

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OXYLABS LT, UAB,

Petitioner

v.

BRIGHT DATA LTD.,

Patent Owner

Case IPR2024-00126

Patent No. 11,616,826

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, IPR2024-00126, involving U.S. Patent No. 11,616,826 (“the ’826 Patent”). I have reviewed the papers and exhibits in this IPR proceeding. I have reviewed the Board’s Institution Decision in this IPR proceeding.
4. In the case of *Bright Data Ltd. v. NetNut Ltd.*, Case No. 2:21-cv-00225 (E.D. Tex.)(the “NetNut Litigation” hereafter); I also reviewed related patents, including U.S. Patent Nos. 10,491,713 (“the ’713 Patent”) and 11,050,852 (“the ’852 Patent”) and 11,044,346 (“the ’346 Patent”), and their file histories. I reviewed my prior declaration in support of Plaintiff Bright Data Ltd.’s Claim Constructions (Dkt. 106-7) and the Declaration of Dr. Kimberly Claffy in support of Defendant’s Responsive Claim Construction Brief (Dkt. 115-1) in the NetNut Litigation. I reviewed the Court’s Claim Construction Orders in Case Nos. 2:19-cv-395 (E.D. Tex.)(Dkts. 191 and 453) and 2:19-cv-396 (E.D. Tex.)(Dkts. 97 and 244) and 2:21-cv-225 (E.D. Tex.)(Dkt. 146). I reviewed the Court’s *Alice* Orders in

Case Nos. 2:19-cv-395 (E.D. Tex.)(Dkt. 303) and 2:19-cv-396 (E.D. Tex.)(Dkt. 98). I reviewed the Declaration of Dr. Vernon Thomas Rhyne (Dkt. 126-5) and the Declaration of Dr. Michael J. Freedman (Dkt. 138-1) regarding claim construction in the case of *Bright Data Ltd. v. Teso LT, UAB et al.*, Case No. 2:19-cv-00395 (E.D. Tex.)(the “Teso Litigation” hereafter). I reviewed the Declaration of Dr. Vernon Thomas Rhyne (Dkt. 86-3) and the Declaration of Dr. Michael J. Freedman (Dkt 88-1) regarding claim construction in the case of *Bright Data Ltd. v. Code200, UAB, et al.*, Case No. 2:19-cv-00396 (E.D. Tex.)(the “Code200 Litigation” hereafter).

5. I have reviewed other exhibits submitted concurrently with this declaration, as cited and discussed herein.

6. In connection with my review of the materials discussed in this declaration, I also had telephone conversations with Bright Data’s Chief Technology Officer, Mr. Ron Kol, and Bright Data’s consulting source code reviewer from the various Texas litigations involving Bright Data patents, Mr. Matt McKune. I have also reviewed Ron Kol’s transcript in the Code200 Litigation, Case No. 2:19-cv-396 (E.D. Tex.). I have also reviewed the expert reports of Dr. Rhyne in the Code200 Litigation.

7. 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.

II. QUALIFICATIONS

8. 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.

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

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

11. 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.

12. 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.

13. 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.

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

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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).

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

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

III. LEGAL PRINCIPLES

23. 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 '826 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.

24. 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.

25. Taking the above factors into account, based on my experience in the art and my study of the Internet communication systems disclosed in the '826 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.

26. I understand that Petitioner proposed a POSA would be an individual who, as of October 8, 2009, had at least a bachelor's degree in Computer Science or related field (or equivalent experience), and at least two years' experience working with and programming networked computer systems. Petition at 10. I understand that the Board applied Petitioner's definition in the Institution Decisions. Paper 9 at 18. In my opinion, the differences in the proposed POSA definitions are not materially different and my analysis is the same under either definition. With that said, I disagree with Petitioner's definition at least because I believe that a POSA would have at least a bachelor's degree in a relevant field rather than purely experience.

27. Based on the foregoing, I believe that I am qualified to provide reliable opinions in the technical field of the '826 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).

28. 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

29. 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

30. 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).

31. 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.

32. 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.

33. 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.

34. 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.

35. 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.

36. 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.

37. 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.”

38. 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.)

39. 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.

40. 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.*

41. 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.*

IV. BACKGROUND TO THE FIELD OF TECHNOLOGY

42. In my opinion, a POSA would understand that network components, 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”). The IP address includes certain information that can be used to geolocate the network component with a particular IP address.

43. 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 the Source IP Address (the IP address of the sending network component) and the 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 a content stored on the web server.

44. In my opinion, a POSA would understand that, normally, a request for content is sent from a client device (discussed in detail below) to a web server. For example, a customer that is considering buying a product from a store may 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.

45. 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. In some cases, the response to the request for content may be blocked or spoofed due to, for example, the geographic location of the Source IP Address. As another example, multiple requests having the same Source IP Address may become suspicious and subsequently blocked or spoofed by the web server. As yet another example, requests having a commercial IP address, rather than a residential IP address, as the Source IP Address may be blocked or spoofed by the web server.

46. In my opinion, a POSA would understand that, at the time of invention, a different type of network component known as a proxy server may be used as an intermediary between the client device and the 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. When sending the IP packet from the proxy server to the web server, the proxy server will often replace the original Source IP address of the original requestor with its own IP address. Thus, a POSA would understand that the web server will only “see” the IP address of the proxy server. Instead of being blocked or spoofed, the requested content may be sent back to the original requesting network component via the proxy server.

V. INTRODUCTION TO THE CLAIMS OF THE ‘826 PATENT

47. All of the patents claiming priority to Provisional Application No. 61/249,624 filed on October 8, 2009 share the same specification.

48. The ‘826 Patent contains 25 claims with only claim 1 being independent. Claim 1 of the ‘826 Patent recites a “**first client device**”. Claim 1 of the ‘826 Patent also recites a “**web server**”. Claim 1 of the ‘826 Patent also recites a “**first server**” located between the first client device and the web server.

49. Claim 1 of the ‘826 Patent recites a method performed by the “**first server**” within a **first client device** ↔ **first server** ↔ **web server** architecture as shown, for example, in the annotated claims in the following table:

‘826 Patent
1. A method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the first server, the method by the first server comprising: [1a] storing, operating, or using, a server operating system; [1b] receiving, from the first client device, the first content identifier; [1c] selecting, an IP address from the list according to a criterion;

[1d] sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier;

[1e] receiving, in response to the sending of the first content identifier, the first content from the **web server**; and

[1f] sending the received first content, or a part thereof, to the **first client device**.

50. As further disclosed below, in my opinion, a POSA would understand that the specification discloses a **requesting client device** ↔ **proxy server** ↔ **web server** architecture relating to claim 1 of the '826 Patent. As further discussed below, in my opinion, a POSA would understand from the specification and the claims of the '826 Patent that the “**first client device**” may correspond to a requesting client device and that the “**first server**” may correspond to a proxy server.

51. As further discussed below, in my opinion, a POSA would understand that there may be additional intermediaries located between the “**first server**” and the “**web server**”. As disclosed in the specification and recited in the dependent claims, a POSA would understand these additional intermediaries may be **proxy client devices**. The preamble of claim 1 recites a “list of IP addresses” which a POSA would understand is a list of possible proxy IP addresses and for example,

claim 2 makes clear that the selected IP address is associated with a **proxy client device**. In my opinion, a POSA would also understand that the specification also discloses a **requesting client device** ↔ **proxy server** ↔ **proxy client device** ↔ **web server** architecture relating to, for example, claims 3-4. In my opinion, a POSA would understand that a “client device” may be a requesting client device (e.g., client 102 of Fig. 3) or a proxy client device (e.g., agent 122 of Fig. 3).

52. Based on my experience in other EPRs, e.g., 90/014,624 and 90/014,652, I have also reviewed related Patent No. 10,484,511 (“the ‘511 Patent”) and 10,637,968 (“the ‘968 Patent”). I note that the ‘511 and ‘968 Patents operate within a **first/requesting client device** ↔ **first/second server** ↔ **first/web server** architecture as shown, for example, in the annotated claims in the following table. Claim 1 of the ‘511 Patent is a method performed by the “**first server**”. Claim 1 of the ‘968 Patent is a method performed by the “**requesting client device**”.

‘511 Patent	‘968 Patent
1. A method for fetching, by a first client device , a first content identified by a first content identifier and stored in a web server , for use with a first server that stores a group	1. A method for use with a requesting client device that comprises an Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol Secure (HTTPS) client, for use with a first web server that is a

of IP addresses, the method by the first server comprising: receiving, from the first client device, the first content identifier; selecting, in response to the receiving of the first content identifier from the first client device, an IP address from the group; sending, in response to the selecting, the first content identifier to the web server using the selected IP address; receiving, in response to the sending, the first content from the web server; and sending the received first content to the first client device, wherein the first content comprises a web-page, an audio, or a video content, and wherein the first	HTTP or HTTPS server that respectively responds to HTTP or HTTPS requests and stores a first content identified by a first content identifier, for use with a second server distinct from the first web server and identified in the Internet by a second IP address, and for use with a list of IP addresses, the method comprising: identifying, by the requesting client device, an HTTP or HTTPS request for the first content; selecting, by the requesting client device, an IP address from the list; sending, by the requesting client device, to the second server using the second IP address over the Internet in response to the identifying and the selecting, the first content
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content identifier comprises a Uniform Resource Locator (URL).	identifier and the selected IP address; and receiving, by the requesting client device, over the Internet in response to the sending, from the second server using the selected IP address, the first content.
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53. Based on my experience in other IPRs, e.g., IPR2021-01492 and IPR2021-01493, I have also reviewed related Patent Nos. 10,257,319 (“the ‘319 Patent”) and 10,484,510 (“the ‘510 Patent”). I note that the ‘319 and ‘510 Patents in this same family have claims that recite a “**first client device**” that is an intermediary located between a second server and a first/web server. The ‘319 and ‘510 Patents claim methods performed by the “**first client device**” within a **second server** ↔ **first client device** ↔ **first/web server** architecture as shown, for example, in the annotated claims in the following table:

‘319 Patent	‘510 Patent
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1. A method for use with a first client device, for use with a first server that comprises a web server that is a Hypertext Transfer Protocol (HTTP) server that responds to HTTP requests, the first server stores a first content identified by a first content identifier, and for use with a second server, the method by the first client device comprising: receiving, from the second server, the first content identifier; sending, to the first server over the Internet, a Hypertext Transfer Protocol (HTTP) request that comprises the first content identifier; receiving, the first content from the first server over the Internet in response to the sending of the first content identifier; and sending, the first content by the	1. A method for use with a web server that responds to Hypertext Transfer Protocol (HTTP) requests and stores a first content identified by a first content identifier, the method by a first client device comprising: establishing a Transmission Control Protocol (TCP) connection with a second server; sending, to the web server over an Internet, the first content identifier; receiving, the first content from the web server over the Internet in response to the sending of the first content identifier; and sending the received first content, to the second server over the established TCP connection, in response to the receiving of the first content identifier.
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first client device to the second server , in response to the receiving of the first content identifier.	
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54. Based on my experience in the NetNut Litigation, I note that the '713 and '852 Patents in this same family have claims that recite methods comprising elements performed by the “**requesting client device**” within a **requesting client device** ↔ **second server** ↔ **first client device** ↔ **first/web server** architecture as shown, for example, in the annotated claims in the following table:

'713 Patent	'852 Patent
1. A method for use with a requesting client device that comprises an HTTP client and is identified over the Internet by a first Internet Protocol (IP) address, for use with a first server that is a web server that is Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol Secure (HTTPS) server that respectively responds to HTTP or HTTPS requests and stores a first content	1. A method by a requesting client device that is identified over the Internet by a first Internet Protocol (IP) address, for use with a first server that is a web server that is Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol Secure (HTTPS) server that respectively responds to HTTP or HTTPS requests and stores a first content identified by a first Uniform Resource

identified by a first content identifier, for use with a second server distinct from the first web server and identified in the Internet by a second IP address, the method by the requesting client device comprising: identifying, an HTTP or HTTPS request for the first content; sending, to the second server using the second IP address over the Internet in response to the identifying, the first content identifier and a geographical location; and receiving, over the Internet in response to the sending, from the second server via a first client device, the part of, or the whole of, the first content.	Locator (URL), and for use with a second server distinct from the first web server and identified in the Internet by a second IP address, the method by the requesting client device comprising: generating an HTTP or HTTPS request that comprises the first URL and a geographical location; sending, to the second server using the second IP address over the Internet, the generated HTTP or HTTPS request; and receiving, over the Internet in response to the sending, from the second server via a first client device, part of, or whole of, the first content, wherein the first content comprises a web-page, an audio content, or a video content.
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VI. BACKGROUND OF THE COMMON SPECIFICATION

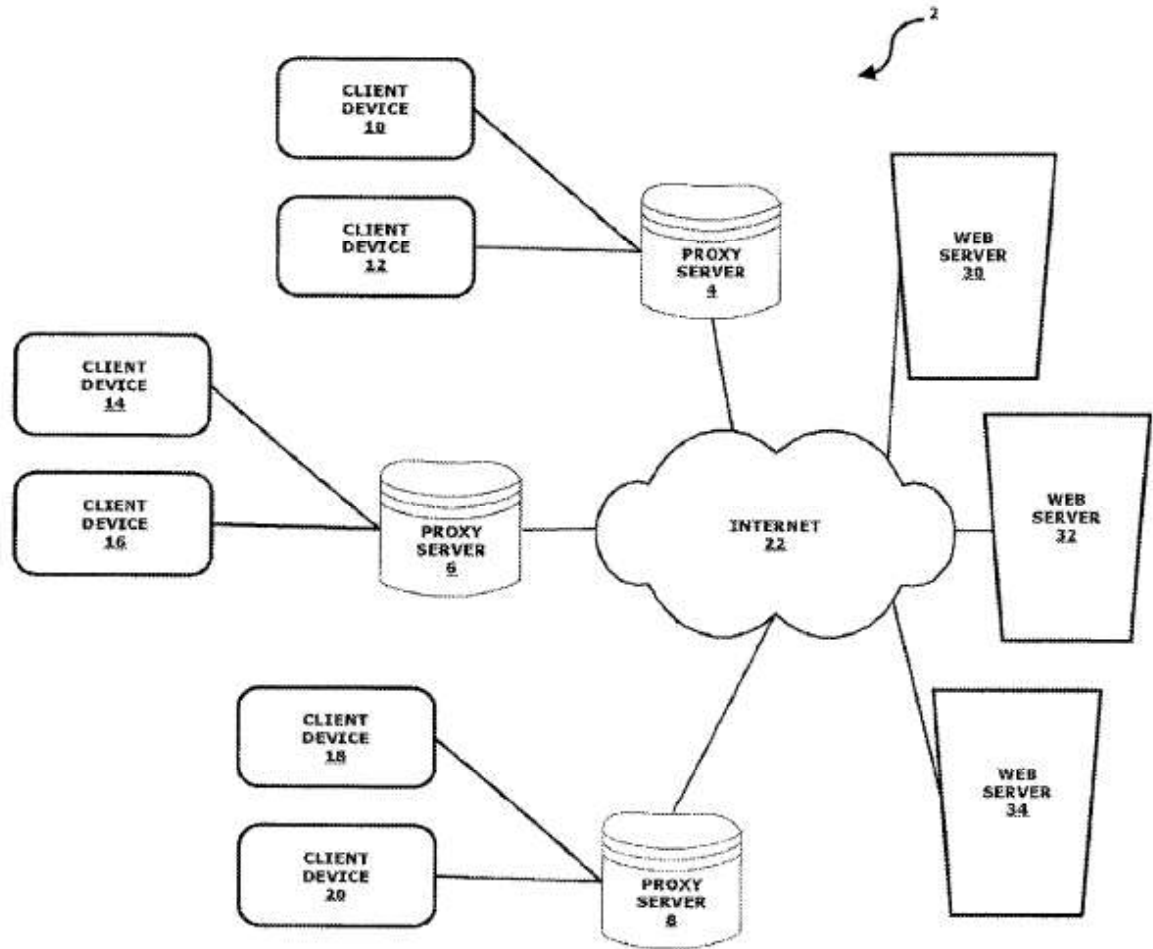
55. The specification distinguishes two prior art systems. The first prior art system is the traditional use of a proxy server as an intermediary between a client device and a web server. *See* EX. 1001 at 2:8-39. The second prior art system is the traditional use of a peer-to-peer system using caching client devices. *See* EX. 1001 at 2:40-3:3. The common specification explains that the prior art systems are cost prohibitive and do not handle dynamic content due to the typical cache-storage methods. As one example, the traditional use of a proxy server, as discussed above, would require a proxy server in almost every city within the United States and across the world. As another example, the traditional use of a proxy server, as discussed above, may still result in being blocked by the web server, if the IP address of the proxy server is used so regularly that it becomes recognizable and/or because the IP address of the proxy server is a commercial IP address as opposed to residential IP address.

56. In my opinion, the novel client device ↔ server ↔ client device ↔ web server architecture disclosed in the specification keeps the benefits (*e.g.*, provides anonymity) yet solves the problems associated with these two prior art systems (*e.g.*, lowers infrastructure costs, is able to handle dynamic content well). In my opinion, the use of proxy client devices means that fewer proxy servers are needed, lowering infrastructure costs, given that there are millions of consumer

computers available for use as proxy client devices worldwide. Additionally, proxy client devices using residential IP addresses as opposed to commercial IP addresses reduces the risk of blocking/spoofing by the web server.

VII. REVIEW OF THE COMMON SPECIFICATION

57. The specification of the '826 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. For example, Figure 1 and the associated discussion show a proxy server between one or more client devices and a web server in a communication pathway. *See, e.g.,* EX. 1001 at Fig. 1 and 2:8-15 (“One solution that has been in use is called a “proxy”. FIG. 1 is a schematic diagram providing an example of use of a proxy within a network 2. A proxy, or proxy server 4, 6, 8 is a device that is placed between one or more clients, illustrated in FIG. 1 as client devices 10, 12, 14, 16, 18, 20, that request data, via the Internet 22, and a Web server or Web servers 30, 32, 34 from which they are requesting the data.”)

**FIG. 1**

58. Similarly, Figure 3 shows an exemplary embodiment of network 100 with an agent serving as an intermediary between a client and web server. 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.

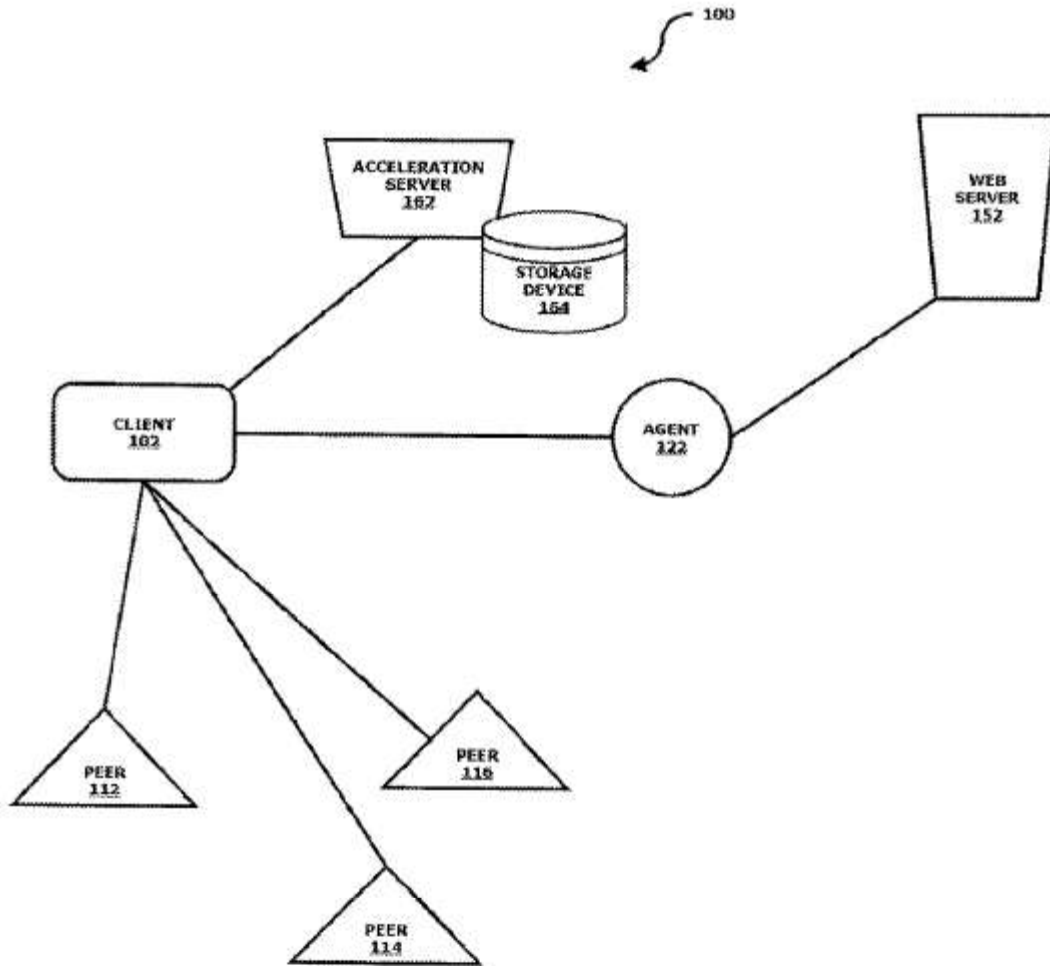
....

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 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.

The communication network 100 further contains an acceleration server 162 having an acceleration server storage device 164.”

EX. 1001 at 4:43-5:10.

59. 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.

**FIG. 3**

60. 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.,* EX. 1001 at 5:21-29. The common specification also describes that the ‘agent’ can request this content directly from the web server. *See, e.g.,* EX. 1001 at 15:39-42; 15:51-52; 15:63-16:11.

