	Direct conversion receiver for multiple protocols

Tim Arthur Williams, Ph.D.
Curriculum Vitae

5,428,638	1995	Method and apparatus for reducing power consumption in digital communications devices
5,345,406	1994	Bandpass sigma delta converter suitable for multiple protocols
5,101,344	1992	Data processor having split level control store
5,001,661	1991	Data processor with combined adaptive LMS and general multiplication functions
4,989,169	1991	Digital tone detector using a ratio of two demodulators of differing frequency
4,972,356	1990	Systolic IIR decimation filter
4,965,762	1990	Mixed size radix recoded multiplier
4,947,363	1990	Pipelined processor for implementing the least-mean-squares algorithm
4,876,542	1989	Multiple output oversampling A/D converter with each output containing data and noise
4,862,169	1989	Oversampled A/D converter using filtered, cascaded noise shaping modulators
4,843,585	1989	Pipelineable structure for efficient multiplication and accumulation operations
4,843,390	1989	Oversampled A/D converter having digital error correction
4,796,219	1989	Serial two's complement multiplier
4,737,925	1988	Method and apparatus for minimizing a memory table for use with nonlinear monotonic arithmetic functions
4,734,876	1988	Circuit for selecting one of a plurality of exponential values to a predetermined base to provide a maximum value
4,727,508	1988	Circuit for adding and/or subtracting numbers in logarithmic representation
4,722,067	1988	Method and apparatus for implementing modulo arithmetic calculations
4,682,302	1987	Logarithmic arithmetic logic unit
4,618,946	1986	Dual page memory system having storage elements which are selectively swapped between the pages
4,406,010	1983	Receiver for CVSD modulation with integral filtering
4,398,262	1983	Time multiplexed n-ordered digital filter

Patent Applications and Continuation Applications

Appl. Num.	Pub. Date	Description
20070037528	2007	Wireless Communication Device using Adaptive Beamforming
20040252679	2004	Stored Voice message Control Extensions
15/711,590	2017	Data Enciphering or Deciphering using a Hierarchical Assignment

Tim Arthur Williams, Ph.D.
Curriculum Vitae

Published Papers

6 Sept 2016 Putnam, Jonathan D. and Williams, Tim A., The Smallest Salable Patent-Practicing Unit (SSPPU): Theory and Evidence. Available at SSRN: <https://ssrn.com/abstract=2835617>

Litigation Experience

See attached.