Trials@uspto.gov
571-272-7822

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CODE200, UAB, TESO LT, UAB, METACLUSTER LT, UAB, OXYSALES, UAB, AND CORETECH LT, UAB,
Petitioner,

v.

BRIGHT DATA LTD.,
Patent Owner.

IPR2021-01493[1]
Patent 10,484,510 B2

Before THOMAS L. GIANNETTI, SHEILA F. McSHANE, and RUSSELL E. CASS, *Administrative Patent Judges*.

McSHANE, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Granting Motion to Seal
35 U.S.C. § 318(a); 37 C.F.R. § 42.14

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[1] The Petitioners in IPR2022-00862 were joined to this case, with IPR2022-00862 then terminated. *See* Paper 24, 35–38.

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, we determine that Petitioner has shown by a preponderance of the evidence that challenged claims 1, 2, 6–11, 13, and 15–24 (the "challenged claims") of U.S. Patent No. 10,484,510 B2 (Ex. 1001, "the '510 patent") are unpatentable.

A. Procedural Background

In IPR2022-00862, Code200, UAB; Teso LT, UAB; Metacluster LT, UAB; Oxysales, UAB; and Coretech LT, UAB (collectively, "Code200" or "Petitioner") filed a Petition requesting *inter partes* review of claims 1, 2, 6–11, 13, and 15–24 of the '510 patent, along with the supporting Declaration of Keith J. Teruya. IPR2022-00862, Paper 1 ("Pet."); IPR2022-00862, Ex. 1005 ("Teruya Decl."). Bright Data Ltd.[2] ("Patent Owner") filed a Preliminary Response to the Petition. IPR2022-00862, Paper 15. With the Petition, Petitioner also filed a Motion for Joinder with this case, IPR2021-01493. IPR2022-00862, Paper 7, Paper 13.

On July 25, 2022, we issued a Decision in IPR2022-00862 exercising discretion to deny institution based on an assessment of factors set forth in *General Plastic Industrial Co. Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i) (*General Plastic*). IPR2022-00862, Paper 17. Our Decision also denied joinder of the parties in IPR2022-00862 to this case, IPR2021-01493. *Id.* at

[2] Bright Data Ltd. was formerly known as Luminati Networks Ltd. *See* PO Resp. 68.

17. The Director reviewed our Decision *sua sponte*, vacated the Decision, and remanded the case to the panel, with orders that our Decision denying institution and joinder be reconsidered consistent with the review. IPR2022-00862, Paper 18 ("Remand Decision").

Pursuant to and consistent with the Remand Decision, we considered the Petition, Joinder Motion, and Preliminary Response in IPR2022-00862, instituted *inter partes* review, and granted joinder of the parties to this case. Paper 24 ("Inst. Dec."). More specifically, we instituted *inter partes* review based on the following grounds:

Claims Challenged	35 U.S.C. §[3]	Reference(s)/Basis[4]
1, 6, 7, 13[5], 15, 16, 18–24	102(b)	Crowds[6]

[3] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Because the '510 patent claims priority to a provisional application that was filed before this date, with Petitioner not contesting that priority, the pre-AIA versions of §§ 102 and 103 apply. *See* Ex. 1001, code (60); Pet. 17.

[4] Petitioner's obviousness challenges additionally refer to the "[k]nowledge of [a person of ordinary skill in the art]." Pet. 10. We understand this to refer to a person of ordinary skill in the art's understanding of the applied references and not to supplying missing limitations or incorporating an unspecified disclosure by reference to supply missing claim limitations.

[5] The Petition includes assertions for claim 13 under the Crowds anticipation ground. Pet. 33. Accordingly, we include this claim in the summary table, although not included in the Petition's summary table. *Id*. at 10.

[6] Michael K. Reiter, *Crowds: Anonymity for Web Transactions*, ACM Transactions on Information and System Security, Vol. 1, No. 1, November 1998, at 66–92 (Ex. 1006).