61. The specification discloses how a communication device can be configured to serve as a client, agent, or peer. *See* EX. 1001 at 4:44-50; 5:21-29;

see also id. at 9:12-50. For example, the specification explains a communication device may execute a client module, peer module, and/or agent module shown in FIG. 6.

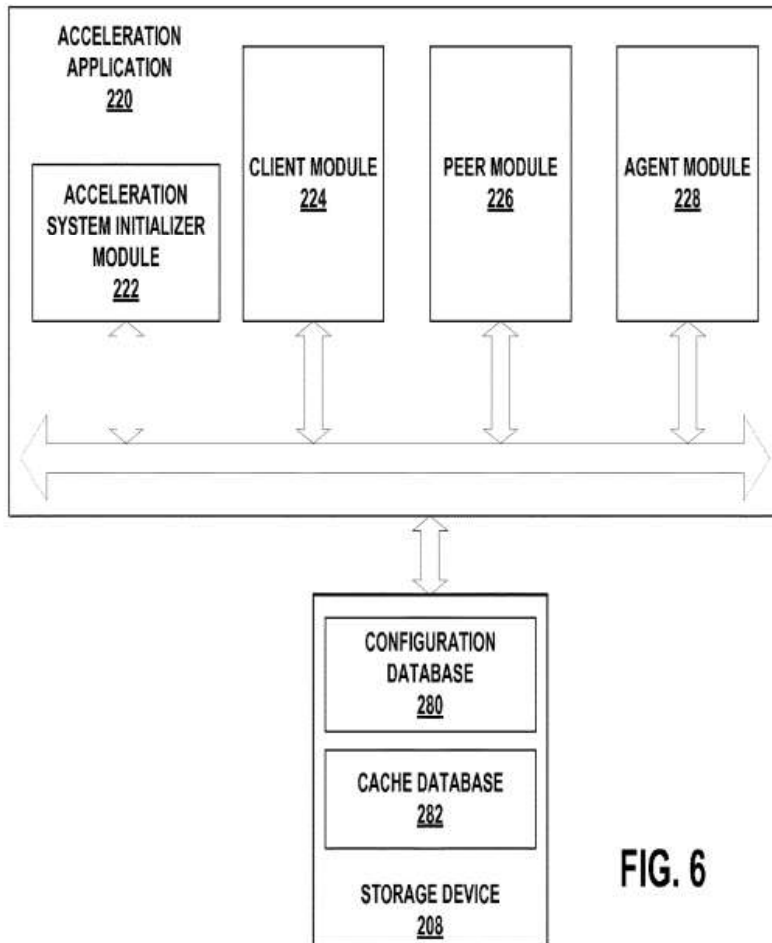
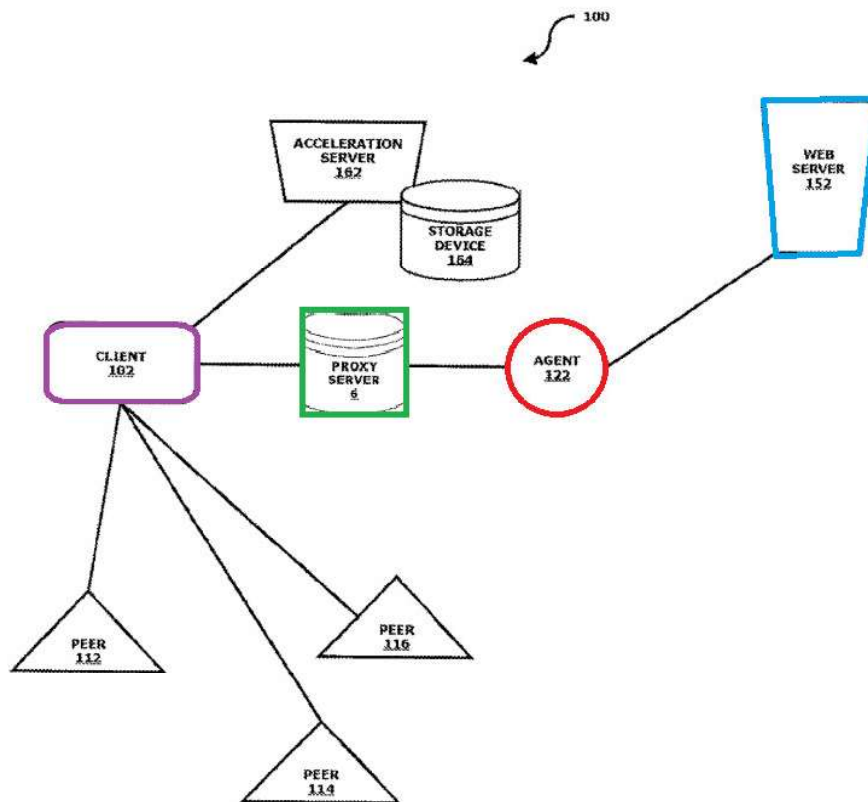


FIG. 6

62. In my opinion, a POSA would understand that proxy server 6 of Figure 1 could be inserted between client 102 and agent 122 of Figure 3, as shown below in a modified version of Figure 3.¹ The use of an intermediary proxy server

¹ A POSA would have understood that the communication network 100 shown in FIG. 3 is not intended to be limited and may include other known components, including a proxy server. *See, e.g.*, EX. 1001 at 5:41-48; 19:5-14. For example,

was well known and the specification discloses a proxy server may be placed between one or more client devices, which may include client 102 and agent 122 of FIG. 3. *See* EX. 1001 at 2:10-12. Therefore, a POSA would understand the specification discloses a **requesting client device** ↔ **proxy server** ↔ **proxy client device** ↔ **web server** architecture which may, for example, correspond to client 102 ↔ proxy server 6 ↔ agent 122 ↔ web server 152, as annotated in the modified figure below.



though not expressly shown in FIG. 3, a POSA would have understood that a router could be used in the communication network 100 of FIG 3.

VIII. CLAIM CONSTRUCTION

63. 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.

64. I understand the Court previously construed certain terms of the related Patent No. 10,484,511 ("the '511 Patent," EX. 2015) and Patent No. 10,637,968 ("the '968 Patent," EX. 2026) and entered a Claim Construction Order (EX. 1011) and a Supplemental Claim Construction Order (EX. 1013) in the Code200 Litigation. The Court also entered an Alice Order in the Code200 Litigation (EX. 2025).

65. I understand the Court previously construed certain terms of the related '319 and '510 Patents in the Teso Litigation (EX. 1010 and EX. 1013) and again in the NetNut Litigation (EX. 2023). The Court also entered an Alice Order in the Teso Litigation (EX. 2024).

A. THE PREAMBLE

66. In my opinion, the preamble of claim 1 is limiting. This is consistent with the Court's Claim Construction Orders. EX. 1010 at 9; EX. 1011 at 9; EX. 2023 at 8. Petitioner did not take a position on the preamble in the claim construction section, but Petitioner analyzes the preamble as if it were limiting. *E.g.*, Petition at 27-28 (analyzing Kocherlakota) and 56-57 (analyzing Cohen).

**B. “SELECTING, AN IP ADDRESS” AND “SENDING OF THE
SELECTED IP ADDRESSES TO THE FIRST CLIENT DEVICE”**

67. I agree with Petitioner’s understanding of the grammatical singular vs. plural recitation of “IP addresses” in claims 1 and 19. Petition at 20. I agree a POSA would understand sending the selected IP address in claim 19 to correspond to sending the IP address selected in claim 1.

68. Petitioner appears to understand “selecting, an IP address” in claim 1 to have its plain and ordinary meaning, however, as further discussed below, I do not believe Petitioner is using the plain and ordinary meaning in its analysis. See section XI.E.

69. In my opinion, “selecting” means making a choice in preference to another or others. *See, e.g.*, EX. 2016. The Merriam-Webster dictionary defines “select” as “to choose (as by fitness or excellence) from a number or group; pick out” or “to make a choice”. EX. 2017. The Cambridge English Dictionary defines “select” as “to choose a small number of things, or to choose by making careful decisions.” EX. 2018. In my opinion, “selecting” involves making a choice and requires some intelligent decision-making. For example, “selecting” may involve determining the numerical closeness of the possible proxy IP addresses relative to the destination web server. *See, e.g.*, EX. 1001 at 13:25-29. Even if instructed to determine the numerical closeness of proxy IP addresses relative to the destination web server, this still requires some choice, some intelligent decision-making, in

performing the “selecting” by evaluating the possible proxy IP addresses and making a choice.

70. Petitioner’s expert appears to agree with this understanding of “selecting” involving making a choice. For example, Petitioner’s expert agreed that acceleration server 162 performs “selecting” of agents to be included on a list. EX. 2013 at 48:1-5; *see also* EX. 1001 at 13:25-29 (“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.”). As another example, Petitioner’s expert agreed that client 102 performs “selecting” of an agent. EX. 2013 at 49:1-8; *see also* EX. 1001 at 13:64-14:2 (“To determine which agent in the list to use at its agent for the particular information request, the client may consider multiple factors, such as, for example, factoring the speed of the reply by each agent and whether that agent does or does not have the information required. There are multiple ways to implement this agent selection...”); *see also* EX. 1001 at 14:10-13 (“...after selecting an agent, the client notifies the selected agent that it is going to use it for this request, and notifies the other agents that they will not be used for this request.”), FIG. 10 (block 386).

71. Petitioner’s expert clarified that in his opinion, there is no “selecting” when the agent 122 identifies itself as the only peer because there is no choice. EX.

1002 at ¶64; EX. 2013 at 47:12-15, 49:1-14, 49:21-50:5. Petitioner’s expert stated that selecting means “[y]ou have to be able to choose among a set” and “[t]here’s no selecting if there’s only one answer”. EX. 2013 at 50:6-12 (reproduced below).

6	Q	What is your understanding of the term
7		"selecting"?
8	A	You have to be able to choose among a
9		set. There's no selecting if there's only one
10		answer. In other words, if I give my students a
11		multiple-choice question and I only have A, they
12		don't have to select the right answer.

72. Therefore, in my opinion, the “selecting” limitation of claim 1 requires the first server to make a choice in preference to another or others. This understanding is also consistent with the relevant prosecution histories of predecessor patents. For example, during prosecution of the parent patent, the application explained that neither of the cited references teach a server performs the “selecting” limitation. EX. 1008 at 128 (“BOTH the Yu and Barth references are silent regarding any selecting by any server in general”); *id.* (“In fact, the Yu reference teaches away from any selecting by any server... the selecting is made in the requesting client device (see step 514 in Figure 5)”) (emphasis in original); *see also* EX. 2005 at [0035]. The examiner also made similar arguments as to Yu over

the combination of Yu and Kageyama references during prosecution of the great-grandparent patent. EX. 2004 at 7.

C. “SERVER OPERATING SYSTEM”

73. In my opinion, a POSA would have understood “server operating system” to mean an operating system that runs on a server, a type of hardware. A POSA would understand that an operating system is the software that manages the hardware and controls the operation of programs. In my opinion, a POSA would understand that a server operating system is different from a client operating system at least because a server operating system (a) is optimized for concurrent network connections, as opposed to a client operating system that prioritizes interactions with the user; (b) typically has more robust administration tools; (c) typically uses a command line interface as opposed to a graphical user interface; (d) typically provides more fine-grained permissions and/or advanced security settings for multiple users/inputs (e.g., lockout services for certain connections, whitelist IP, etc.); and/or (e) manages redundant hard drives and/or multiple processors.

74. In my opinion, in the context of the ‘826 Patent, a POSA would understand that a server uses a server operating system, while a client device uses a client operating system, because client devices and servers are different types of hardware. See section VIII.D. In the context of the ‘826 Patent, a server operating

system running on a server (such as a proxy server, acceleration server, or web server) is contrasted with a client operating system running on a client device (such as a client, peer, or agent). For example, with respect to communication device 200 which is a client device, the '826 Patent describes "[t]he operating system 230 essentially controls the execution of computer programs and provides scheduling, input-output control, file and data management, memory management, and communication control and related services." EX. 1001 at 6:33-37. This explanation of an operating system is consistent with dictionary definitions. The Merriam-Webster Dictionary defines "operating system" as "software that controls the operation of a computer and directs the processing of programs (as by assigning storage space in memory and controlling input and output functions)". EX. 2011. The Cambridge English Dictionary defines "operating system" as "a set of programs that control the way a computer system works, especially how its memory is used and how different programs work together." EX. 2012.

75. Petitioner proposes "server operating system" means "an operating system capable of operating in the role of a server" or alternatively, "a general-purpose server operating system such as, e.g., UNIX, LINUXTM, Microsoft WINDOWS NT." Petition at 19-22. I disagree with Petitioner's proposed constructions at least because Petitioner does not acknowledge that a server

operating system is used by a server, a type of hardware. Petitioner also does not distinguish a server operating system from, for example, a client operating system.

76. In my opinion, Petitioner genericizes the term “server operating system” by focusing only on the capability of performing the server role, receiving requests and sending responses. This is contrary to the characteristics of a server operating system used for server hardware and known to a POSA. In my opinion, a POSA would understand that a **server** operating system runs on **server** hardware and a POSA would understand that a server operating system is not simply an operating system with the capability of receiving requests and sending responses. Petitioner also states the operating system must only be “capable” of operating in the role of a server, but does not explain whether server functionality must be enabled or whether client functionality must be disabled. Petitioner’s expert testimony during deposition confuses rather than clarifies Petitioner’s constructions.

77. Petitioner’s expert testified that an operating system can (a) be configured to operate in the role of a client exclusively (by disabling server functionality); (b) be configured to operate in the role of a server exclusively (by disabling client functionality); or (c) be configured to operate in both the client server roles. EX. 2013 at 17:8-22; 38:16-39:1; 39:2-7; 39:11-40:3; 41:1-16; 42:17-43:7. Petitioner’s expert was unable to distinguish a client operating system from a

server operating system based on his role-based definitions. EX. 2013 at 18:1-

21:17; 40:4-22. For example, even if an operating system was configured to

operate in the role of a client exclusively (by disabling server functionality),

Petitioner's expert still would not call that a client operating system. *Id.*

Petitioner's expert testified that a POSA would refer to a type of operating system,

but would not distinguish client operating system versus server operating system.

In my opinion, this contradicts the express claim language by genericizing

"operating system". The claim language expressly refers to a server operating

system, which in my opinion, would have been easily understood by a POSA.

78. Additionally, in order to be a server operating system, Petitioner's expert does not require the operating system to be configured to operate in the role of a server exclusively (by disabling client functionality). And, according to Petitioner's expert, even if the operating system were configured to operate in both the client and server roles, he would still call that a server operating system. This is nonsensical and strips all meaning from the claim language which recites "server operating system".

79. Petitioner's expert also relies on the Masters reference (EX. 1022) as support for his alternative proposed construction. EX. 1002 at ¶61 (citing EX. 1022 at 8:53-55). In my opinion, the Masters reference shows that a server operating system runs on a server hardware. The Masters reference refers to a general

purpose server operating system employed on server computer 202, which is server hardware. EX. 1022 at 8:51-56; *see also* 8:28-30; 7:11-19. Server computer 202 of FIG. 4 relates to internet server 102 of FIG. 1. Petitioner's expert agreed. EX. 2013 at 44:8-12. The Masters reference discloses server computer 202 may be a "blade" server, which is server hardware well known to a POSA. EX. 1022 at 9:36-51. In FIGS. 4 and 5, the Masters reference distinguishes server computer 202 from client computer 300. In FIG. 1, the Masters reference distinguishes internet server 102 from clients 128. Therefore, in my opinion, the Masters reference actually supports Patent Owner's proposed construction for "server operating system", not Petitioner's proposed constructions.

80. Additionally, in my opinion, a POSA would have known that UNIX, Linux, and Microsoft Windows NT offered various types of operating systems. Therefore, a generic reference to a UNIX, Linux, or Microsoft Windows NT operating system does not show that the operating system is a server operating system specifically. In my opinion, if a UNIX, Linux, or Microsoft Windows NT operating system were running on server hardware, then that operating system would be a server operating system.

D. “CLIENT DEVICE” AND “FIRST SERVER”

81. As discussed below, in my opinion, the term “client device” means “consumer computer” or alternatively, “consumer communication device”. The term “first server” means “server that is not a client device”.

82. Petitioner relies on purely role-based constructions for these claim terms (*e.g.*, Petition at 17-19) which, in my opinion, is not appropriate in the context of the ‘826 Patent. Petitioner’s expert analyzed a “client device” as a “communication device that is operating in the role of a client”. EX. 2013 at 34:18-35:1. Petitioner’s expert did not give any special meaning to “communication device” and instead, understood this to mean a device that can communicate. EX. 2013 at 35:2-15. Petitioner’s expert testified that operating in the role of a client means sending requests and receiving responses. EX. 2013 at 35:16-19. Petitioner therefore deviates from the Court’s construction for the term “client device” and does not attribute any special meaning to the term “communication device.”

83. Petitioner’s expert analyzed a “first server” as a “device that is operating in the role of a server and that is not the first client device or the web server”. EX. 2013 at 35:20-36:4. Petitioner’s expert testified that operating in the role of a server means receiving requests and sending responses. EX. 2013 at 36:5-8. Petitioner’s expert testified that the “first server” is a device that communicate. EX. 2013 at 57:8-10. Petitioner’s expert found that the district court’s finding that

a server is not a communication device in the context of the specification was not material to his analysis. EX. 2013 at 75:3-13. Petitioner also deviates from the Court’s construction for the term “first server” attempting to remove the requirement that it be a server.

84. In its analysis, Petitioner applies purely role-based constructions where any device “operating in the role of a client” is a client device and any device “operating in the role of a server” is a server. Petitioner treats client devices and servers as interchangeable general purpose computers. In my opinion, the purely role-based constructions are not appropriate at least because they directly contradict the Court’s Claim Construction Orders, the Court’s Code200 Alice Order, and the Court’s Teso Alice Order, as discussed below. Additionally, in my opinion, the purely role-based constructions are not appropriate at least because they directly contradict the express claim language, the figures of the specification, and the applicant’s prosecution history statements, as discussed below. In my opinion, Patent Owner’s proposed constructions are appropriate and consistent with intrinsic and extrinsic evidence, as discussed below.

1. PURELY ROLE-BASED CONSTRUCTIONS CONTRADICT THE COURT’S CLAIM CONSTRUCTION ORDERS

85. The Court previously construed the terms “client device” and “first/second server” in claims of related patents in the context of the common

specification and the Court expressly rejected referring to these terms as generic devices operating in a particular role. As discussed below, the Court found that a “client device” is a physical communication device, which has a special meaning in the context of the specification. A communication device in the context of the specification is not simply any device that communicates over the Internet. The Court also found that a “second server” (corresponding to the “first server” of the ‘826 Patent claims) is a physical server and that a server is not a communication device in the context of the specification. Petitioner attempts to genericize these claimed components. *See also* EX. 2006 at 42:6-14 (Petitioner’s expert testifying regarding ‘communication device’) and EX. 2006 at 43:16-24; 44:7-13; 44:24-45:23 (testifying regarding server).

86. In my opinion, the purely role-based constructions contradict the Court’s claim construction findings because they refer to generic devices operating in a particular role. The purely role-based constructions fail to account for the physical/structural differences between client devices and servers.

87. In the Teso Litigation and the Code200 Litigation, the Court construed the term “client device” as “communication device that is operating in the role of a client.” EX. 1010 at 12; EX. 1011 at 13. The Court found that the specification does not include servers as a type of communication device. EX. 1010 at 12.

88. In the NetNut Litigation, Defendant NetNut Ltd. (“NetNut”) proposed a construction of “client device” as “a device operating in the role of a client” and thereby remove the requirement that it be a “communication device.” EX. 2023 at 10. The Court expressly rejected removing the word “communication” from its prior construction of this same term in view of the same specification. EX. 2023 at 14. In my opinion, a POSA would understand that ‘communication device’ has a special meaning in the context of the specification as referring to a ‘client device’. A communication device is not simply any device that communicates over the Internet. The Court has repeatedly emphasized that a “client device” in the context of the specification is not merely a general-purpose computer. *See, e.g.*, EX. 2023 at 14-15.

89. “Each communication device may serve as a client, peer, or agent.” EX. 1001 at 4:48-49. For example, Fig. 3 of the specification discloses client 102, peers 112, 114, 110; and agent 122, all of which are “client devices” in the context of the specification. *Id.* The Court acknowledged that “communication device” has a special meaning in the context of the specification and that servers are not a type of communication device. EX. 1010 at 12. For example, Fig. 6 of the specification discloses communication device 200 may include a client module 224, a peer module 226, or an agent module 228. There is no disclosure of a server module in communication device 200.

90. As discussed above, the “second server” of the ‘319 and ‘510 Patents corresponds to the “first server” of the ‘826 Patent. In the Teso Litigation, the Court construed the term “second server” as “server that is not the client device.” EX. 1010 at 14; EX. 1013 at 11 (“The Court is not changing the construction of “first server” and “second server”). In the Code200 Litigation, the Court construed the term “first server” of the ‘511 Patent as “server that is not the client device or the web server”. EX. 1011 at 15 (also similarly construing the term “second server” of the ‘968 Patent).

91. During the NetNut Litigation, NetNut proposed that the term “second server” of the ‘319 and ‘510 Patents should mean “a device operating in the role of a server”. The Court stated it “hereby expressly rejects Defendant’s proposal of referring generically to “a device,”... ” EX. 2023 at 20. The Court reiterated that “second server” means “server that is not the client device.” EX. 2023 at 23.

92. The specification discloses “servers” as proxy servers, acceleration servers, or web servers. *See, e.g.*, Figures 1 and 3. The Court acknowledged that servers are not disclosed as a type of “communication device” in the specification. EX. 1010 at 12.

93. In my opinion, the purely role-based constructions are not appropriate because they fail to account for the special meaning of ‘communication device’ in the context of the specification. In my opinion, the purely role-based constructions

fail to account for the fact that the “first server” is indeed a server. In my opinion, the purely role-based constructions also fail to account for the fact that a server is not a ‘communication device’ and therefore not a “client device”. In my opinion, the purely role-based constructions are not appropriate because they genericize these claim terms. In my opinion, the purely role-based constructions are not appropriate because the Court expressly rejected referring to these claim terms as generic devices operating in a particular role. The Court repeatedly recognized that client devices and servers are not interchangeable, general purpose computers in the context of the specification.

2. PURELY ROLE-BASED CONSTRUCTIONS CONTRADICT THE COURT’S CODE200 ALICE ORDER

94. In my opinion, the purely role-based constructions contradict the technical reasoning provided by the Court in the Code200 Alice Order finding the claims of the ‘511 and ‘968 Patents were not abstract. EX. 2025. The defendants in the Code200 Litigation argued that the claimed inventions of the ‘511 and ‘968 Patents “are directed to nothing more than receiving, requesting, sending, and identifying information”. EX. 2025 at 5.

95. The Court found that the claims of the ‘511 and ‘968 Patents were not abstract at least because the claims “are directed to an architecture comprised of[] clients, servers, and web servers configured into an architecture to facilitate

providing requested content using an IP address that is selected from a group of IP addresses and used to fetch the content.” EX. 2025 at 8. The Court acknowledged that the ‘511 Patent performs this selection at the “first server” and the ‘968 Patent performs this selection at the “requesting client device.” EX. 2025 at 8.

96. The Court found that the defendants “boils the asserted claims down to nothing more than the actions of ‘requesting,’ ‘sending,’ and ‘identifying.’” EX. 2025 at 10. The Court found that such simplification of the claims of the ‘511 and ‘968 Patents is improper. EX. 2025 at 10. The independent claims of the ‘511 and ‘968 Patents are directed at methods performed within a specific **first/requesting client device ↔ second server ↔ first/web server** architecture, as recognized by the Court.

97. In my opinion, the purely role-based constructions are improper in the context of the ‘826 Patent because they genericize the claimed components and fail to distinguish client devices and servers. Like in the Code200 Litigation, Petitioner ignores the specific architecture of the ‘826 Patent claims and instead focuses only on the actions of sending and receiving information. The purely role-based constructions do not consider which component is performing which method step in the ‘826 Patent claims, which in my opinion, is contrary to the technical reasoning in the Code200 Alice Order. In my opinion, Petitioner’s purely role-

based constructions are improper in the context of the common specification and the ‘826 Patent claims.

3. PURELY ROLE-BASED CONSTRUCTIONS CONTRADICT THE COURT’S TESO ALICE ORDER

98. In my opinion, the purely role-based constructions contradict the technical reasoning provided by the Court in the Teso Alice Order finding the claims of the ‘319 and ‘510 Patents were not abstract. EX. 2024. The defendants in the Teso Litigation attempted to reduce the claimed inventions of the ‘319 and ‘510 Patents to general purpose computers sending or receiving information over the Internet. EX. 2024 at 6-7. The Court expressly stated that “[i]f the claimed methods in this case were simply the receipt and forwarding of information over the Internet, [Defendants] might have a compelling argument. However, it is the use of non-traditional client devices that transforms the Asserted Claims into non-abstract subject matter.” EX. 2024 at 8-9. The Court also found that “[t]he use of a non-traditional network structure with a client device acting as a proxy is designed to produce ‘faster and more efficient data communication within a communication network.’” EX. 2024 at 10. The Court also found that “it is not the individual steps of the method that render the Asserted Claims non-abstract, it is the network architecture as a whole.” EX. 2024 at 9. The defendants in the Teso Litigation

ignored the specific **second server** ↔ **first client device** ↔ **first/web server**

architecture in which the claimed methods of the ‘319 and ‘510 Patents operate.

99. In my opinion, the purely role-based constructions are not appropriate in the context of the ‘826 Patent because they genericize the claimed components and fail to distinguish client devices and servers. Like in the Teso Litigation, Petitioner ignores the specific architecture of the ‘826 Patent claims and instead, focuses only on the actions of sending and receiving information. The purely role-based constructions do not consider which component is performing which method step in the ‘826 Patent claims, which in my opinion, is contrary to the technical reasoning in the Teso Alice Order.

100. In the Teso Litigation, the Court also noted that “[Defendants] specifically represented that they would not take the position that they would later assert that client devices and servers are interchangeable general use computers.... However, they appear to have taken that position anyway.” EX. 2024 at 11. The Court also noted that the defendants represented they would not treat client devices and servers as interchangeable use computers in the Claim Construction Order. EX. 1010 at 15. In my opinion, Petitioner is attempting to treat client devices and servers as interchangeable general use computers which is directly contrary to the Court’s Alice Order and improper in the context of the common specification and the ‘826 Patent claims.

4. PURELY-ROLE BASED CONSTRUCTIONS CONTRADICT THE EXPRESS CLAIM LANGUAGE

101. The preamble of claim 1 recites a “first server”. The preamble makes clear that the method steps of claim 1 are performed by the “first server.” Therefore, in my opinion, a POSA would understand that the claimed “first server” is a server, not a client device, regardless of the role being performed at a particular point in time for a particular method step. In my opinion, a POSA would understand that the “first server” is necessarily and consistently a server as the claimed methods are performed. The purely role-based constructions do not account for the express claim language at least because, under the purely role-based constructions, the “first server” would sometimes be operating in the role of a client. Therefore, in my opinion, the purely role-based constructions directly contradict the express claim language. Any intermediary would meet both constructions. The purely role-based constructions are divorced from the claim language at least because they do not require the “first server” to operate in the role of a server during each method step.

102. As one example, limitation [1e] of claim 1 of the ‘826 Patent recites the first server “receiving... the first content from the web server”. At this point in time, under the purely role-based constructions, the “first server” would be operating in the role of a client, not a server. In my opinion, the purely role-based constructions contradict the express claim language which makes clear that the

“first server” is a server regardless of the role being performed at a particular point in time. The “first server” is an intermediary which changes roles at different points in time.² As further discussed below, there would be nothing to distinguish an intermediary server from an intermediary client device under the purely role-based constructions.

103. As yet another example, claim 3 of the ‘826 Patent recites the first server sending the first content identifier to the second client device. At this point in time, under the purely role-based constructions, the “first server” is operating in the role of a client, not a server; while the “client device” is operating in the role of a server, not a client. In my opinion, this express claim language shows that the purely role-based constructions are not appropriate because the “first server” is necessarily and consistently a server during performance of this method step; while the “client device” is necessarily and consistently a client device during performance of this method step. Both the “first server” and the selected “client device” are intermediaries that perform client/server roles at different points in time.

² For example, during the method steps recited in limitation [1f], the “first server” is operating in the role of a server under the purely role-based constructions.

104. In my opinion, Petitioner’s purely role-based constructions can be analogized to the baseball players pitcher and catcher. If “pitcher” is construed as a “a player who throws a ball” and “catcher” is construed as “a player who catches a ball”, then when the catcher throws the ball to the pitcher, the act of “throwing” would mean the catcher now meets the role-based construction for pitcher. Similarly, when the pitcher catches the ball from the catcher, the act of “catching” would mean the pitcher now meets the role-based construction for pitcher. This cannot be correct. The pitcher remains a “pitcher” regardless of whether the pitcher is throwing or catching a ball. The catcher remains a “catcher” regardless of whether the catcher is throwing or catching a ball. The pitcher and the catcher are different types of baseball players. In the context of the ‘826 Patent, a “client device” and a “server” are different types of components, i.e., different hardware.

105. For at least these reasons, in my opinion, the purely role-based constructions are not appropriate because they contradict the express claim language.

5. PURELY ROLE-BASED CONSTRUCTIONS CONTRADICT THE FIGURES OF THE SPECIFICATION

106. In my opinion, the purely role-based constructions are not appropriate in the context of the ‘826 Patent because they contradict the figures of the specification. Under the purely role-based constructions, any intermediary would

meet both constructions. Petitioner does not distinguish an intermediary client device from an intermediary server.

107. As discussed below, Petitioner’s constructions fail to distinguish proxy server 6 of Figure 1 and agent 122 of Figure 3. Under the purely role-based constructions, proxy server 6 would meet both constructions for “client device” and “first server”. Under the purely role-based constructions, agent 122 would meet both constructions for “client device” and “first server”. This cannot be correct.

108. As discussed below, in my opinion, upon reviewing the specification in general, and Figures 1 and 3 in particular, a POSA would understand that proxy server 6 must be structurally different from agent 122. As discussed below, under the purely role-based constructions, proxy server 6 of Figure 1 and agent 122 of Figure 3 would be operating in the same roles at a given point in time. Therefore, under the purely role-based constructions, there would be nothing to distinguish proxy server 6 of Figure 1 (prior art) and agent 122 of Figure 3 (inventive embodiment). Under the purely role-based constructions, Figure 3 collapses onto Figure 1.

109. In my opinion, these figures inform a POSA that a server is not a client device and that a client device is not a server. Proxy server 6 of Figure 1 (prior art) must be structurally different from agent 122 of Figure 3 (inventive

embodiment). This understanding is consistent with Patent Owner's proposed constructions, discussed below. In my opinion, the purely role-based constructions do not account for the structural differences between a proxy server (in Figure 1) and a proxy client device (in Figure 3) and therefore, the purely role-based constructions are not appropriate.

a. REVIEW OF FIGURE 1

110. For example, Figure 1 depicts prior art. EX. 1001 at 3:66-67. Figure 1 shows proxy server 6 between client devices 14,16 and web server 32. In my opinion, a POSA would understand that client devices 14,16 are client devices and not servers; and a POSA would understand that web server 32 is a server and not a client device.

111. If a POSA were to apply the purely role-based constructions, in my opinion, client devices 14,16 are operating in the role of a client and web server 32 is operating in the role of a server.

112. In Figure 1, the exemplary intermediary is proxy server 6. In my opinion, a POSA would understand that proxy server 6 is a server and not a client device. As shown in Figure 1, proxy server 6 (i) receives requests from client devices 14,16 and (ii) sends requests to web server 32. If a POSA were to apply the purely role-based constructions, in my opinion, proxy server 6 would be (i)

operating in the role of a server when receiving requests from client devices 14,16 and (ii) operating in the role of a client when sending requests to web server 32.

113. Additionally, proxy server 6 (iii) receives a response from web server 32 and (iv) sends the received response from web server 32 to client devices 14,16. If a POSA were to apply the purely role-based constructions, in my opinion, proxy server 6 would be (iii) operating in the role of a client when receiving responses from web server 32 and (iv) operating in the role of a server when sending the received responses on to client devices 14,16.

b. REVIEW OF FIGURE 3

114. Figure 3 is an exemplary inventive embodiment. EX. 1001 at 4:3-5. Figure 3 shows agent 122 between client 102 and web server 152. In my opinion, a POSA would understand that client 102 is a client device and not a server; and a POSA would understand that web server 152 is a server and not a client device.

115. If a POSA were to apply the purely role-based constructions, in my opinion, client 102 is operating in the role of a client and web server 152 is operating in the role of a server.

116. In Figure 3, the exemplary intermediary is agent 122. In my opinion, a POSA would understand that agent 122 is a client device and not a server.

117. As shown in Figure 3, agent 122 (i) receives requests from client devices and (ii) sends requests to web server 152. If a POSA were to apply the

purely role-based constructions, in my opinion, agent 122 would be (i) operating in the role of a server when receiving requests from client device 102 and (ii) operating in the role of a client when sending requests to web server 152.

118. Additionally, agent 122 (iii) receives a response from web server 152 and (iv) sends the received response from web server 152 to client device 102. If a POSA were to apply the purely role-based constructions, in my opinion, agent 122 would be (iii) operating in the role of a client when receiving responses from web server 152 and (iv) operating in the role of a server when sending the received responses on to client device 102.

*c. **COMPARISON OF FIGURES 1 AND 3***

119. If a POSA were to apply the purely role-based constructions, proxy server 6 (in Figure 1) and agent 122 (in Figure 3) would be operating in the same roles at a given point in time. If one were to apply the purely role-based constructions, there is nothing to distinguish the intermediary in Figure 1 and Figure 3. Therefore, in my opinion, a POSA would understand that proxy server 6 must be structurally different from agent 122, consistent with Patent Owner's proposed constructions, discussed below. In my opinion, these figures inform a POSA that a server is not a client device and that a client device is not a server. That is, proxy server 6 is not the same as agent 122 and vice versa.

120. In my opinion, proxy server 6 of Figure 1 (prior art) must be structurally different from agent 122 of Figure 3 (inventive embodiment) because, as discussed above, proxy server 6 and agent 122 would be operating in the same roles at a given moment in time. Therefore, in my opinion, the purely role-based constructions are not appropriate because they fail to account for these structural differences between proxy servers and proxy client devices.

***6. PURELY ROLE-BASED CONSTRUCTIONS CONTRADICT
THE APPLICANT'S PROSECUTION HISTORY
STATEMENTS***

121. In my opinion, the purely role-based constructions ignore the applicant's prosecution history statements, discussed in detail below. In my opinion, based on these statements, a POSA would understand a "client device" is not a "server" and vice versa. In my opinion, a POSA would understand that the determination of whether a component is a "client device" or a "server" is not based on the role being performed at a given moment in time. In the context of the '826 Patent, it would be improper to call one component a client device and another identical component a server.

122. In my opinion, my understanding of the structural differences between proxy servers and proxy client devices is consistent with the related prosecution histories discussed below. This understanding is also consistent with the Court's Teso Alice Order acknowledging the non-traditional use of client devices in a

specific architecture makes the methods non-abstract. EX. 2024 at 8-9. This understanding is also consistent with the Court’s Code200 Alice Order acknowledging the specific architecture of specific components operating in a specific way makes the methods non-abstract. EX. 2025 at 8. In my opinion, a POSA would understand that a client device is not the same as a server and vice versa in the context of the ‘826 Patent.

a. PROSECUTION HISTORY OF GREAT – GREAT - GRANDPARENT PATENT NO. 10,069,936

123. The patent prosecution history of the great-great-grandparent ‘936 Patent, clearly distinguishes client devices from servers. During prosecution, the examiner had rejected then-pending claims over the Garcia reference. *See, e.g.*, EX. 2028 at 458. Applicant responded by amending the claims to specify that the ‘devices’ being used as intermediaries are ‘clients’ in contrast to the teachings of Garcia. EX. 2028 at 215. As Applicant stated, the “the ‘device’ was equated in the Garcia reference to the cache server 306, which is clearly **a dedicated device and performs a server functionality**. The Garcia reference is silent, and actually teaches away from identifying and using another client device for supporting a content request by a specific client.” EX. 2028 at 215 (emphasis in original).

124. The examiner responded that the arguments are moot in view of the new ground(s) of rejection. EX. 2028 at 172. The examiner conceded that “Garcia

fails to teach a group of clients for data communication between the web server and a requesting client via one or more clients selected from the group; and (f) the selected client receiving the content from the web server; and (g) the requesting client receiving the content from the selected client.” EX. 2028 at 174. In response, Applicant argued that client devices are different from servers (EX. 2028 at 163-164) and further distinguished the Garcia reference (EX. 2028 at 164-165). The examiner conceded that “Garcia fails to teach a group of clients for data communication; (a) each of the devices sending its identifier to the first server; (b) the first server receiving and storing the identifiers of the devices; (d) the first server selecting one of the clients from the group; and (f) the selected client receiving the content from the web server; and (g) the requesting client receiving the content from the selected client.” EX. 2028 at 124. In response, Applicant again argued that client devices are different from servers (EX. 2028 at 96-97). In the next action, the examiner withdrew rejections based on Garcia and issued new rejections based on other references. EX. 2028 at 77.

125. In my opinion, the examiner recognized a server cannot be equated to a client device regardless of the role being performed at a given moment in time. This understanding is consistent with other statements by Applicant during prosecution as discussed below.

126. Applicant stated that “[t]here is a clear distinction in the art and as taught by the Garcia reference between clients and servers.” EX. 2028 at 163. Applicant stated that “[c]lient devices... are end-units that request information from servers, use client-related software such as Web browser software, communicate over the Internet using ISP connection, and are typically **consumer owned and operated**...” EX. 2028 at 163 (emphasis added). “[A] client device typically connects to the Internet via an ISP using a single connection.” EX. 2028 at 163. “Clients are inherently [re]sources limited, such as in bandwidth and storage capability.” EX. 2028 at 164.

127. Applicant clearly distinguished servers from client devices: “In contrast, server devices are known in the art to be dedicated devices to store information objects, to be provided to clients upon request.” EX. 2028 at 163.

128. In the Notice of Allowance, the examiner acknowledged that “the limitations of the independent claims, **within its environment**, is allowable subject matter over the prior art, in light of the specification”. EX. 2028 at 44 (emphasis added). In my opinion, the examiner’s acknowledgement of the “environment” in which the claims operate shows that the examiner appreciated the unique architecture disclosed in the common specification and the novel use of a proxy client device within that architecture. In contrast, the references relied on and cited by Petitioners do not disclose or render obvious the same architecture, nor do they

disclose or render obvious the claimed methods that operate within that architecture, as further discussed below.

129. In my opinion, upon reviewing the prosecution history of the ‘936 Patent, a POSA would understand that there are structural differences between servers and client devices in the context of the specification.

b. PROSECUTION HISTORY OF GREAT-GRANDPARENT PATENT NO. 10,225,374

130. The patent prosecution history of the great-grandparent ’374 Patent further shows that servers and client devices are not interchangeable general use computers. The ‘374 Patent operates within a **first client device** ↔ **first server** ↔ **second client device** ↔ **second/web server** architecture.

131. The applicant stated that “the claimed invention clearly defines a unique information delivery structure that involves not only content delivery, but also exchange of various identifiers of networked devices.” EX. 2029 at 11.

132. The Applicant also distinguished the claimed invention from the cited primary reference which disclosed peer-to-peer direct communication. EX. 2029 at 14. In my opinion, a POSA would understand that traditional peer-to-peer systems typically consist of client devices and is therefore not the same as the specific **first client device** ↔ **first server** ↔ **second client device** ↔ **second/web server** architecture in which the claimed methods of the ‘374 Patent operate. I note that

the applicant further distinguished that reference because it taught away from obtaining content directly from the web server and instead, suggested accessing client peer devices. EX. 2029 at 15.

133. In the Notice of Allowance, the Examiner agreed that the limitations of the independent claim “within its environment” constitute allowable subject matter. EX. 2029 at 6. In my opinion, the examiner’s acknowledgement of the “environment” in which the claims operate shows that the examiner appreciated the unique architecture disclosed in the common specification and the novel use of a proxy client device within that architecture.

134. In my opinion, upon reviewing the prosecution history of the ‘374 Patent, a POSA would understand that there are structural differences between servers and client devices in the context of the specification.

**c. PROSECUTION HISTORY OF GRANDPARENT
PATENT NO. 10,469,628**

135. The prosecution history of the grandparent ‘628 Patent further shows that servers and client devices are not interchangeable general use computers. The grandparent ‘628 Patent operates within a **first client device** ↔ **first server** ↔ **second client device** ↔ **web server** architecture.

136. During prosecution of the grandparent ‘628 Patent, the applicant expressly distinguished receiving content from a peer node, which is a client

device, as opposed to receiving content from a server. EX. 2003 at 4-5; *see also* EX. 2005 at [0003](“Peer-to-peer network technologies distribute processing and transmission demands among peer clients in the network.”); *see also* EX. 2005 at [0020](explaining Yu’s peer nodes may be implemented on personal computers, laptop computers, etc.).

137. In the Notice of Allowance, the Examiner agreed that the limitations of the independent claim “within its environment” constitute allowable subject matter. EX. 2046 at 6. In my opinion, the examiner’s acknowledgement of the “environment” in which the claims operate shows that the examiner appreciated the unique architecture disclosed in the common specification and the novel use of a proxy client device within that architecture.

138. In my opinion, upon reviewing the prosecution history of the ‘628 Patent, a POSA would understand that there are structural differences between servers and client devices in the context of the specification.

d. PROSECUTION HISTORY OF PARENT PATENT NO. 11,044,341

139. The prosecution history of the parent ‘341 Patent further shows that servers and client devices are not interchangeable general use computers. The parent ‘341 Patent operates within a **first client device** ↔ **first server** ↔ **second client device** ↔ **web server** architecture.

140. During prosecution of the parent ‘341 Patent, the examiner relied on a combination of the Yu and Barth references in a rejection. The applicant explained that Yu discloses a peer-to-peer system using intermediary client devices, while Barth is fetching information from additional servers. EX. 1008 at 124. Applicant clearly distinguished client devices and servers as different types of hardware components, and further distinguished the different architectures of the Yu and Barth references. *See id.*; *see also* EX. 1008 at 125 (Yu is focused on “reducing a load of a server by accessing client peer devices...”).

141. In the Notice of Allowance, the Examiner agreed that the limitations of the independent claim “within its environment” constitute allowable subject matter. EX. 2047 at 7. In my opinion, the examiner’s acknowledgement of the “environment” in which the claims operate shows that the examiner appreciated the unique architecture disclosed in the common specification and the novel use of a proxy client device within that architecture.³

142. In my opinion, upon reviewing the prosecution history of the ‘341 Patent, a POSA would understand that there are structural differences between servers and client devices in the context of the specification.