Claims Challenged	35 U.S.C. §[3]	Reference(s)/Basis[4]
1, 2, 6–11, 13, 15, 16, 18–24	103(a)	Crowds, RFC 2616[7]
1, 6, 10, 15–20, 23, 24	102(b)	Border[8]
1, 6, 8–11, 13, 15–20, 22–24	103(a)	Border, RFC 2616
1, 6–8, 13, 15, 16, 18–24	102(b)	MorphMix[9]
1, 2, 6–11, 13, 15, 16, 18–24	103(a)	MorphMix, RFC 2616

Pet. 10; Inst. Dec. 5[10], 38.

Patent Owner filed a Patent Owner Response ("PO Resp."), along with the Declaration of Tim Williams, Ph.D. Paper 30; Ex. 2065. Petitioner filed a Reply ("Pet. Reply") to the Patent Owner Response. Paper 40. Patent Owner filed a Sur-reply ("PO Sur-reply"). Paper 41.

An oral hearing was conducted on June 9, 2023. A transcript of the hearing is included in the record. Paper 51 ("Tr.").

B. Related Matters

The '510 patent has been the subject of numerous proceedings in district court and the Board. Pet. 3–5; IPR2022-00862, Paper 10, 1–5. In particular, the parties identify four district court proceedings involving the

[7] Hypertext Transfer Protocol—HTTP/1.1, Network Working Group, RFC 2616, The Internet Society, 1999 (Ex. 1013).
[8] U. S. Patent No. 6,795,848, issued September 21, 2004 (Ex. 1012).
[9] Marc Rennhard, MorphMix—A Peer-to-Peer-based System for Anonymous Internet Access (2004) (Ph.D. dissertation, Swiss Federal Institute of Technology) (Ex. 1008).
[10] In the Institution Decision, the summary table inadvertently includes claim 22 in the Border anticipation ground, which Petitioner did not challenge under this ground. *See* Pet. 10; Inst. Dec. 5.

'510 patent and a related patent (U.S. Patent No. 10,257,319 ("the '319 patent")):

> *Bright Data Ltd. v. NetNut Ltd.*, No. 2:21-cv-225 (E.D. Tex.) (pending);
>
> *Luminati Networks Ltd. v. Teso LT, UAB, et al.*, No. 2:19-cv395 (E.D. Tex.) (pending) ("the Teso litigation");
>
> *Luminati Networks Ltd. v. BI Science (2009) Ltd.*, No. 2:19-cv397 (E.D. Tex.) (dismissed); and
>
> *Luminati Networks Ltd. v. Tefincom S.A.,* No. 2:19-cv-414 (E.D. Tex.) (pending).

Pet. 3; IPR2022-00862, Paper 10, 2–3.

The '510 patent has also been before the Board in IPR2020-00138 and IPR2022-00916. Pet. 5; IPR2022-00862, Paper 10, 1–2.

In addition, Patent Owner identifies *ex parte* reexaminations, Control No. 90/014,875 and Control No. 90/014,876, that have been ordered for U.S. Patent No. 10,257,319, a patent related to the '510 patent, and for the '510 patent, respectively. IPR2022-00862, Paper 10, 2. Those reexaminations have been stayed. *See* IPR2021-01492, Paper 14; IPR2021-01493, Paper 13.

C. The '510 Patent

The '510 patent is titled "System Providing Faster and More Efficient Data Communication" and issued on November 19, 2019 from an application filed on February 17, 2019. Ex. 1001, codes (22), (45), (54). The patent is subject to a terminal disclaimer. *Id.* at code (*). The application for the '510 patent claims priority to several applications, including U.S. Provisional Application No. 61/249,624, filed October 8, 2009. *Id.* at code (60).

The '510 patent is directed to addressing the "need for a new method of data transfer that is fast for the consumer, cheap for the content distributor and does not require infrastructure investment for ISPs." Ex. 1001, 1:57–59. The '510 patent states that other "attempts at making the Internet faster for the consumer and cheaper for the broadcaster," such as proxy servers and peer-to-peer file sharing, have various shortcomings. *Id.* at 1:61–3:6. The '510 patent provides a system and method "for faster and more efficient data communication within a communication network," such as in the network illustrated in Figure 3, reproduced below. *Id.* at 3:16–18, 4:5–7.