³ It is noted that amendments were made to correct typographical errors on 3/9/2021, which were initialed and allowed by the examiner on 3/29/2021.

e. PROSECUTION HISTORY OF THE ‘826 PATENT

143. It is noted that the same examiner, Minh Chau Nguyen, reviewed and allowed the patents discussed herein. The examiner was necessarily familiar with the structural distinctions between client devices and servers in the context of the specification. As noted by Petitioner, the examiner already reviewed the prior art references – Kocherlakota, Cohen, and RFC 1122 - during original prosecution of the ‘826 Patent. Petition at 7. The examiner necessarily understood that these references do not disclose or render obvious the limitations of claim 1 of the ‘826 Patent.

f. PROSECUTION HISTORY OF RELATED PATENT NO. 11,190,622 AND REISSUE 18/523,800

144. The related ‘622 Patent operates within a **first client device ↔ first server ↔ first/second web server** architecture.

145. The related ‘622 Patent was previously involved in IPR2022-00687. In that IPR, the Board determined “we need only construe the term “first server” and need not construe the term “client device.” IPR2022-00687, Paper 38 at 10. The Board adopted the district court’s construction for “first server” as “server that is not the client device or the web server.” IPR2022-00687, Paper 38 at 26.⁴ The

⁴ As noted above in section VIII.D.1, the district court’s construction requires the “first server” to be an actual server. The district court recognized that a server is not a communication device and therefore, not a “client device”.

Board stated that “the evidence of record does not support Patent Owner’s position that a “first server” is a “server that is not a client device.” IPR2022-00687, Paper 38 at 15. The Board stated that in view of the claim language, the “first server” need not operate exclusively in the role of a server. IPR2022-00687, Paper 38 at 17. The Board did not find sufficient disclaimer of the scope of the term “first server”. IPR2022-006687, Paper 38 at 25. However, in that IPR, the patentee made clear that client device means “consumer computer”. In my opinion, this constitutes clear and unmistakable disclaimer as to the scope of the term “client device”.

146. I understand that a reissue application No. 18/523,800 was filed on 11/29/2023, which is before the petition was filed in this IPR on 12/5/2023. In a preliminary amendment, patentee noted for purposes of clear lexicography that “client device” means “consumer computer” and that “first server” means a server, which is a type of hardware component as understood by persons skilled in the art, and which is different from a client device, a router, or a switch. EX. 2048 at 13-14. In my opinion, this constitutes clear and unmistakable disclaimer as to the scope of the term “first server”.

147. Therefore, consistent with the above discussion of prosecution histories, a POSA would have understood that the terms “client device” and “first server” refer to different types of hardware in the context of the common

specification and claims. These claim terms do not refer to client/server roles as argued by Petitioner.

g. PROSECUTION HISTORY OF RELATED PATENT NO. 10,257,319

148. The related '319 Patent operates within a **second server** ↔ **first client device** ↔ **first server** architecture.

149. During original prosecution of the '319 Patent, the Applicant stated that “a few types of devices (servers / clients) communicating over a network.” EX. 2049 at 281. The applicant argued that “the claims involve specific networking of physical elements such as servers and clients, connected via various networks forming a specific structure and relationships, which are physical apparatuses, and are NO[T] a ‘generic computer’ as stated in the Action.” EX. 2049 at 282. In addition, the applicant further asserted that “the Examiner does not sufficiently establish that the ‘ordered combination’ of the recited elements also fails to ‘transform the nature of the claim’ into a patent-eligible application.” EX. 2049 at 282. “Specifically, the claimed components as a combination perform functions that are not merely generic – It is respectfully submitted that the conventional arrangement involves fetching data by a client device from a server device, **while the claims disclose a server receiving information from another server via a client device**, which is unique and solves a specific problem such as

anonymity when fetching information.” EX. 2049 at 282-283 (emphasis added). In my opinion, upon reviewing the prosecution history of the ‘319 Patent, a POSA would understand that there are structural differences between servers and client devices in the context of the specification.

150. The related ‘319 Patent was previously involved in IPR2020-01266 where the Board denied institution. In the preliminary response, the patentee expressly stated that the term “client device” means consumer computer. EX. 2050 at 21-22. The patentee also made clear that a “client device” is not a server and that a “second server” is not a client device. EX. 2050 at 18-20, 25. The patentee expressly rejected a purely role-based interpretation of the claim terms in distinguishing the prior art references at issue there. *Id.* In my opinion, these statements by the patentee constitute clear and unmistakable disclaimer as to the scope of the terms client device and server in the common specification.

h. PROSECUTION HISTORY OF RELATED PATENT NO. 10,484,510

151. The related ‘510 Patent operates within a **second server ↔ first client device ↔ first server** architecture.

152. The related ‘510 Patent was previously involved in IPR2020-01358 where the Board denied institution. Like with the ‘319 Patent, the patentee expressly defined the term “client device” as a type of hardware, distinguished

from a server. The patentee expressly rejected purely role-based constructions for the claim terms. EX. 2051 at 20-26. In my opinion, these statements by the patentee constitute clear and unmistakable disclaimer as to the scope of the terms client device and server in the common specification.

7. PURELY ROLE-BASED CONSTRUCTIONS ARE NOT APPROPRIATE

153. For at least the reasons discussed above, in my opinion the purely role-based constructions are not appropriate. The purely role-based constructions do not account for the differences between client devices and servers in the context of the ‘826 Patent. The purely role-based constructions appear to be based on the description of a traditional client-server model and are improperly divorced from the specification.

154. For example, the specification references RFC 2616, but in no way limits the meaning of client device or server to the definitions of “client” and “server” in RFC 2616, which is directed at a request/response protocol in a traditional client-server model. *See* EX. 1001 at 16:21-28 (describing HTTP protocol, defined by RFC 2616, to define HTTP headers). Petitioner’s expert testified that so long as they can perform the functions, the type of device is “immaterial” to RFC 2616. EX. 2006 at 29:10-24. This is directly contrary to the claim terms of the ‘826 Patent. RFC 2616 was not used to define the claim terms

client devices and servers as described in the specification or used in the claims.

Unlike RFC 2616, the specification distinguishes “communication devices” (e.g., client devices) from servers.

155. Additionally, RFC 2616 refers only to the roles being performed at a particular point in time. Petitioner does not consider the role being performed during a particular method step. For example, as discussed above, during limitation [1e] the first server is operating in the role of a client by receiving a response. Because Petitioner does not consider the role being performed during a particular method step, it appears that Petitioner is not using the definitions of client and server from RFC 2616, but rather is using the definition of proxy for both claim terms. As further discussed below, Petitioner’s analysis and application of the purely role-based constructions contradicts RFC 2616.

156. Under the purely role-based constructions, any generic computer ↔ computer ↔ computer architecture includes an intermediary that would satisfy both the requirements of client device and server. The purely role-based constructions broaden these claim terms so as to be interchangeable. The purely role-based constructions are therefore not appropriate in my opinion. As discussed above, the Court has already rejected arguments that the method claims of related patents are abstract because they are more than general purpose computers sending and receiving information. *E.g.*, EX. 2024 at 8-9; EX. 2025 at 7. As found in the

Court's Alice Orders, it is the configuration of the components in a specific architecture used in a specific way that makes the claimed methods non-abstract.

157. In my opinion, with respect to Figs. 1 and 3, there is no way to distinguish an intermediary client device and an intermediary server under the purely role-based constructions. As discussed above with respect to, for example, the '713 and '852 Patents, the "second server" and the "first client device" of those claims are both intermediaries between a requesting client device and a web server. Under the purely role-based constructions, an intermediary would be operating in the role of a client and in the role of a server albeit at different points in time. Under the purely role-based constructions, a POSA would be unable to determine whether an intermediary is a client device or a server because it would meet both constructions. In my opinion, this further shows that the purely role-based constructions are not appropriate.

E. PATENT OWNER'S PROPOSED CONSTRUCTION FOR "CLIENT DEVICE"

158. Based upon the common specification, in my opinion, a POSA would understand the term "client device" to mean a "consumer computer." *See, e.g.,* EX. 1001 at 2:44-46 ("In the network 50, files are stored on computers of consumers, referred to herein as client devices."). Alternatively, a POSA would understand the term "client device" to mean a "consumer communication device". In my opinion,

these proposed constructions are consistent with the claim language, the specification, and the prosecution histories distinguishing servers from client devices.

159. In my opinion, a POSA would understand a client device is a communication device in the context of the specification. This is consistent with the Court’s constructions in the litigations. EX. 1010, EX. 1011, EX. 1013, EX. 2023. As described in the specification, “each communication device may serve as a client, peer, or agent” (EX. 1001 at 4:48-49) which in my opinion, informs a POSA that client 102, peers 112, 114, 116, and agent 122 are all “client devices” in the context of the specification. *See also* EX. 1001 at 4:44-50; 5:21-29. Even if a client device would be “operating in the role of a server” at certain points in time under the purely role-based constructions, that does not transform a client device into a server in the context of the specification and the ‘826 Patent claims. Regardless of the role being performed, a client device is not a server. A client device is a type of hardware, distinguished from a server.

160. The specification discloses HOW a communication device can be configured to serve as a client, agent, or peer. *E.g.*, EX. 1001 at 4:44-50; 5:21-29; *see also id.* at 9:12-50. For example, as discussed above, the specification discloses a **requesting client device** ↔ **proxy server** ↔ **proxy client device** ↔ **web server** architecture which may correspond to client 102 ↔ proxy server 6 ↔ agent 122 ↔

web server 152. A POSA would understand that the disclosed clients, peers, and agents shown in, for example, FIG. 3 are all “client devices” in the context of the specification. the specification also explains a communication device may execute a client module, peer module, and/or agent module shown in FIG. 6. Therefore, in my opinion, A POSA would understand in the context of the specification, a client device is a consumer computer with specific software to operate in accordance with the claims.

161. In the specification, this software is disclosed, for example, in Figure 6 showing acceleration application 220 on communication device 200. Figure 6 and the associated text disclose communication devices having client, peer, and agent modules, but no server module. In my opinion, a POSA would understand from the specification that one “client device” may be configured to be the requesting client device and another “client device” may be configured to be the proxy client device. In my opinion, a POSA would understand the term “client device” to have a consistent definition for either the Requestor or the Proxy. With respect to the modified version of Figure 3 annotated above, in my opinion, a POSA would understand that client 102 may correspond to the requesting client device and that agent 122 may correspond to the proxy client device. Agent 122 is disclosed as a “client device” (as opposed to a server) that is selected, for example,

because agent 122 is closest to the web server 152 (*e.g.*, EX. 1001 at 5:27; *see also id.* at 5:30-34).

162. The specification repeatedly differentiates “client devices” (clients, peers, and agents) and “servers” (proxy servers, acceleration servers, and web servers) as different types of network components. *E.g.*, EX. 1001 at 3:17-28 (describing “client communication device”, “agent communication device”, “peer communication device”), EX. 1001 at 4:41-61 (describing client devices as communication devices operating as clients/peers/agents), EX. 1001 at 4:62-5:34 (describing different servers versus communication devices).⁵

163. Furthermore, the patents use different symbols to distinguish client devices from servers. Whereas all client devices are shown as circles, rounded corner rectangles, or triangles, servers are never shown using those symbols. Instead, the patent uses only cylinder and rhombus shapes for servers, and never uses those shapes for client devices. EX. 1001 at Figs. 1, 2, 3.

164. In the context of the specification, a client device would be understood to be, more specifically, a consumer computer like a laptop, desktop, tablet, or smartphone. *See, e.g.*, EX. 1001 at 2:44-46 (“In the network 50, files are

⁵ *See also* EX. 1001 at 2:40-43 (contrasting client devices from servers), EX. 1001 at 4:43-50 (server not included as communication device), EX. 1001 at 4:6-13 (identifying Figs. 4-6 as illustrating “a communication device of the communication network of FIG. 3”), EX. 1001 at Fig. 6 (showing modules 224, 226, 228 loaded onto a communication device, not a server).

stored on **computers of consumers**, referred to herein as **client devices**.”)(emphasis added). In my opinion, the specification explicitly states that “computers of consumers” are “referred to herein as client devices” and the term “client devices” is used in the claims. *See, e.g.*, EX. 1001 at 2:44-46. Therefore, in my opinion, a POSA would understand a “client device” is a consumer computer in the context of the specification. This understanding is also consistent with statements made by Applicant during prosecution of the application that issued as the ‘936 Patent, discussed above. In my opinion, in the context of the specification, a POSA would understand that a consumer device is distinguished from a commercial device. A POSA would also understand that a consumer device is not a dedicated proxy server.

165. A “consumer” is commonly defined as “a person who buys goods or services for their own use” or “someone who buys goods or services for personal use”. *E.g.*, <https://dictionary.cambridge.org/us/dictionary/english/consumer> (EX. 2030) and EX. 2031 at 5 and EX. 2032 at 4; *E.g.*, <https://www.collinsdictionary.com/us/dictionary/english/consumer> (EX. 2033) and EX. 2034 at 4. This is also consistent with statements made by Applicant during prosecution of the application that issued as the ‘936 Patent, where the applicant stated that client devices are “typically consumer owned and operated.” EX. 2028 at 163.

166. Further, in my opinion, given that the above recited architectures in the claims of related patents distinguish between client devices and servers (e.g. **proxy server** versus **proxy client device**) a POSA would understand that the mere inclusion of three interchangeable general use computers in pathway would not by itself disclose the specific architectures of the claims of related patents. The District Court repeatedly acknowledged that a client device is not merely a general-purpose computer. *E.g.*, EX. 2023 at 14-15 (NetNut C.C. Order referencing prior orders by the same court).

167. In my opinion, the common specification and the claims of related patents distinguish the client devices versus servers. This understanding is consistent with the Code200 Alice Order finding the claimed methods of the ‘511 and ‘968 Patents are not abstract. *E.g.*, EX. 2025 at 8 (“the Court notes that [the claims of the ‘511 and ‘968 Patents] are directed to an architecture comprised of a clients, servers, and web servers configured into an architecture...”). This understanding is also consistent with at least the Teso Alice Order finding the claims of the ’319 and ’510 Patents are not abstract. EX. 2024 at 8-9 (“If the claimed methods in this case were simply the receipt and forwarding of information over the Internet, Teso might have a compelling argument. However, it is the use of non-traditional client devices that transforms the Asserted Claims into non-abstract subject matter.”); *see also* EX. 2025. This understanding is also

consistent with the Court's Claim Construction Orders. EX. 1010, EX. 1011, EX. 1013, and EX. 2023.

168. In my opinion, a POSA would understand that a client device is typically portable and easily moved, like, for example, a laptop, desktop, tablet or smartphone. I also agree with the applicant's statements during prosecution that a client device is not a dedicated network element. By contrast, a server is a dedicated network element, as discussed below. I also agree with the applicant's statements during prosecution that a client device typically uses a single or relatively few connections, unlike a server. I also agree with the applicant's statements during prosecution that a client device is resource limited (e.g., bandwidth and storage), unlike a server.

169. In my opinion, a POSA would understand that a client device is typically understood (a) to be regularly switched off and taken offline; (b) to be capable of processing only a limited number of requests at any given time, which may for example include a single user login; and/or (c) to have lesser fault tolerance, lesser reliability, and lesser scalability, prioritizing value to client device users over system costs. In my opinion, these client device-attributes distinguish a client device from a server.

170. In my opinion, a POSA would understand "client" to be consistent with its plain and ordinary meaning in the context of "client device" discussed

above. A POSA's understanding of client and client device is further evidenced by extrinsic materials with a definition of client as "an application that runs on a personal computer or workstation and relies on a server to perform some operations." EX. 2035; *see also* Tanenbaum, et al., "Fifth Edition Computer Networks", EX. 2036 at 5 ("the employees have simpler machines, called clients, on their desks, with which they access remote data, for example, to include in spreadsheets they are constructing"); *see also* Tanenbaum, "Fourth Edition Computer Networks", EX. 2037 at 7.

171. In my opinion, given the specifications discussion of problems associated with the prior art system of using a proxy server as an intermediary (*e.g.*, EX. 1001 at 2:8-39) a POSA would NOT consider a proxy client device to encompass a proxy server.

172. In my opinion, a POSA would understand there are structural differences between client devices and servers in the context of the specification and I have seen no contradictory disclosure in the specification or in the prosecution histories. Rather, client devices are repeatedly distinguished from servers in the specification and the prosecution histories.

F. PATENT OWNER’S PROPOSED CONSTRUCTION FOR “FIRST SERVER”

173. As discussed above, the claim language itself distinguishes client devices and servers. The specification also distinguishes client devices and servers. A POSA would understand that the mere inclusion of interchangeable general-purpose computers in a pathway such as a generic computer ↔ computer ↔ computer architecture would not by itself disclose the architecture of the claimed methods. In the context of the specification, it would be improper to call one component a client device and another identical component a server. There are many prosecution history statements that client devices and servers are different physical elements, they are different types of network components. In allowing the issued claims, the examiner found that client devices are distinguished from servers.

174. The Court has repeatedly acknowledged that a server is not a communication device. *E.g.*, EX. 1010 at 12. Even if a server would be “operating in the role of a client” at certain points in time under the purely role-based constructions, that does not transform a server into a communication device in the context of the specification. Regardless of the role being performed, a server is not a communication device.

175. In my opinion, the “first server” is separate and distinct from the “first client device” of the claims, consistent with the Court’s constructions. In my

opinion, a server is structurally different from a client device as disclosed in the specification or recited in the patent claims. As discussed above comparing Figures 1 and 3, a POSA would understand that a proxy client device is structurally different from a proxy server. In my opinion, a POSA would understand that agent 122 of Figure 3 is not the same as proxy server 6 of Figure 1.

176. In my opinion, a POSA would understand the “first server” recited in the claims to be a “server that is not a client device”. This proposed construction is consistent with the claim language, the specification, and the prosecution histories distinguishing servers from client devices. A POSA would understand that, in general, a “server” is not a “client device” in the context of the specification. For example, the Court construed “client device” as a communication device in the litigations. Based on the Court’s construction for “client device”, a server is not a client device at least in part because a server is not a communication device.

177. In my opinion, a POSA would have been familiar with a server hardware component, and a POSA would have understood in the context of the ‘826 Patent that a server is not a client device, a router, or a switch.

178. In my opinion, a POSA would understand that a server is not a consumer computer. A POSA would consider a server to be a commercial network element, rather than a consumer device. A POSA would understand that, unlike a client device, a server is not portable or moved about by a consumer. I also agree

with the applicant's statements during prosecution that a server is a dedicated network element, unlike a client device. I also agree with the applicant's statements during prosecution that a server is typically capable of a large number of connections, unlike a typical client device.

179. Further, in my opinion, a POSA would understand a server (a) to remain online with greater availability and maximum up time to receive requests almost all of the time (switching off servers can be catastrophic to a network); (b) to efficiently process multiple requests from multiple client devices at the same time; (c) to generate various logs associated with the client devices and traffic from/to the client devices; (d) to primarily interface and respond to the client devices, oftentimes without a Graphical User Interface ("GUI"); (e) to have greater fault tolerance and higher reliability with lower failure rates; and/or (f) to provide scalability for increasing resources to serve increasing client demands. These server-attributes distinguish a server from a client device.

180. A POSA's understanding of server is further evidenced by extrinsic materials with a definition of server as "A computer or device on a network that manages network resources. Servers are often dedicated, meaning that they perform no other tasks besides their server tasks." EX. 2035; *see also* Tanenbaum, et al., "Fifth Edition Computer Networks", EX. 2036 at 5 ("data are stored on powerful computers called servers") and EX. 2036 at 6 ("one server can handle a

large number (hundreds or thousands) of clients simultaneously”); *see also*

Tanenbaum, “Fourth Edition Computer Networks”, EX. 2037 at 7.

181. To the extent that the Board’s constructions are intended to construe any intermediary computer operating in a **computer ↔ computer ↔ computer** architecture as both a client and server, as discussed above, such construction is inconsistent with the disclosure in the ‘826 Patent, the patent prosecution histories, and the Court’s Orders in the litigations. A POSA would NOT understand the recited client devices and servers to be merely interchangeable general use computers.

IX. INTRODUCTION TO PETITIONER’S ANALYSIS IN THE GROUNDS

A. ANALYSIS OF THE PURELY ROLE-BASED CONSTRUCTIONS IN VIEW OF THE HTTP DEFINITIVE GUIDE

182. The HTTP Definitive Guide (EX. 1023) includes a figure (reproduced below) showing a three-level proxy hierarchy. EX. 1023 at 159/658; EX. 1002 at ¶38.

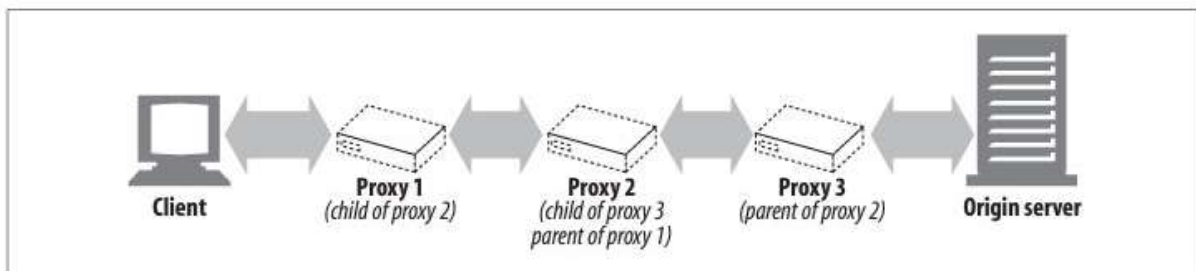


Figure 6-12. Three-level proxy hierarchy

183. Petitioner's expert agreed that the client is always acting like a client. EX. 2013 at 9:16-11:4. Petitioner's expert agreed that proxy 1 acts like a server with respect to the client and acts like a client with respect to proxy 2. *Id.* Petitioner's expert agreed that proxy 2 acts like a server with respect to proxy 1 and acts like a client with respect to proxy 3. *Id.* Petitioner's expert agreed that proxy 3 acts like a server with respect to proxy 2 and acts like a client with respect to the origin server. *Id.* Petitioner's expert agreed that the origin server is always acting like a server. *Id.*

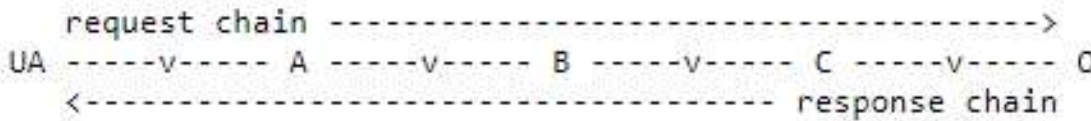
184. Based on this testimony, it is clear that the intermediary proxies perform both client/server roles at different points in time for different connections. For example, proxy 1 is always acting like a server with respect to the client and proxy 1 is always acting like a client with respect to proxy 2.

185. Based on Petitioner's analysis, proxy 1 would meet both of Petitioner's constructions for "client device" and "first server". This shows that Petitioner's constructions cannot be correct.

B. ANALYSIS OF THE PURELY ROLE-BASED CONSTRUCTIONS IN VIEW OF RFC 2616

186. RFC 2616 includes a figure (reproduced below) showing user agent (A), intermediaries (A,B,C) and origin server (O). EX. 1005 at 10; *see also* EX.

1002 at ¶42. This figure also shows a single connection (v) between each of those components.



187. Looking at the particular connection between UA and A, the figure shows UA sends a request to A. At that point in time, under the purely role-based constructions, UA is operating in the role of a client and A is operating in the role of a server. Petitioner's expert agreed. EX. 2006 at 22:17-23:1 and 25:9-19.

188. Looking at the particular connection between A and B, the figure shows A sends a request to B. At that point in time, under the purely role-based constructions, A is operating in the role of a client and B is operating in the role of a server. Petitioner's expert agreed. EX. 2006 at 26:1-12.

189. Looking at the particular connection between B and C, the figure shows B sends a request to C. At that point in time, under the purely role-based constructions, B is operating in the role of a client and C is operating in the role of a server. Petitioner's expert agreed. EX. 2006 at 26:19-27:5.

190. Looking at the particular connection between C and O, the figure shows C sends a request to O. At that point in time, under the purely role-based constructions, C is operating in the role of a client and O is operating in the role of a server. Petitioner's expert agreed. EX. 2006 at 27:19-28:4.

191. Looking at the reverse pathway, for the particular connection between C and O, the figure shows O sends a response to C. At that point in time, under the purely role-based constructions, O is operating in the role of a server and C is operating in the role of a client. Petitioner's expert agreed. EX. 2006 at 30:21-31:9.

192. Looking at the particular connection between B and C, the figure shows C sends a response to B. At that point in time, under the purely role-based constructions, C is operating in the role of a server and B is operating in the role of a client. Petitioner's expert agreed. EX. 2006 at 31:10-31:21.

193. Looking at the particular connection between A and B, the figure shows B sends a response to A. At that point in time, under the purely role-based constructions, B is operating in the role of a server and A is operating in the role of a client. Petitioner's expert agreed. EX. 2006 at 31:22-32:2.

194. Looking at the particular connection between UA and A, the figure shows A sends a response to UA. At that point in time, under the purely role-based constructions, A is operating in the role of a server and UA is operating in the role of a client. Petitioner's expert agreed. EX. 2006 at 32:3-6.

195. As shown above, intermediaries A, B, and C operate in different roles at different points in time. Petitioner's expert agreed that receiving a packet and sending a packet are different points in time. EX. 2006 at 32:15-33:3. Petitioner's

expert agreed that an intermediary is acting as a client and acting as a server at different points in time. EX. 2006 at 32:15-33:3; *see also id.* at 33:4-15.

C. PETITIONER'S APPLICATION OF THE PURELY ROLE-BASED CONSTRUCTIONS CONTRADICTS RFC 2616

196. As further discussed below, Petitioner's application of the purely role-based constructions to Kocherlakota and Cohen contradicts the RFC 2616. RFC 2616 defines "proxy" as an "intermediary program which acts as both a server and a client." EX. 1005 at 9. RFC 2616 defines "server" as an "application program that accepts connections in order to service requests by sending back responses" and RFC 2616 defines "client" as a "program that establishes connections for the purpose of sending requests". EX. 1005 at 8. Petitioner's expert testified that RFC 2616 confirmed his understanding of how a POSA would view the terms "client" and "server." EX. 2006 at 16:13-22.

197. RFC 2616 explains that "our use of these terms [server and client] refers only to the role being performed by the program **for a particular connection.**" EX. 1005 at 8 (emphasis added). The definitions in RFC 2616, referring only to the role being performed for a particular connection, actually supports my criticism of the purely role-based constructions where an intermediary may be operating in different roles at different points in time for different connections. Petitioner ignores the different roles being performed at different

points in time for different connections in order to improperly map the prior art onto the claims.

198. If applied consistently with the teachings of RFC 2616, which Petitioner advocates, the role-based constructions **must** be analyzed at a particular point in time for a particular connection. Based on his deposition testimony, it appears that Petitioner's expert agrees. EX. 2006 at 126:7-16 ("it's important that it have the capability and can work at it and does work at it at a particular time"). As discussed above, the purely role-based constructions contradict the express language and for at least this reason, they are not appropriate in the context of the '826 Patent.

199. Instead of using the definitions of client and server in RFC 2616, which Petitioner advocates, it appears that Petitioner is actually using the definition of "proxy" in RFC 2616. EX. 1005 at 9. RFC 2616 defines "proxy" as "[a]n intermediary program which acts as both a server and a client for the purpose of making requests on behalf of other clients." EX. 1005 at 9. Because Petitioner does not require the client/server to operate exclusively in client/server roles, Petitioner is using the definition of proxy which operates in both client/server roles at different points in time for different connections. Petitioner is attempting to use the definition of proxy in RFC 2616 for both constructions of both claim terms. This is improper in the context of the '826 Patent and contradicts the express claim

language. Petitioner’s interpretation fails to distinguish an intermediary client device from an intermediary server.

D. PETITIONER’S ANALYSIS FAILS UNDER EITHER SET OF CONSTRUCTIONS

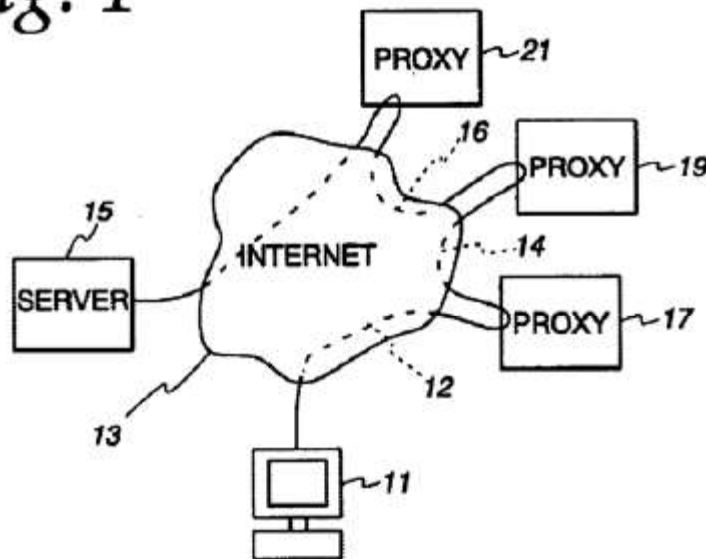
200. As discussed above, in my opinion, the purely role-based constructions of “client device” and “first server” are not appropriate. Even so, under the purely role-based constructions, neither Kocherlakota nor Cohen not disclose or render obvious each and every limitation of claim 1 of the ‘826 Patent as discussed below.

201. Petitioner does not address Patent Owner’s proposed constructions. Therefore, if the Board adopts Patent Owner’s proposed constructions, all grounds must fail.

X. OVERVIEW OF KOCHERLAKOTA

202. I agree with Dr. Rhyne’s summary of Kocherlakota (EX. 1003) in his declaration previously submitted in in IPR2021-00122 as EX. 2006.

203. Kocherlakota discloses “[m]ethods and apparatus for establishing internet communication from a user to a server through a plurality of proxy servers...” EX. 1003, Abstract. Fig. 1 of Kocherlakota is reproduced below:

Fig. 1

204. In Kocherlakota, “[c]lient 11 desires to take advantage of services provided by a plurality of web proxies.” EX. 1003 at 2:61-63. “For example, the client wants to be anonymous so a connection via anonymity web proxy 17 is desirable. Also, the client would like to search in the French language and therefore wants to take advantage of the language service provided by a French language web proxy 19. Lastly, the client would like to reduce the amount of time spent retrieving data so the services of a wait limiting proxy 21 are desired.” EX. 1003 at 2:63-3:3.

205. Kocherlakota also discloses that “[t]he client first sends out the URL of the first proxy server for anonymity servers...” EX. 1003 at 3:20-21. “If [] the client wants to use a second proxy server, e.g., 19, the URL, port, user name and password for the proxy server are entered into lines 209, 211, 213 and 215 of the

applet window of FIG. 2 before the OK button is checked.” EX. 1003 at 3:41-45.

“Similarly, if the client wants a third chained proxy, the URL, port, user name and password for the third proxy server are entered into information lines 217, 219, 221 and 223 of FIG. 2.” EX. 2003 at 3:45-48.

206. Kocherlakota also discloses that “[a]fter the proxy chain has been established, the URL of web server 15, or any other web server, can be sent from the client to the internet via the chained proxies 17, 19 and 21.” EX. 1003 at 4:28-31.

207. In my opinion, the architecture disclosed in Kocherlakota is: client ↔ first proxy server ↔ second proxy server ↔ third proxy server ↔ web server

XI. GROUND 1: KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS CLAIM 1 OF THE ‘826 PATENT

208. As discussed above, in my opinion, the purely role-based constructions of “client device” and “first server” are not appropriate. Even so, under the purely role-based constructions, in my opinion, Kocherlakota does not disclose or render obvious each and every limitation of claim 1 of the ‘826 Patent as discussed below.

209. Petitioner does not address Patent Owner’s proposed constructions. Therefore, if the Board adopts Patent Owner’s proposed constructions, the Kocherlakota-based grounds must fail.

210. Moreover, in my opinion, under either set of constructions, Kocherlakota does not disclose or render obvious each and every limitation of claim 1 of the ‘622 Patent as also discussed below.

211. Petitioner provides no analysis showing that RFC 1122 would cure these deficiencies.

A. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS THE PREAMBLE OF CLAIM 1 UNDER PURELY ROLE-BASED CONSTRUCTIONS

212. The preamble of claim 1 recites a “first server”. Petitioner alleges that proxy server 17 corresponds to the “first server”. Petition at 28. In my opinion, Kocherlakota does not disclose a “first server” as recited in the preamble of claim 1 under the purely role-based constructions. Based on Petitioner’s analysis, Petitioner is using hindsight bias to deem proxy server 17 a server.

213. During the method steps recited in limitations 1b and 1f, proxy server 17 is operating in the role of a server under the purely role-based constructions. During the method steps recited in limitations 1d and 1e, proxy server 17 is operating in the role of a client under the purely role-based constructions. Therefore, proxy server 17 would meet both of Petitioner’s constructions for the disputed claim terms. Petitioner fails to establish that proxy server 17 is a server as opposed to a client device under the purely role-based constructions.

214. In my opinion, the claimed “first server” is necessarily and consistently a server during the performance of method claim 1. For at least this reason, in my opinion, Kocherlakota does not disclose or render obvious the preamble of claim 1 under the purely role-based constructions.

B. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS LIMITATION 1D OF CLAIM 1 UNDER PURELY ROLE-BASED CONSTRUCTIONS

215. Limitation 1d of claim 1 of the ‘826 Patent recites the first server “sending... the first content identifier....” Petitioner alleges that proxy server 17 corresponds to the “first server” of claim 1 and that proxy server 17 forwards the URL through the proxy chain. Petition at 28 and 32.

216. In my opinion, Kocherlakota does not disclose the “first server” sending the first content identifier as recited in claim 1. In my opinion, Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection, recited in limitation 1d of claim 1.

217. In my opinion, under the purely role-based constructions, when proxy server 17 sends a request, proxy server 17 is operating in the role of a client, not a server. Therefore, under the purely role-based constructions, proxy server 17 cannot be a server during performance of this method step. Proxy server 17 is not operating in the role of a server and therefore does not meet Petitioner’s construction for “first server” during performance of this method step.

218. For at least this reason, in my opinion, Kocherlakota does not disclose or render obvious claim 1 of the ‘826 Patent under the purely role-based constructions for “client device” and “first server.”

C. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS LIMITATION 1E OF CLAIM 1 UNDER PURELY ROLE-BASED CONSTRUCTIONS

219. Limitation 1e of claim 1 of the ‘826 Patent recites the first server “receiving... the first content from the web server...” Petitioner alleges that proxy server 17 receives the first content from the web server 15. Petition at 34-35.

220. In my opinion, Kocherlakota does not disclose or render obvious a “first server” receiving the first content from a web server as recited in claim 1. In my opinion, Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection, recited in limitation 1e of claim 1.

221. In my opinion, under the purely role-based constructions, when proxy server 17 receives a response, proxy server 17 is operating in the role of a client, not a server. Therefore, proxy server 17 cannot be a server during performance of this method step. Proxy server 17 is not operating in the role of a server and therefore does not meet Petitioner’s construction for “first server” during performance of this method step.

222. For at least this reason, in my opinion, Kocherlakota does not disclose or render obvious claim 1 of the '826 Patent under the purely role-based constructions for “client device” and “first server”.

D. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS THE PREAMBLE OF CLAIM 1 UNDER EITHER SET OF CONSTRUCTIONS

223. The preamble of claim 1 recites “a list of IP addresses stored in the first server”. Petitioner alleges that proxy server 17 must store a list of IP addresses associated with proxies 19 and 21. Petition at 28. Petitioner alleges that in order for proxy server 17 to establish and maintain sessions with proxies 19 and 21, proxy 17 would have to store the IP address corresponding to the domain name (e.g., “french.com,” “fast.com”) the user enters for proxies 19 and 21. Petition at 21.

224. A POSA would understand that information about the proxies would be stored at client computer 11, not proxy server 17. Kocherlakota discloses that “[b]efore the actual sequential use of the multiple proxies, the client will have visited each directly and established any necessary relationship during the visits.” EX. 1003 at 3:12-14. “It is likely that each proxy server will have stored session information **in the client computer** for future use.” EX. 1003 at 3:14-16 (emphasis added). “Such session information may be in the nature of a cookie which is **set in the client computer 11** by means well known in the art.” EX. 1003 at 3:16-18

(emphasis added). “The session information and permission information will remain **stored at the client computer.**” EX. 1003 at 3:18-20 (emphasis added).

225. A POSA would understand that the applet information and relevant session information is sent from client computer 11 to proxy server 17. If the client wants to use a proxy server, the URL, port, user name, and password for that proxy server are entered into the applet window of FIG. 2. EX. 1003 at 3:37-48.

Kocherlakota discloses “[a]t the completion of data entry to the applet window of FIG. 2, the client clicks the OK button 225, which causes the applet to access the session information (cookie) associated with each named proxy server and returns the cookies and all entered information to the first proxy.” EX. 1003 at 3:61-65. A session is established between the client and proxy 17. EX. 1003 at 3:21-24. The proxy server 17 analyzes the applet information and establishes a session “using the client provided applet response information for the second proxy as well as the cookie from the client computer 17 [sic -11] relating to french.com”. EX. 1003 at 4:1-8. “The third proxy server begins a session from the client which is linked through the first proxy server 17 and second proxy server 19.” EX. 1003 at 4:18-21.

226. Therefore, in my opinion, there is no DNS resolution performed by proxy server 17 as alleged by Petitioner. All relevant information is stored in and sent from client computer 11 to proxy server 17 in order to establish the sessions

and form the proxy chain. Kocherlakota discloses client computer 11 will “contemporaneously establish sessions through a plurality of proxies so that multiple proxy services may be used for the same communication.” EX. 1003 at 1:55-57. Therefore, a POSA would understand that when client computer 11 establishes a session with the proxy servers, each server will generate a cookie and store that cookie on the client computer.

227. Claim 1 of Kocherlakota also makes clear that the client provides “data identifying a second proxy server and client permission data associated therewith” to proxy server 17. Further, that the client transmits the data identifying the second proxy server and the client permission data to the first proxy server, i.e., proxy server 17.

228. Once the sessions are established, the sessions are maintained for a particular communication. See, e.g., step 125 of FIG. 5; EX. 1003 at 1:55-57. There is nothing in Kocherlakota to suggest that proxy server 17 must also subsequently store those IP addresses for re-use. *Contra* Petition at 26. Instead, the client would sent new information to the proxy server 17 for a new proxy chain.

229. In view of the above, it is clear that client computer 11 stores information about the proxy servers, not proxy server 17. Petitioner therefore fails to establish that proxy server 17 stores a list of IP addresses as required by claim 1a.

**E. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER
OBVIOUS LIMITATION 1C OF CLAIM 1 UNDER EITHER SET
OF CONSTRUCTIONS**

230. Limitation 1c of claim 1 recites “selecting, an IP address from the list according to a criterion”. Petitioner alleges that upon receiving the first URL, proxy server 17 selects the IP address of either proxy server 19 or proxy server 21 from the list of IP addresses to route the URL through the proxy chain. Petition at 31-32. Petition argues that this alleged selection is “according to a criterion” because the selection of the URL is based on analysis of the URL. Petition at 31.

231. Kocherlakota does not disclose or render obvious proxy server 17 performs any “selecting”. Proxy server 17 is not choosing proxy server 19 in favor of proxy server 21. There is only one option and as such, there is no choice. This is consistent with Petitioner’s expert’s testimony discussed above in section VIII.B.

232. First, Kocherlakota discloses that the selection of proxy servers in the proxy chain is NOT performed by proxy server 17. The selection of proxies in the chain occurs when the client enters identities of proxies in the applet. See EX. 1003 at 3:30; *see also* Figs. 2 and 7. Therefore, proxy server 17 is not performing a selection of proxy servers.

233. Second, Kocherlakota discloses that the selection of features of proxy servers in the proxy chain is NOT performed by proxy server 17. The selection of which features of which proxies are to be used for a particular URL occurs when

the client enters information in the applet. Therefore, proxy server 17 is not performing a selection of services.

234. Ultimately, proxy server 17 does not “select” a proxy server, but merely applies an applet where the selection has already been pre-defined. There is no choice made by proxy server 17. There is only one pre-defined option.

1. SELECTION OF PROXY SERVERS IN THE PROXY CHAIN

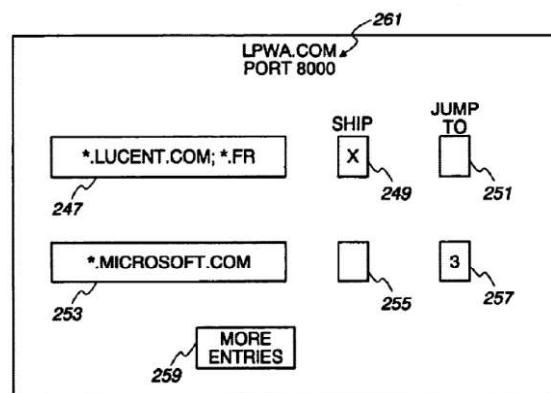
235. Kocherlakota teaches that the client wants to take advantage of the anonymity, French language, and wait avoidance features offered by proxies 17, 19, and 21, respectively. EX. 1003 at 2:63-3:3 and 4:32-35. Kocherlakota teaches that client 11 visits each proxy server directly and establishes any necessary relationship during the visits. EX. 1003 at 3:10-20. An “applet” is used to provide information associated with the visited proxy servers. EX. 1003 at 3:24-33 and Fig. 2. The applet is sent to a first of the proxy servers, e.g., proxy server 17. EX. 1003 at 3:66-67. Upon receiving the applet (not the request comprising the first/second URLs), proxy server 17 analyzes the applet information and contacts the named proxy servers to form the proxy chain. EX. 1003 at 3:66-4:4 and 4:9-11.

236. The selection of proxies in the chain occurs when the client enters identities of proxies in the applet. See EX. 1003 at 3:30; *see also* Figs. 2 and 7. Therefore, proxy server 17 is not performing selection of proxies in the chain.

2. SELECTION OF WHICH FEATURES OF WHICH PROXY SERVERS ARE TO BE USED FOR A PARTICULAR URL

237. As discussed above, the applet includes information associated with each proxy server in the proxy chain. In more detail, the applet contains information, including the data shown in FIG. 2 of Kocherlakota, such as URLs, port numbers, user names and passwords (EX. 1003 at 3:26-37), as well as “advanced features” shown in Fig. 7 of Kocherlakota, such as URLs (as that term is used in Kocherlakota) for which a particular proxy is to be skipped or jumped (EX. 1003 at 5:8-13). Specifically, Fig. 7 shows URLs (e.g., 247, 253) in a text window and an indication of whether the first proxy (e.g., 261) is to be “skipped” (e.g., 249, 255) or “jump to” another proxy (e.g., 251, 257) for the particular URL (EX. 1003 at 4:63-5:26). Thus, the received applet defines which features are to be employed for predetermined URLs. Id.; see also id. at 4:32-35.

Fig. 7



238. The selection of which features of which proxies are to be used for a particular URL is indicated in the applet. *See, e.g.,* Fig. 6.

239. Because the desired features are not determined by proxy server 17, there is no selection of proxy features performed by proxy server 17. The selection of which features of which proxies are to be used for a particular URL occurs when the client enters information in the applet.

3. PROXY SERVER 17 DOES NOT SELECT A PROXY SERVER, BUT MERELY APPLIES AN APPLLET

240. Kocherlakota teaches that the established proxy chain includes proxy server 17, proxy server 19, and proxy server 21. Once an internet request is received by proxy server 17, there is no teaching in Kocherlakota that proxy server 17 “selects” a particular proxy server for a particular URL as recited in claim 1. Proxy server 17 does not “select” from the potential proxy servers 19 and 21. Proxy server 17 merely applies the applet. That is, the choice has already been made. There is only one option pre-defined for proxy server 17. As such, there is no selecting performed by proxy server 17.

241. **Default Pathway:** Petitioner’s expert agrees that the default pathway, where a URL does not match the criteria in text windows 247 or 253 of FIG. 7, the request passes via the chained proxy servers 17, 19, and 21. EX. 2013 at 67:2-17. There is no selecting of proxy server 19 in this case. That is the only option. The

pathway will be client computer 11 ↔ proxy server 17 ↔ proxy server 19 ↔ proxy server 21 ↔ web server 15.

242. **Skip Pathway:** Petitioner's expert agrees that even if the features/services of proxy server 19 are to be "skipped" when the URL matches the criteria in text window 247 of FIG. 7, the request will still pass through proxy server 19. EX. 2013 at 64:4-16. There is no selecting of proxy server 19 in this case. That is the only option. The pathway will be client computer 11 ↔ proxy server 17 ↔ proxy server 19 ↔ proxy server 21 ↔ web server 15.

243. Figure 7 relates to the first proxy, e.g., proxy server 17. EX. 1003 at 5:4. As described, "when a URL matching *.fr is transmitted to the first proxy, the services of that proxy are to be skipped as defined by the "x" in box 249." EX. 1003 at 5:18-21 (emphasis added). Therefore, the features of proxy server 17 are skipped because the client does not wish to take advantage of the anonymity features of the proxy server 17 for the URL matching *.fr. *See* EX. 1003 at 2:63-64. Nonetheless, the internet request is still sent through proxy servers 17, 19, and 21. Petitioner's expert agreed. EX. 2006 at 64:5-14; 65:1-20; 78:17-79:10. In my opinion, a POSA would understand that the request is sent from proxy server 17 to proxy server 19 because of the earlier selections made in the applet. In my opinion, proxy server 17 did not "select" proxy server 19.

244. In my opinion, regardless of whether the “skip” functionality is used, there is no selection performed by proxy server 17. The request simply passes through proxy servers 17, 19, and 21 as part of the established proxy chain. Proxy server 17 does not “select” proxy server 19 as opposed to proxy server 21. Proxy server 17 merely applies the applet for the particular URL.

245. In my opinion, Petitioner fails to show that proxy server 17 “selects” proxy server 19 as opposed to proxy server 21. That selection was made earlier in the applet. There is no choice for proxy server 17 to make.

246. **Jump Pathway:** Petitioner’s expert agrees that if the “jump to” function for a URL that matches the criteria in text window 253 of FIG. 7, the request will not pass through proxy server 19. EX. 2013 at 65:3-20. There is no selecting of proxy server 21 in this case. That is the only option. The choice has already been made and defined in the applet that is applied by proxy server 17. The pathway will be client computer 11 ↔ proxy server 17 ↔ proxy server 21 ↔ web server 15.

247. As shown in Figure 7 and described by Kocherlakota, “whenever a URL of *.companyx.com is sent to the first proxy, the first proxy will skip the second proxy and jump to the third proxy because the number 3 is entered into the jump to box 251.” EX. 1003 at 5:21-24. Specifically, Figure 7 shows the URL

*.microsoft.com in text window 253. In my opinion, proxy server 17 does not “select” proxy server 21, but merely applies the applet for the particular URL.

248. In my opinion, Petitioner fails to show that proxy server 17 “selects” proxy server 21 as opposed to proxy server 19. That selection was made earlier in the applet. There is no choice for proxy server 17 to make.

249. For at least the reasons discussed above, a POSA would understand that the selection of which proxies and which features of the proxies are to be used for a particular URL is NOT performed by proxy server 17. Rather, the client makes this selection in the applet. Proxy server 17 merely applies the applet. Proxy sever 17 does not make any choice – the decision has already been made. In my opinion, proxy server 17 does not perform the “selecting” steps recited in limitations 1c of claim 1. For example, there is no disclosure in Kocherlakota regarding any intelligent selection by proxy server 17. There is no disclosure of any choice to be made by proxy server 17.

250. In contrast, the disclosure of the ‘622 Patent shows that the “selecting” of an IP address requires some intelligent decision-making by the first server to determine, for example, the numerical closeness of the possible proxy IP addresses relative to the destination web server. *See, e.g.*, EX. 1001 at 13:25-29. Although the first server may be instructed to determine, for example, which proxy IP address is numerically close to the IP address of the destination web server, this

still requires some intelligent decision-making by the first server in performing the “selecting” steps by evaluating the possible proxy IP addresses. In my opinion, there is no such decision-making by the proxy server 17 of Kocherlakota.

251. For at least these reasons, in my opinion, Kocherlakota does not disclose or render obvious limitation 1c of claim 1 of the ‘826 Patent.

XII. GROUND 1: KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS THE CHALLENGED, DEPENDENT CLAIMS UNDER EITHER SET OF CONSTRUCTIONS

252. Because Kocherlakota does not disclose or render obvious independent claim 1 for the reasons discussed above, Kocherlakota does not disclose or render obvious dependent claims 2-5, 10, 12, 15-19, or 21-25 of the ‘826 Patent under either set of constructions. *See* Ground 1. I understand that a dependent claim incorporates all of the limitations of the preceding claim(s) from which it depends.

A. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS USING AN INTERMEDIARY CLIENT DEVICE AS RECITED IN DEPENDENT CLAIMS 2-5, 12, AND 18

253. Claim 2 depends from claim 1 and recites “for use with a second client device that is addressable in the Internet using the selected IP address.” Petitioner alleges that “proxy 19 and proxy 21 each meet the construction of “second client device.” Petition at 36. This analysis is not sufficiently clear. Even

so, neither proxy 19 nor proxy 21 correspond to the claimed second client device as further discussed below.

254. Claims 3-5 depend from claim 2. Petitioner alleges that proxy server 19 corresponds to the second client device. Petition at 37-39. I disagree.

255. Claim 12 depend from claim 10 and recites “wherein the criterion is based on, or comprises, a geographical location of a client device addressed by the selected IP address, or a response time when communicating with the client device addressed by the selected IP address”. Petition relies on proxy server 19 as corresponding to the client device addressed by the selected IP address. Petition at 40. I disagree.

256. Claim 18 depends from claim 1 and recites “for use with a plurality of client devices that includes a second client device”. Petitioner relies on proxies 19 and 21 as corresponding to the plurality of client devices. Petition at 43-44. I disagree.

1. PETITIONER’S ANALYSIS FAILS UNDER THE PURELY ROLE-BASED CONSTRUCTIONS

257. As discussed above, a POSA would not be able to distinguish an intermediary client device from an intermediary server under the purely role-based constructions. Intermediary proxy servers 17, 19, 21 are operating in different roles at different points in time. Petitioner’s expert agreed. EX. 2006 at 82:23-84:1.

Petitioner's expert confirmed that proxy servers 17, 19, 21 perform both client server roles and meet both constructions. EX. 2013 at 73:16-74:14.

258. Petitioner does not consistently analyze the proxy servers of Kocherlakota. All of the proxy servers 17, 19, 21 are intermediaries that perform both client server roles and meet both constructions. Therefore, Petitioner is using hindsight bias in deeming one proxy server a server another identical proxy server a client device.

259. In my opinion, Petitioner's analysis of proxy servers 17, 19, and 21 is inconsistent. Petitioner argues that proxy server 17 "meets the construction of "first server" because it is a device operating in the role of a server by accepting a connection from client computer 11 to service requests (URL's) by sending back responses (content from the web server) and because it is not the same physical device as client computer 11." Petition at 28. Applying the same logic to proxy servers 19 and 21 would make proxy servers 19 and 21 servers, not client devices.

260. For example, Kocherlakota explains that "the client will have visited each [of the proxy servers 17, 19, and 21] directly and established any necessary relationship during the visits. EX. 1003 at 3:12-14. Petitioner agrees that proxy servers 19 and 21 services requests by sending back responses. *E.g.*, Petition at 34-35. Kocherlakota explains that "the URL of web server 15, or any other web server, can be sent from the client to the internet via the chained proxies 17, 19,

and 21.” EX. 1003 at 4:29-31. Also, proxy servers 19 and 21 are not the same physical device as client computer 11. In my opinion, it is improper for Petitioner to identify proxy server 17 as a “server” and another identical proxy server 19/21 as a “client device”.

261. In my opinion, Petitioner genericizes the claimed “client device” in its analysis. Petitioner argues that proxy servers 19 and 21 “each meet the construction of “client device” because each is a device that communicates over the Internet and operate in the role of a client by establishing a connection down the proxy chain to make requests.” Petition at 36. Petitioner attributes no special meaning to this claim term, in direct contradiction to the Court’s Orders and the ‘826 Patent.

262. Applying Petitioner’s own logic, proxy server 17 is also a device that communicates over the Internet and operates in the role of a client by establishing a connection down the proxy chain to make requests. *See also* EX. 2006 at 42:15-19. In my opinion, Petitioner fails to recognize the differences between client devices and servers in the context of the ‘826 Patent.

263. Moreover, Petitioner’s expert testified that, for example, proxy server 19 is “always a client device and always a server as those terms have been construed by the Court”. EX. 2006 at 84:14-85:1. In my opinion, this analysis is improper because Petitioner and its expert fail to distinguish client devices and

servers. Based on Petitioner’s analysis, an intermediary is always both a client device and a server which ignores the specific architecture of the claimed methods.

264. Additionally, Petitioner’s analysis does not apply the purely role-based constructions at a particular point in time for a particular connection. For example, with respect to claim 4, under the purely role-based constructions, proxy server 17 is operating in the role of a client, not a server, and proxy server 19 is operating in the role of a server, not a client.

265. For at least these reasons, Petitioner fails to establish that proxy servers 19/21 are client devices, as opposed to servers.

2. PETITIONER’S ANALYSIS FAILS UNDER PATENT OWNER’S PROPOSED CONSTRUCTIONS

266. In my opinion, a POSA would understand that proxy servers 17, 19, 21 are servers, not client devices. *See, e.g.*, EX. 1003 at Abstract. For example, the HTTP Definitive Guide states that HTTP proxy servers are “intermediary **servers** that act as platforms for HTTP services and controls.” EX. 1023 at 16/658 (emphasis added). Kocherlakota expressly refers to proxies 17, 19, 21 as proxy **servers** and a POSA would understand that proxies 17, 19, 21 are server hardware components, as further discussed below.

267. There is no teaching in Kocherlakota that would suggest proxy servers 17, 19, and 21 are “client devices” under Patent Owner’s proposed constructions.

Petitioner provides no analysis of these components under Patent Owner's proposed constructions. Petitioner's expert agreed there is no disclosure in Kocherlakota that suggests implementing proxies 17, 19, or 21 on something other than a proxy server. EX. 2006 at 86:7-11. In my opinion, a POSA would understand that proxy servers 17, 19, and 21 are not consumer computers or consumer communication devices in the context of the '826 Patent. In my opinion, it would not be obvious to a POSA to use a client device, having limited resources unlike a server, as an intermediary proxy in Kocherlakota's system. Petitioner provides no motivation to do so.

268. For at least these reasons, in my opinion, Petitioner fails to show that Kocherlakota discloses or renders obvious dependent claims 2-5, 12, and 18. In my opinion, Kocherlakota does not disclose or render obvious use of an intermediary client device.

B. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER OBVIOUS STORING AN IP ADDRESS OF THE SECOND CLIENT DEVICE AS RECITED IN CLAIM 5

269. Claim 5 depends from claim 2 and recites the first server "communicating with the second client device; and storing an IP address of the second client device in the list in response to the communicating." Petitioner argues that proxy server 17 establishes and maintains sessions and thereby communicates with each of proxy servers 19/21. Petition at 38. Petition argues that

proxy server 17 therefore stores a list of IP address of proxies 19 and 21. Petition at 39.

270. Petitioner fails to establish that proxy server 17 stores the IP address of proxy server 19 (or proxy server 21) in response to the communicating as recited in claim 5. As discussed above in section XI.D, client computer 11 stores information about the proxies. For at least this reason, Petitioner’s analysis of claim 5 fails.

271. Additionally, Petitioner fails to establish that proxy server 17 stores the IP address of proxy servers 19/21 in response to the communicating as required by claim 5. Petitioner previously argued that proxy server 17 must store a list of IP addresses associated with proxy servers 19/21 in order to establish sessions with proxy servers 19/21. Petition at 28. Therefore, it is inconsistent to argue that proxy server 17 would store the IP address of proxy server 19/21 after establishing a session. Petitioner fails to explain how a POSA would modify Kocherlakota to do so. For at least this additional reason, Petitioner’s analysis of claim 5 fails.

**C. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER
OBVIOUS SELECTING MULTIPLE CLIENT DEVICES FROM
THE PLURALITY OF CLIENT DEVICES AS RECITED IN
CLAIM 18**

272. Claim 18 recites “selecting, by the first server, multiple client devices from the plurality of client devices by selecting the IP addresses of the multiple

client devices from the list.” Petitioner argues that proxy server 17 selects the IP addresses of proxies 19 and 21 from the list of IP addresses to route the URL through the proxy chain. Petition at 43. I disagree.

273. For at least the reasons discussed above in section XI.E, proxy server 17 does not perform any selecting. Even if the Board disagrees with my analysis of “selecting”, proxy server 17 does not “select” multiple IP addresses from the list. In the default pathway, proxy server 17 sends the request to proxy server 19, using the IP address of proxy server 19 as the destination IP address. In the skip pathway, proxy server 17 sends the request to proxy server 19, using the IP address of proxy server 19 as the destination IP address. In the jump pathway, proxy server 17 sends the request to proxy server 21, using the IP address of proxy server 21 as the destination IP address. Based on Petitioner’s analysis, with which I disagree, proxy server 17 “selects” either proxy server 17 OR proxy server 21, but not both. Petitioner’s expert confirmed that he understands proxy server 17 “selects” the IP address of proxy server 19 OR proxy server 21. EX. 2013 at 76:5-16. For at least this reason, Petitioner’s analysis of claim 18 fails.

**D. KOCHERLAKOTA DOES NOT DISCLOSE OR RENDER
OBVIOUS SENDING THE SELECTED IP ADDRESS TO THE
FIRST CLIENT DEVICE AS RECITED IN CLAIM 19**

274. Claim 19 recites “sending of the selected IP address[] to the first client device”. Petitioner alleges that it would have been obvious for proxy 17 to send the

IP addresses of the proxies in the chain to client computer 11 after the proxy chain has been established. Petition at 44. I disagree.

275. First, Petitioner is relying on the establishment of the proxy chain, which occurs before any request is received by proxy server 17 and before, according to Petitioner, any alleged selection has been performed by proxy server 17. Therefore, proxy server 17 could not send the **selected** IP address to client computer 11 before, according to Petitioner, any alleged selection has been performed based on analysis of the URL.

276. Second, Petitioner argues that a POSA would have been motivated to make this modification in order to verify that the proxy chain was set up correctly. Petition at 45. However, this claim limitation relates to the selected IP address, which according to Petitioner, is either proxy server 19 (default, skip pathways) or proxy server 21 (jump pathway). Petitioner fails to establish that a POSA would have been motivated to modify proxy server 17 to send the **selected** IP address of either proxy server 19 or proxy server 21 to client computer 11.

277. Third, as discussed above in section XI.D, client computer 11 stores the information about the proxies. Proxy server 17 does not select which proxies are to form the proxy chain or which features of which proxies are to be used. It appears that Petitioner is using hindsight bias in its analysis of claim 19.

XIII. GROUND 2: KOCHERLAKOTA IN COMBINATION WITH RFC 1122 DOES NOT DISCLOSE OR RENDER OBVIOUS THE CHALLENGED, DEPENDENT CLAIMS UNDER EITHER SET OF CONSTRUCTIONS

278. Because Kocherlakota does not disclose or render obvious independent claim 1 for the reasons discussed above, Kocherlakota does not disclose or render obvious dependent claims 6-9 of the ‘826 Patent under either set of constructions. *See* Ground 2. Petitioner does not argue that RFC 1122 cures any of the deficiencies discussed above.

A. KOCHERLAKOTA AND RFC 1122 DO NOT RENDER OBVIOUS USING AN INTERMEDIARY CLIENT DEVICE AS RECITED IN DEPENDENT CLAIMS 6-9

279. Claim 6 depends from claim 1 and recites “for use with a second client device”. Claims 7-9 depend from claim 6. Petitioner relies on Kocherlakota and alleges that proxy servers 19 and 21 meet the construction of second client device. Petition at 50-53. I disagree.

280. For at least the reasons discussed above in section XII.A, neither proxy server 19 nor proxy server 21 is a client device.

B. KOCHERLAKOTA AND RFC 1122 DO NOT RENDER OBVIOUS SENDING A KEEP ALIVE MESSAGE AS RECITED IN DEPENDENT CLAIMS 6-9

281. Petitioner argues that a POSA would have “implemented the system of Kocherlakota such that during sessions between proxy 17 and client computer

11, proxy 19 and/or proxy 21, the devices would periodically communicate by exchanging TCP keep-alive messages with each other over established TCP connections. Petition at 49. Petitioner states that “the proxy 17 would periodically send client computer 11 and proxies 19 and/or 21 keep-alive messages over the TCP connections between them. Petition at 50. Petitioner argues that a POSA would have done so because “[w]ithout TCP keep-alives, client computer 11, proxy 19, or proxy 21 would unnecessarily expend resources keeping the TCP connection open.” Petition at 48-49.

282. The HTTP Definitive Guide states that “keep-alive connections should not be established with a proxy server that isn’t guaranteed to support the Connection header”. EX. 1023 at 114/658. Petitioner’s expert admitted that he did not analyze this concept in forming his opinions. EX. 2013 at 25:14-26:14.

283. There is no disclosure in Kocherlakota that the proxy servers 17, 19, or 21 are guaranteed to support the Connection header. Petitioner provides no motivation to modify Kocherlakota to do so. Accordingly, a POSA would not be motivated to use keep-alive connections with the proxies of Kocherlakota in view of this disclosure in the HTTP Definitive Guide. For at least this reason, Petitioner’s analysis of claims 6-9 in Ground 2 fails.

**C. KOCHERLAKOTA AND RFC 1122 DO NOT RENDER OBVIOUS
ADDING THE IP ADDRESS OF THE SECOND CLIENT DEVICE
TO THE LIST AS RECITED IN DEPENDENT CLAIM 7**

284. Claim 7 depends from claim 6 and recites “receiving, by the first server, the response to the ‘keep alive’ message from the second client device; and response to the receiving of the response, adding the IP address of the second client device to the list.” For claim 6, Petitioner argues that after the proxy chain has been established, proxy server 17 would periodically send keep-alive messages over the TCP connections between them. Petition at 49-50. For claim 7, Petitioner argues that proxy server 17 waits for an “acknowledgment” from proxies 19/21 confirming that the connection is still live. Petition at 51. Petitioner further argues that in an unidentified state (when an acknowledgment is not received by proxy server 17), a POSA would be motivated to remove the proxy 19/21 from the list of proxies and that when the acknowledgement is subsequently received by proxy server 17, a POSA would be motivated to add proxy 19/21 back to the list of proxies. Petition at 51-52. Petitioner is using hindsight bias and an inaccurate hypothetical.

285. As discussed above in section XI.E, proxy server 17 does not select which proxy servers are to be part of the proxy chain. Kocherlakota is silent as to what happens if one of the proxy servers in the proxy chain goes offline or becomes unavailable. There is no disclosure in Kocherlakota of proxy server 17

sending keep-alive messages to the proxies 19/21 and there is no disclosure in Kocherlakota of proxy server 17 modifying the information in the applet if one of the proxies 19/21 goes offline or becomes unavailable.

286. Petitioner fails to explain how a POSA would have removed proxy 19/21 from the list or how a POSA would have removed proxy 19/21 from the established proxy chain. Additionally, Petitioner fails to explain why a POSA would have removed proxy 19/21 from the “list” as opposed to indicate that the proxy was unavailable. Further, Petitioner fails to explain how a POSA would have added proxy 19/21 back into the proxy chain. Furthermore, Petitioner fails to explain how a POSA would have configured proxy server 17 to update the applet information based on removal/addition of proxy 19/21. For at least these reasons, Petitioner fails to establish that claim 7 would have been obvious to a POSA based on Kocherlakota and RFC 1122.

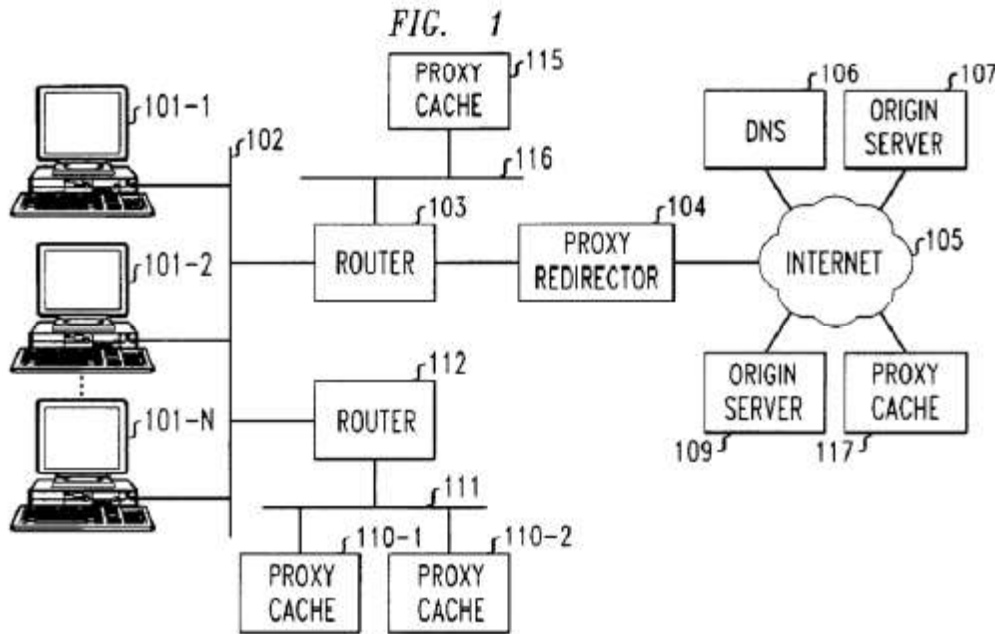
XIV. OVERVIEW OF COHEN

287. I agree with Dr. Rhyne’s summary of Cohen (EX. 1004) in his declaration previously submitted in IPR2021-00122 as EX. 2006.

288. Cohen is directed at a method and apparatus for transparently⁶ redirecting requests for web objects to proxy caches. EX. 1004, Title and Abstract.

⁶ In Cohen, the word “transparent” means no visible effect. *See, e.g.*, EX. 1004 at 2:39-42 (“When requests are transparently directed to a proxy cache, however, the

With reference to Fig. 1 (reproduced below), Cohen states that “[a]ll requests from any of the clients [101] connected to LAN 102 for objects stored in servers connected to the Internet 105 traverse proxy redirector 104 onto the Internet. EX. 1004 at 6:31-34.



289. “When any of the clients connected to LAN 102, such as client 101-1, makes a request through a browser for an object by specifying a logical URL, a domain name server (DNS) 106 connected locally or on Internet 105, as shown, is accessed to perform a database look-up based on that logical name. An associated IP address is then returned to the browser. EX. 1004 at 6:47-53.

client browser is **unaware** that the request is being directed to the proxy and is possibly being fulfilled from the cache.”(emphasis added). Petitioner’s expert agreed that the client is unaware it is using a proxy. EX. 2013 at 51:18-52:17.

290. Cohen also states that “[i]n accordance with the present invention, once the IP address of the origin server corresponding to the logical URL name is determined through the DNS look-up, proxy redirector 104, rather than establishing a TCP connection to the origin server at the determined IP address, transparently establishes a TCP connection between the client and a proxy.” EX. 1004 at 7:12-17.

291. Cohen further states that, “[i]f the requested object is stored in the cache, a copy of the object is transparently returned to the requesting client. A TCP connection, therefore, is not established over the Internet 105, to the actual origin server 107 to provide the requested object to the requesting client.” EX. 1004 at 7:18-22 (emphasis added).

292. In my opinion, the architecture disclosed in Cohen is: client ↔ switch ↔ proxy server.

XV. GROUND 3: COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS CLAIM 1 OF THE ‘826 PATENT

293. As discussed above, in my opinion, the purely role-based constructions of “client device” and “first server” are not appropriate. Even so, under the purely role-based constructions, in my opinion, Cohen does not disclose or render obvious each and every limitation of claim 1 of the ‘826 Patent as discussed below.

294. Moreover, under Patent Owner’s proposed constructions, in my opinion, Cohen does not disclose or render obvious each and every limitation of claim 1 of the ‘826 Patent as also discussed below.

A. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS THE PREAMBLE OF CLAIM 1 UNDER PURELY ROLE-BASED CONSTRUCTIONS

295. The preamble of claim 1 recites a “first server”. Petitioner alleges that proxy redirector 104 corresponds to the “first server”. Petition at 57. In my opinion, Cohen does not disclose a “first server” as recited in the preamble of claim 1 under the purely role-based constructions. Based on Petitioner’s analysis, Petitioner is using hindsight bias to deem proxy redirector 104 a server.

296. During the method steps recited in limitations 1b and 1f, proxy redirector 104 is operating in the role of a server under the purely role-based constructions. During the method steps recited in limitations 1d and 1e, proxy redirector 104 is operating in the role of a client under the purely role-based constructions. Therefore, proxy redirector 104 would meet both of Petitioner’s constructions for the disputed claim terms. Petitioner fails to establish that proxy redirector 104 is a server as opposed to a client device under the purely role-based constructions.

297. In my opinion, the “first server” is necessarily and consistently a server during the performance of method claim 1. For at least this reason, in my

opinion, Cohen does not disclose or render obvious the preamble of claim 1 under the purely role-based constructions.

**B. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS
LIMITATION 1D OF CLAIM 1 UNDER PURELY ROLE-BASED
CONSTRUCTIONS**

298. Limitation 1d of claim 1 of the ‘826 Patent recites the first server “sending... the first content identifier....” Petitioner alleges that proxy redirector 104 corresponds to the “first server” of claim 1 and that the proxy redirector 104 sends the URL to proxy cache 110-1. Petition at 62.

299. In my opinion, Cohen does not disclose or render obvious the “first server” sending the first content identifier as recited in claim 1. In my opinion, Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection, recited in limitation 1d of claim 1.

300. In my opinion, under the purely role-based constructions, when proxy redirector 104 sends the URL to proxy cache 110-1, proxy redirector 104 is operating in the role of a client, not a server. Therefore, under the purely role-based constructions, proxy redirector 104 cannot be a server during performance of this method step. Proxy redirector 104 is not operating in the role of a server and therefore does not meet Petitioner’s construction for “first server” during performance of this method step.

301. For at least this reason, in my opinion, Cohen does not disclose or render obvious claim 1 of the ‘826 Patent under the purely role-based constructions for “client device” and “first server.”

**C. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS
LIMITATION 1E OF CLAIM 1 UNDER PURELY ROLE-BASED
CONSTRUCTIONS**

302. Limitation 1e of claim 1 of the ‘826 Patent recites the first server “receiving... the first content from the web server...” Petitioner alleges that proxy redirector 104 receives the first content from the origin server. Petition at 63.

303. In my opinion, Cohen does not disclose or render obvious a “first server” receiving the first content from the web server” as recited in claim 1. In my opinion, Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection, recited in limitation 1e of claim 1.

304. In my opinion, under the purely role-based constructions, when proxy redirector 104 receives a response from the origin server, proxy redirector 104 is operating in the role of a client, not a server. Therefore, proxy redirector 104 cannot be a server during performance of this method step. Proxy redirector 104 is not operating in the role of a server and therefore does not meet Petitioner’s construction for “first server” during performance of this method step.

305. For at least this reason, in my opinion, Cohen does not disclose or render obvious claim 1 of the ‘826 Patent under the purely role-based constructions for “client device” and “first server”.

**D. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS THE
“FIRST SERVER” OF CLAIM 1 UNDER PATENT OWNER’S
PROPOSED CONSTRUCTIONS**

306. In my opinion, Cohen does not disclose or render obvious that proxy redirector 104 is a “first server” located between a first client device and a web server as recited in claim 1. Cohen expressly states that proxy redirector 104 is a “L4 switch”. EX. 1004 at 5:12-14; 6:26-28. Cohen incorporates by reference U.S. Application No. 09/190,355 (not published), which issued as U.S. Patent No. 6,434,618 and describes “Layer 4 switches, for example, are available that can make decisions about packet forwarding based on TCP/UDP headers as well as IP headers.” EX. 2007 at 1:20-22. Cohen explains that the L4 switch is necessary to redirect an object request to a proxy cache connected somewhere on the network. EX. 1004 at 2:66-3:1. In my opinion, a POSA would understand that a switch is not a server under Patent Owner’s proposed constructions.⁷

⁷ Cohen also discloses the proxy redirector 104 may be combined into the same unit as a router. EX. 1004 at 6:23-31. A POSA would have understood that neither a switch nor a router is a server in the context of the ‘826 Patent.

307. Petitioner argued that proxy redirector 104 “meets the construction of “first server” because it is a device operating in the role of a server by receiving client 101-1’s web requests and sending the responses back to client 101-1 and because it is not the same physical device as client 101-1.” Petition at 57. As discussed above, operating in the role of a server at certain points in time does not make the proxy redirector 104 an actual server in the context of the ’826 Patent.

308. Additionally, Petitioner’s expert testified that a server “couldn’t be a wire... connecting, receiving a request and sending back a response – or a router that was receiving a request and sending back a response”. EX. 2006 at 49:21-50:11; *see also* EX. 2006 at 51:11-52:9 (distinguishing a server from a wire/router). Accordingly, proxy redirector 104 does not correspond to the claimed “first server” which is a server.

309. In my opinion, a switch is similar to a router, neither of which is a server. A POSA would understand that a switch does not use application software and a switch doesn’t maintain a state like a server. A POSA would understand that even a layer 4 switch does not operate at the layer 7 application layer used for, for example, obtaining web pages.⁸ The HTTP Definitive Guide also distinguishes network elements (routers, switches) from server elements (web servers, proxy

⁸ Petitioner’s expert testified that in general, network elements are working at layer 3 and below, and server elements like proxies are working at above layer 3. EX. 2013 at 33:1-7.

servers). EX. 1023 at 481/658. Switches and routers are not the same as server hardware and are used for different purposes. A POSA would understand that a switch is used to connect multiple devices on the same network, while a router is used to connect multiple networks.

310. Additionally, the preferred embodiment of proxy redirector 104 is a Linux machine with a programmable network element. EX. 1004 at 7:55-8:10 and Fig. 2. Cohen teaches that programs are loaded onto the switch via a local program injector 211 or remote program injector 212 via the admission daemon 210. EX. 1004 at 7:49-8:10. Cohen describes, for example, a gateway program “can request access to incoming packets to network interface 208 that match certain source and destination IP address ranges and port numbers. The dispatcher process 202 uses a packet filter 203 in the Linux kernel 201 to obtain packets requested by the gateway programs and uses a raw IP socket 215 to send packets that have been manipulated in accordance with the gateway program back to the kernel for output back to the network through filter 203 through network interfaces 208.” EX. 1004 at 7:61-8:3. In my opinion, based on the teachings of Cohen, a POSA would understand that a switch is not a server under Patent Owner’s proposed constructions. A switch has packet processing code, but a server uses a server operating system. In my opinion, proxy redirector 104 does not have the typical attributes of a server. For example, a switch uses less computation resources and

less storage than a server. For example, Cohen does not disclose or teach that proxy redirector 104 caches any content. Petitioner's expert agreed. EX. 2006 at 120:1-4. A switch is typically less expensive than a server and operates at a lower OSI layer than server.

311. At least because Cohen does not disclose or render obvious that proxy redirector 104 is a server, Cohen does not disclose or render obvious the specific first client device ↔ first server ↔ web server architecture in which claim 1 of the '826 Patent operates. For at least this reason, Cohen does not disclose or render obvious claim 1 of the '826 Patent under Patent Owner's proposed constructions.

**E. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS
LIMITATION 1A OF CLAIM 1 UNDER PATENT OWNER'S
PROPOSED CONSTRUCTIONS**

312. In addition to the reasons discussed above in section XV.D, Petitioner's analysis of limitation 1a is not sufficiently clear and fails to show that Cohen discloses or renders obvious limitation 1a under Patent Owner's proposed constructions.

313. Cohen does not disclose or suggest that proxy redirector 104 stores, operates, or uses a "server operating system". Petitioner alleges that proxy redirector 104 uses a server operating system because the preferred embodiment runs on a Linux machine which "a POSITA would understand [] to intrinsically disclose a server operating system." Petition at 59 (citing EX. 1002 at ¶170).

Petitioner relies only on conclusory expert testimony for this argument with which I disagree.

314. Petitioner is using circular logic. Petitioner argues that because proxy redirector 104 is a server it must be using a server operating system. However, proxy redirector 104 is not a server. Also, a POSA would have understood that as of 10/8/2009, Linux offered various types of operating systems. Petitioner fails to establish that a Linux operating system generally is a server operating system specifically. Just because proxy redirector 104 operates on a Linux machine does not intrinsically show that proxy redirector 104 uses a server operating system.

315. Additionally, because proxy redirector 104 is not a server hardware component, Petitioner does not establish that proxy redirector 104 would use a server operating system under Patent Owner's proposed construction.

F. COHEN DIFFERENTIATES A COMPLETE VERSUS ABSOLUTE URL

316. The portions of Cohen relied on by Petitioner teach sending a GET request comprising a complete URL which is intercepted by the proxy redirector and the proxy redirector sends an absolute URL to the selected proxy cache. *See, e.g.,* Petition at 60-61. As explained by Cohen, "proxy redirector 104... transforms the complete URL to an absolute URL by prefixing it [the complete URL] with the IP address of the origin server..." EX. 1004 at 9:31-10:3. As shown in Table 1 of

Cohen, the complete URL example is “/a/ya/yahoomail/promo1.gif HTTP/1.0” and the absolute URL example is “http://204.71.200.244/a/ya/yahoomail/promo1.gif HTTP/1.0”.

317. I understand that Petitioner argues that the absolute URL includes the complete URL as well as additional information. In my opinion, the complete URL is necessarily different than the absolute URL in the context of Cohen. For example, Cohen teaches that a proxy cache needs the absolute URL in order for the proxy to determine whether it has the requested object in its cache. EX. 1004 at 3:33-42. The proxy cache cannot determine whether it has the requested object in its cache based on the complete URL. The proxy cache needs the IP address of the origin server to indicate the particular origin server from which the object is requested. See also EX. 1004 at 9:24-28. If the object is not located in the proxy cache, then the proxy cache establishes a TCP connection to the origin server based on the absolute URL.

318. Cohen explains that having the proxy redirector transform the complete URL to the absolute URL overcomes problems in the prior art. *E.g.*, EX. 1004 at 4:27-49. However, in my opinion, a POSA would understand that use of an absolute URL identifying a particular web server may not provide fresh content. For example, a proxy cache may have stored a copy of a webpage from the particular web server identified in the absolute URL where that copy is no longer

valid. As another example, a webpage may be stored on multiple different servers and changes to the webpage may not have yet propagated to the particular web server identified in the absolute URL at the time of the request.

319. I note that the claimed methods of the ‘826 Patent specifically overcome problems in the prior art related to dynamic content. *E.g.*, EX. 1001 at 2:38-39. I also note that the claimed methods are directed at fetching fresh content directly from the web server.

G. TEACHING AWAY BY COHEN

320. In my opinion, Cohen teaches away from the claimed methods of the ‘826 Patent for at least 5 reasons. In my opinion, a POSA would not be motivated to arrive at the claimed inventions based on the teachings of Cohen.

321. First, contrary to the claimed methods, Cohen teaches that the client 101 does not “know” that its request is being redirected to a proxy cache. EX. 1004 at 16:34-37; EX. 2006 at 103:11-14. Instead, client 101 thinks its request is being sent directly to the origin server. *E.g.*, EX. 1004 at 6:47-67; EX. 2006 at 112:5-10. In the claimed methods, the first client device is purposely using a first server and possibly, additional intermediaries, to request content from the target web server.

322. Second, Cohen teaches that the requested object is always obtained using an additional intermediary proxy cache. *See also* EX. 2006 at 95:2-10. In contrast, claim 1 does not require the use of additional intermediaries. The first

server may send a request for content directly to the target web server; for example, the first server may change the source IP address of such a request from the IP address of the first server to a selected IP address.

323. Third, because Cohen teaches that every request must go through a proxy cache, the IP address of the proxy cache is not hidden from the origin server. Cohen teaches the same proxy cache may be used for multiple requests, in particular, when a proxy cache is selected based on the IP header. EX. 1004 at 7:46-48 (“With respect to the latter [selection based on IP header information], all objects from a specific origin server will be served by a specific proxy.”); EX. 2006 at 125:7-13; *see also id.* at 121:12-122:22. Over time, the IP address of the proxy cache may be blocked/spoofed by the origin server. In contrast, using different IP addresses of different proxy client devices according to the claimed methods reduces the risk of blocking/spoofing by the target web server.

324. Fourth, Cohen teaches obtaining content from a proxy cache rather than from an origin server. For example, Cohen teaches obtaining cached content decreases latency and traffic. *E.g.*, EX. 1004 at 1:12-14; 1:43-48. In contrast, the claimed methods recite methods for fetching content directly from the target web server.

325. Fifth, Cohen teaches that it is the proxy cache that determines whether to obtain content from the web server. In contrast, the claimed methods recite methods for fetching content directly from the target web server.

326. For at least these reasons, in my opinion, a POSA reading Cohen would not be motivated to arrive at the claimed methods of the '826 Patent.

XVI. GROUND 3: COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS THE CHALLENGED, DEPENDENT CLAIMS UNDER EITHER SET OF CONSTRUCTIONS

327. Because Cohen does not disclose or render obvious independent claim 1 for the reasons discussed above, Cohen does not disclose or render obvious dependent claims 2-6, 10, 12, 15-19, or 21-25 under either set of constructions.

A. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS USING AN INTERMEDIARY CLIENT DEVICE AS RECITED IN DEPENDENT CLAIMS 2-6, 12, AND 18

328. Petitioner argues that proxy caches 110-1, 110-2, 115, and/or 117 each meet the construction of “second client device”. *E.g.*, Petition at 63. I disagree.

1. PETITIONER’S ANALYSIS FAILS UNDER THE PURELY-ROLE BASED CONSTRUCTIONS

329. As discussed above, a POSA would not be able to distinguish an intermediary client device from an intermediary server under the purely role-based

constructions. Intermediary proxy caches 110, 115, and/or 117 are operating in different roles at different points in time.

330. In my opinion, Petitioner's analysis of proxy caches 110, 115, and/or 117 and its proposed constructions is inconsistent. Petitioner previously argued that proxy redirector 104 "meets the construction of "first server" because it is a device operating in the role of a server by receiving client 101-1's web requests and sending the responses back to client 101-1 and because it is not the same physical device as client 101-1." Petition at 60-61. Applying the same logic to proxy caches 110, 115, 117 would make the proxy caches servers, not client devices.

331. Petitioner's analysis is also inconsistent because Petitioner argues that each proxy cache is a device that communicates over the Internet and operates in the role of a client by establishing a connection between the origin server and proxy redirector 104. Petition at 63. While under the purely role-based constructions, each proxy cache may operate in the role of a client with respect to the origin server, each proxy cache operates in the role of a server with respect to the proxy redirector 104. Petitioner's expert agreed. *E.g.*, EX. 2006 at 118:6-12 and 119:14-24. In my opinion, Petitioner fails to consider which role is being performed at a particular point in time for a particular connection.

2. PETITIONER'S ANALYSIS FAILS UNDER PATENT OWNER'S PROPOSED CONSTRUCTIONS

332. In my opinion, a POSA would understand that proxy caches 110-1, 110-2, 115, 117 are servers, not client devices. For example, the HTTP Definitive Guide states that public caches are shared proxy **servers** called caching proxy servers or more commonly proxy caches. EX. 1023 at 189/658. A POSA would understand that Cohen's proxy caches are server hardware components as further discussed below.

333. In my opinion, a POSA would understand that proxy caches of Cohen are caching proxy servers. In the context of the '826 Patent, a server is not a client device as discussed above. In my opinion, the proxy caches of Cohen are not client devices under Patent Owner's proposed constructions. For example, unlike a typical client device, a proxy cache needs greater resources to store copies of requested objects. In my opinion, it would not be obvious to a POSA to use a client device, having limited resources unlike a server, as an intermediary proxy in Cohen's system. Petitioner provides no motivation to do so.

334. As another example, Cohen teaches that proxy caches are commercial devices, typically owned by large Internet Service Providers (ISP). *See, e.g.*, EX. 1004 at 1:38-43. In contrast, client devices are consumer owned and operated in the context of the '826 Patent.

335. For at least these reasons, in my opinion, Petitioner fails to show that Cohen discloses or render obvious dependent claims 2-6, 12, and 18. In my opinion, Cohen does not disclose or render obvious the use of an intermediary client device.

**B. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS
STORING AN IP ADDRESS IN RESPONSE TO THE
COMMUNICATION AS RECITED IN DEPENDENT CLAIM 5**

336. Claim 5 depends from claim 2 and recites the first server “communicating with the second client device; and storing an IP address of the second client device in the list in response to the communicating.” Petitioner argues that it would have been obvious for proxy redirector 104 to select one of the available proxy caches and for proxy redirector to store a group of IP addresses for the proxy caches. Petition at 65. Petitioner fails to establish that proxy redirector 104 stores an IP address of the proxy cache in response to the communicating as required by claim 5.

337. Petitioner previously argued that proxy redirector 104 must store a list of IP addresses associated with each proxy cache, in order to select one of the proxy caches. Petition at 57. Therefore, it is inconsistent to argue that proxy redirector 104 would first select a proxy cache and then store the IP address of the proxy cache in the analysis of claim 5. Petitioner fails to explain how a POSA would modify Cohen to do so.

338. Additionally, Petitioner argues that when proxy redirector 104 transparently establishes a TCP connection between the client and a proxy cache, proxy redirector 104 would store the IP address of the proxy cache. Petition at 66. Petitioner fails to establish that proxy redirector 104 stores an IP address of the proxy cache in response to the communicating as required by claim 5.

**C. COHEN DOES NOT DISCLOSE OR RENDER OBVIOUS
SENDING THE SELECTED IP ADDRESS TO THE FIRST
CLIENT DEVICE AS RECITED IN CLAIM 19**

339. Claim 19 recites “sending of the selected IP address[] to the first client device.” Petitioner argues that the Cohen discloses an alternative method where the proxy cache sends the content directly back to the client. Petition at 71. Petitioner argues that in this case, the IP address of the proxy cache is the source address in the IP packet. Petition at 71.

340. Claim 19 depends from claim 1 which requires the first server to receive the first content from the web server and requires the first server to send the received first content, or a part thereof, to the first client device. In Cohen’s alternative method, the content would not be sent from the proxy cache to the alleged first server or from the alleged first server to the alleged first client device. For at least this reason, Petitioner’s analysis of claim 19 fails.

XVII. GROUND 4: COHEN IN COMBINATION WITH RFC 1122 DOES NOT DISCLOSE OR RENDER OBVIOUS THE CHALLENGED, DEPENDENT CLAIMS UNDER EITHER SET OF CONSTRUCTIONS

341. Because Cohen does not disclose or render obvious independent claim 1, for the reasons discussed above, Cohen does not disclose or render obvious dependent claims 6-9 of the '826 Patent under either set of constructions. *See* Ground 4. Petitioner does not argue that RFC 1122 cures any of the deficiencies discussed above.

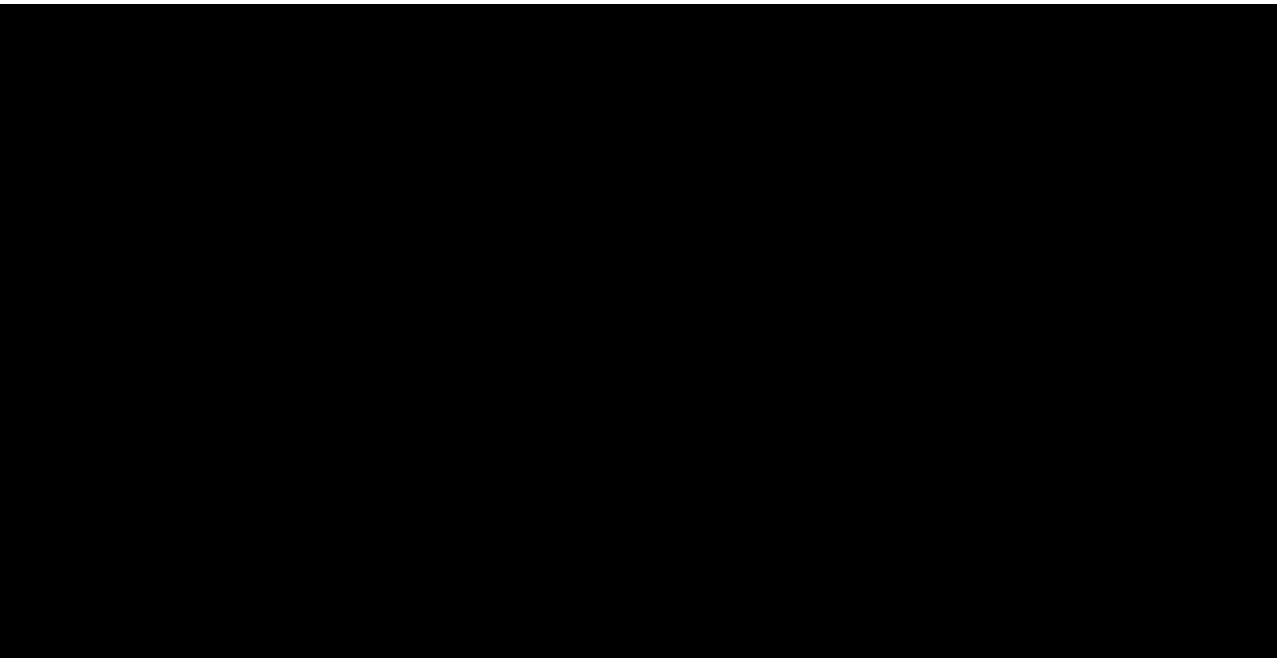
342. For at least the reasons discussed above in section XVI.A, the proxy caches of Cohen are not client devices. Therefore, Cohen and RFC 1122 do not render obvious using an intermediary client device as recited in dependent claims 6-9.

XVIII. BRIGHT DATA PRACTICES THE CHALLENGED CLAIMS

343. From my conversations with Ron Kol, I understand that Bright Data offers a data center proxy service. *See also, e.g.*, EX. 2039. In my opinion, Bright Data's data center proxy service practices at least challenged claims 1, 10, 12, 15-17, 21-25 of the '826 Patent, as discussed below.

344. I am familiar with Bright Data's network diagram (EX. 2045). As shown in Bright Data's network diagram, reproduced below, the data center proxy service includes data center servers and static residential servers. As shown in Bright Data's network diagram, customers of Bright Data's data center proxy

service may request content stored on a web server identified by, for example, a URL. The customer may use a client device to send a content request to the SuperProxy, which stores a group of IP addresses and selects an IP address to be used for the request. The SuperProxy sends the request to the target web server via the data center server or static residential server hosting the selected IP address. The target web server receives the request and sends the requested content back to the customer's client device via the SuperProxy.



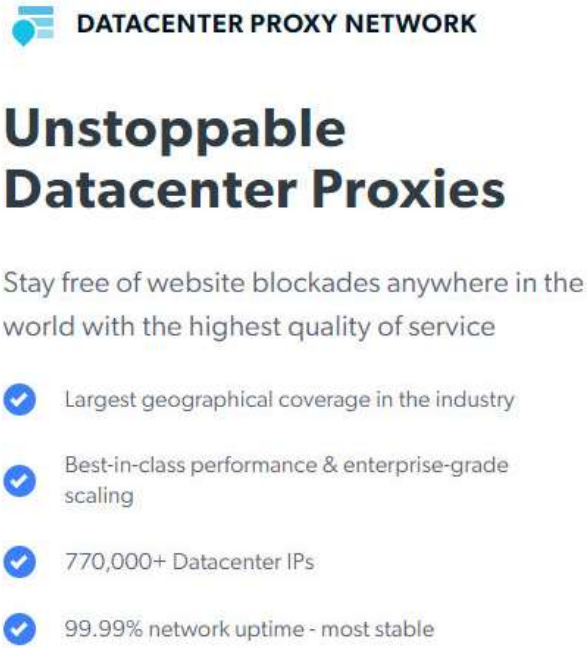
345. In my opinion, the customer ↔ SuperProxy ↔ web server architecture corresponds to the first client device ↔ first server ↔ web server architecture of the claims of the '826 Patent.

346. I have reviewed Bright Data's source code (EX. 2040) for the data center proxy service. In my opinion, there is nexus between Bright Data's data

center proxy service and at least claims 1, 10, 12, 15-17, 21-25 of the ‘826 Patent, as shown in the table below.

Claim 1 preamble	A method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the	These elements are literally present in Bright Data’s data center proxy services, as discussed below. The Practicing Products are Bright Data’s data center proxy services, each of which provides a system and method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the first server. The Practicing Products include various products/services involved with anonymity or large-scale web data extraction products and/or services utilizing a proxy server under the Bright Data brand, such as its “data center proxies” and
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	first server, the method by the first server comprising:	“static residential proxies” services and corresponding products and services used in conjunction with these services including but not limited to “Data Collection Automation (crawler)”, “Data Unblocker” (unlocker), “Proxy Manager”, “Bright Data mobile app”, “Bright Data API”, and “Browser Extension.” The Practicing Products involve multiple network components including a first client device, such as a customer’s device, web servers that store content identified by URLs, and a first server, such as a Superproxy, that stores a list of IP addresses. Bright Data’s network diagram shows a customer accessing Bright Data’s data center proxy service through a SuperProxy which sends requests through Bright Data’s data center network comprising data center servers and static residential servers.
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		The customer may request content that comprises, for example, a webpage and is identified by, for example, a URL. The content could be any type of content stored on a web server. See, e.g.,:  https://brightdata.com/proxy-types/datacenter-proxies (EX. 2039) See, e.g.:
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		Where are Bright Data's Datacenter Proxies located? ▾ Bright Data has Datacenter proxies in 98 locations across the globe. The countries with the most Datacenter IPs are the USA, Canada, UK, Germany, and France. https://brightdata.com/proxy-types/datacenter-proxies (EX. 2039)
Claim 1a	storing, operating, or using, a server operating system;	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, storing, operating, or using, a server operating system. See analysis of claim 1 preamble and the other limitations of claim 1, which is fully incorporated by reference. Bright Data's Superproxy is a proxy server as further discussed herein.

Claim 1b	receiving, from the first client device, the first content identifier;	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, that performs the step of receiving, from the first client device, the first URL. The first server receives the first content identifier, such as a URL, from the first client device. For example, the network diagram shows a Superproxy, which receives requests from a customer's client device, sends the request to a target web server via a data center or static residential server, receives the content corresponding to the request from the target web server via the data center or static residential server, and sends that content to the client device of the customer.
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		For example, the connect_req⁹ function is called when content requests are received from the customer's client device. The connect_req function creates a Tunnel¹⁰ object using the request's data and then calls the Tunnel's run¹¹ function. The run function uses the resolve¹² function to obtain the content identifier from the request.
Claim 1c	selecting, an IP address from the list according to a criterion;	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, that performs the step of selecting, an IP address from the list according to a criterion.

⁹ See lines 720-751 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

¹⁰ See lines 425-710 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

¹¹ See lines 626-709 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

¹² See lines 614-625 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

		See analysis of claim 1 preamble and the other limitations of claim 1, which is fully incorporated by reference. As one non-limiting example, in response to the receiving of the first content identifier from the first client device, the SuperProxy may select the IP address from the group of IP addresses. For example, a Tunnel¹³ object calls the function <code>_choose_local_ip</code>¹⁴. The <code>_choose_local_ip</code> function will select an IP address from a pool of IP addresses to make the request from.
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¹³ See lines 425-710 of file `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

¹⁴ See lines 550-559 of file `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

		Continuing this example, the function <code>setup_ip_pool</code>¹⁵ calls the function <code>get_local_ips</code>¹⁶ to obtain a list of available IP addresses. The server's <code>fun</code> function calls <code>setup_ip_pool</code>¹⁷ and then calls the function <code>check_source_ip</code>¹⁸ to validate that each of the IP addresses in the list meets valid criteria, allowing the selection of the valid IP address. The first server stores a criterion, wherein the selecting is according to, or based on, the criterion. For example, the selecting is according to, or based on, a criterion that may be based on a response time when communicating. The <code>check_source_ip</code>¹⁹
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¹⁵ See lines 776-811 of file `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

¹⁶ See lines 755-774 of file `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

¹⁷ See lines 1085-1231 of file `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

¹⁸ See lines 828-844 of `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

¹⁹ See lines 828-844 of `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

		function uses a TCP connection to test a proxy IP address identified as <code>source_ip</code>. If a timeout occurs because the connection could not be established within a given time, the <code>source_ip</code> address is added to a list of IP addresses which failed respond in time. The <code>check_source_ip</code> function calls the <code>tcp_connect</code>²⁰ function. The <code>tcp_connect</code> function sets a timeout for a socket connection which will attempt to connect to the host IP address from the <code>source_ip</code>. As another example, the function <code>ping_ips</code>²¹ also tests the set of available IP addresses by calling the <code>tcp_connect</code> function. The <code>ping_ips</code> function marks each IP address as being a success or having failed as a result.
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²⁰ See lines 813-826 of `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

²¹ See lines 367-403 of `pkg_svc_lum_agent_tunnel.js` (EX. 2040)

Claim 1d	sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier;	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, that performs the step of sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier. See analysis of claim 1 preamble and the other limitations of claim 1, which is fully incorporated by reference. In response to the selecting, the first server, e.g., SuperProxy, sends a request including the first content identifier, e.g., URL, to the web server using the selected IP address. The group of IP addresses would include an IP address of the data center server or static residential server. The SuperProxy selects an IP address and uses the selected IP address to send the request to the web server. For example, the selected IP address may
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		be used as a sending address or a receiving address (including intermediaries). Continuing the above examples, the Tunnel's run²² function connects²³ to the content server and establishes²⁴ a proxy tunnel connection between the client device and content server. In this manner proxy requests are made to the content server and content is received from the content server by the SuperProxy and delivered by the SuperProxy to the client device.
Claim 1e	receiving, in response to the sending of the	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, that

²² See lines 626-709 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

²³ See line 645 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

²⁴ See line 661 of file pkg_svc_lum_agent_tunnel.js (EX. 2040)

	first content identifier, the first content from the web server; and	performs the step of receiving, in response to the sending of the first content identifier, the first content from the web server. See analysis of claim 1 preamble and the other limitations of claim 1, which is fully incorporated by reference. In response to the sending, the SuperProxy receives the first content from the web server. The network diagram shows a SuperProxy, which receives requests from a customer's client device, sends the request to a target web server via a data center or static residential server, receives the content corresponding to the request from the target web server via the data center or static residential server and sends that content to the client device of the customer.
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Claim 1f	sending the received first content, or a part thereof, to the first client device.	This element is literally present in the Practicing Products because the data center proxy service includes a first server, such as the Superproxy, that performs the step of sending the received first content, or a part thereof, to the first client device. See analysis of claim 1 preamble and the other limitations of claim 1, which is fully incorporated by reference. The SuperProxy receives the first content from the web server and sends that content to the client device of the customer as shown in the network diagram.
Claim 10	The method according to claim 1, wherein the	This element is literally present in the Practicing Products because the data center proxy service performs the method according to claim 1, wherein the criterion is stored in the first server.

	criteria is stored in the first server.	See analysis of claim 1, which is fully incorporated by reference.
Claim 12	The method according to claim 10, wherein the criteria is based on, or comprises, a geographical location of a client device addressed by the selected IP address, or a response time when communicating	This element is literally present in the Practicing Products because the data center proxy services performs the method according to claim 10, wherein the criteria is based on, or comprises, a geographical location of a client device addressed by the selected IP address, or a response time when communicating with the client device addressed by the selected IP address. See analysis of claim 1, which is fully incorporated by reference.

	with the client device addressed by the selected IP address.	
Claim 15	The method according to claim 1, wherein the first server is a Transmission Control Protocol/Internet Protocol (TCP/IP) server that communicates over the Internet with the first client device	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the first server is a Transmission Control Protocol/Internet Protocol (TCP/IP) server that communicates over the Internet with the first client device based on, according to, or using, TCP/IP protocol or connection. See analysis of claim 1, which is fully incorporated by reference. The Practicing Products include a first server that is a TCP/IP server that communicates over the Internet with the first client device based on,

	based on, according to, or using, TCP/IP protocol or connection.	according to, or using TCP/IP protocol of connection. For example, the Practicing Products support HTTP protocols that use TCP.
Claim 16	The method according to claim 1, wherein the first server communicates over the Internet based on, or according to, one out of UDP, DNS, TCP, FTP, POP*, SMTP, or SQL standards.	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the first server communicates over the Internet based on, or according to, one out of UDP, DNS, TCP, FTP, POP#, SMTP, or SQL standards. See analysis of claim 1, which is fully incorporated by reference. The Practicing Products include a first server, e.g., SuperProxy, that communicates over the Internet based on, according to, one out of UDP, DNS, TCP, FTP, POP#, SMTP, or SQL standards. For example, the Practicing Products support HTTP,

		HTTPS & SOCKS5 protocol that rely upon TCP or UDP. See, e.g.,: Is communication between relays encrypted?  Support Account Updated 1 year ago Yes. For super proxy requests, you can use either HTTP or HTTPS. The communication protocol is encrypted by using a proprietary algorithm. https://help.brightdata.com/hc/en-us/articles/4413418365713-Is-communication-between-relays-encrypted- (EX. 2043) See, e.g.,:
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		What is Proxy Manager?  Support Account Updated 1 month ago Manages all proxies using one interface An advanced open-source tool (See project on GitHub) to help you speed up development time with built-in features for managing any proxy operations. A few of the most important features are: • Live preview of the whole traffic • Logs and statistics • Rules that split the traffic for bandwidth and cost optimization • Rules that can automatically retry failed requests • Easy way of adjusting headers and SSL fingerprint • Access management by whitelisting or generating tokens • Enabling the routing of SOCKS5 requests • IP rotation and sessions management • One-stop-UI to separate your traffic between different ports and keep all statistics together at the same time • Automatic load-balancing between several Proxy Manager instances if you decide to host your PM on our Clouds With Proxy Manager you can drive all Bright Data's different networks. Watch Bright Data Webinar: How to start using the Proxy Manager https://help.brightdata.com/hc/en-us/articles/4413135708561 (EX. 2042)
Claim 17	The method according to claim 1, wherein the first content comprises web-	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the first content comprises web-page, audio, or video content, and wherein the first content identifier comprises a Uniform Resource Locator (URL).

	page, audio, or video content, and wherein the first content identifier comprises a Uniform Resource Locator (URL).	See analysis of claim 1, which is fully incorporated by reference. The customer may request content that comprises, for example, a webpage and is identified by, for example, a URL. The content could be any type of content stored on a web server.
Claim 21	The method according to claim 1, wherein the first client device is identified by a first Internet Protocol (IP) address, Media Access Control	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the first client device is identified by a first Internet Protocol (IP) address, Media Access Control (MAC) address, or a hostname. See analysis of claim 1, which is fully incorporated by reference. The Practicing Products include a first client device identified by a first IP address, MAC

	(MAC) address, or a hostname.	address, or a hostname. For example, the Practicing Products support authentication by IP address and white listing.
Claim 22	The method according to claim 1, wherein the web server is a Hypertext Transfer Protocol (HTTP) server responding to HTTP requests.	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the web server is a Hypertext Transfer Protocol (HTTP) server responding to HTTP requests. See analysis of claims 1 and 16, which is fully incorporated by reference. The web server is an HTTP server responding to HTTP requests and addressed in the Internet using a web server IP address. For example, the Practicing Products support HTTP. See, e.g., :

		Which ports and protocols are supported by Bright Data?  Support Account Updated 1 year ago Ports 80 and 443 are available by default, supporting HTTP and HTTPS protocols. The below table shows supported protocols by port: <table><thead><tr><th>Port</th><th>Protocol</th></tr></thead><tbody><tr><td>80</td><td>HTTP</td></tr><tr><td>443</td><td>HTTPS</td></tr></tbody></table> https://help.brightdata.com/hc/en-us/articles/4413222000017-Which-ports-and-protocols-are-supported-by-Bright-Data- (EX. 2044)	Port	Protocol	80	HTTP	443	HTTPS
Port	Protocol							
80	HTTP							
443	HTTPS							
Claim 23	The method according to claim 1, wherein the steps are	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, wherein the steps are sequentially executed.						

	sequentially executed.	See analysis of claim 1, which is fully incorporated by reference.
Claim 24	The method according to claim 1, for use with a software application that includes computer instructions that, when executed by a computer processor, cause the processor to perform the steps of the claim 1.	This element is literally present in the Practicing Products because the data center proxy service performs the method of claim 1, for use with a software application that includes computer instructions that, when executed by a computer processor, cause the processor to perform the steps of the claim 1. See analysis of claim 1, which is fully incorporated by reference. The Practicing Products include a software application that includes computer instructions that, when executed by a computer processor, cause the processor to perform the steps of claim 1. For example, the SuperProxy allows the Practicing

		Products to automatically select a proxy IP address from the group.
Claim 25	A non-transitory computer readable medium containing computer instructions that, when executed by a computer processor, cause the processor to perform the method according to claim 1.	This element is literally present in the Practicing Products because the data center proxy service includes a non-transitory computer readable medium containing computer instructions that, when executed by a computer processor, cause the processor to perform the method according to claim 1. See analysis of claims 1 and 24, which is fully incorporated by reference.

347. In my opinion, the novel use of a “first server” that stores a group of IP addresses and selects an IP address from the group as recited in, for example, claim 1 provides an extremely scalable solution that solves the problems identified in the prior art in the background section of the specification. In my opinion, the novel use of a “first server” as recited in, for example, claim 1 also solves problems regarding blocking/spoofing by a web server. In my opinion, it is the ability to support the selection of proxy IP addresses that creates the value in these services.

348. As one example, the first server may select a proxy IP address based upon a response time when communicating, which will increase efficiency by avoiding an IP address that may have been slow or blocked from making a request. The first server is also able to hide the fact that multiple requests are being sent from the same customer. For example, the first server may select an additional IP address for an additional request to reduce the risk of being blocked by a web server. In my opinion, it is valuable for the first server to be able to select from different possible proxy IP addresses for different requests.

349. Bright Data’s data center proxy services advertise enterprise-grade scaling. In my opinion, this scalability is due to the novel use of a “first server” as recited in the claimed methods. I also understand that Bright Data’s data center

proxy services offer over 770,000+ Datacenter IPs in 98 countries. EX. 2039 at 1-2 (<https://brightdata.com/proxy-types/datacenter-proxies>).

350. I understand that Bright Data's data center proxy services have a 99.99% success rate and are rated as #1. EX. 2039 at 5 (<https://brightdata.com/proxy-types/datacenter-proxies>). In my opinion, this success rate can be attributed to the novel use of a "first server" as recited in the claimed methods.

351. I understand that Bright Data's data center proxy service generated revenue of \$22,136,000 in the year of 2021. In my opinion, this revenue further shows commercial success of the claimed method. In my opinion, this revenue supports the non-obviousness of the claimed methods.

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

Tim Arthur Wilkins

Signed in Danville, CA, USA on 6 Sept 2024

EXHIBIT A

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.

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.

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 Glenarye 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

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
10,917,232	2021	Data Enciphering or Deciphering using a Hierarchical Assignment System
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

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

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>
- 19 Sept 2022 Williams, Tim A, A Study of IPlytics Standard Essential Patent Tool.
Available at SSRN: <https://ssrn.com/abstract=4223782>

Litigation Experience

See attached.