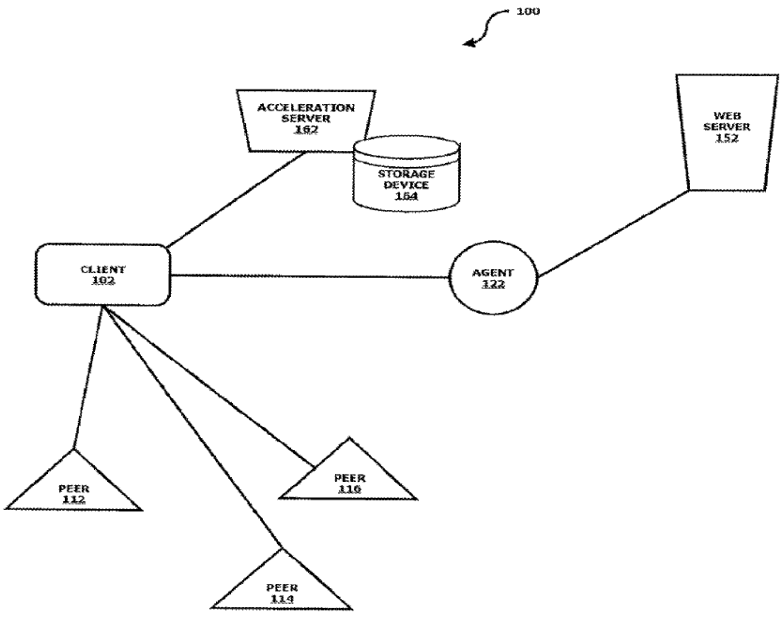


FIG. 3

Figure 3 is a schematic diagram depicting communication network 100 including a number of communication devices. Ex. 1001, 4:56–48. Client 102 is capable of communicating with peers 112, 114, and 116, as well as with one or more agents 122. *Id.* at 4:58–60. Web server 152 may be "a typical HTTP server, such as those being used to deliver content on any of

the many such servers on the Internet." *Id.* at 4:65–5:2. Acceleration server 162 includes an acceleration server storage device 164 with an acceleration server database, which "stores Internet Protocol (IP) addresses of communication devices within the communication network 100 having acceleration software stored therein." *Id.* at 5:14–17.

In operation, a client may request a resource on the network, for example, through the use of an Internet browser. Ex. 1001, 12:62–13:3. If server 152 is the target of the request, the client sends the IP address of server 152 to acceleration server 162. *Id.* at 13:8–15. Acceleration server 162 then prepares a list of agents that can handle the request, which includes communication devices "that are currently online, and whose IP address is numerically close to the IP of the destination Web server 152." *Id.* at 13:19–29. The client then sends the original request to the agents in the list to find out which "is best suited to be the one agent that will assist with this request." *Id.* at 13:31–36. The connection established between the agent and client may be a Transmission Control Protocol ("TCP") connection. *Id.* at 17:61–64.

Each agent responds to the client with information as to "whether the agent has seen a previous request for this resource that has been fulfilled," and "which can help the client to download the request information from peers in the network." Ex. 1001, 13:51–57. The client selects an agent based on a number of factors, and the selected agent determines whether data stored in its memory or the memory of the peers "still mirrors the information that would have been received from the server itself for this request." *Id.* at 13:62–14:1, 14:35–38. If the selected agent does not have

the necessary information to service the request, it may "load the information directly from the server in order to be able to provide an answer to the requesting client." *Id.* at 14:62–67.

The '510 patent has twenty-four claims. Claim 1, the only independent claim, is illustrative of the claimed subject matter and is reproduced below, with bracketed designations added to the limitations for reference purposes.

> 1. [pre] 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:
>
> [a] establishing a Transmission Control Protocol (TCP) connection with a second server;
>
> [b] sending, to the web server over an Internet, the first content identifier;
>
> [c] receiving, the first content from the web server over the Internet in response to the sending of the first content identifier; and
>
> [d] sending the received first content, to the second server over the established TCP connection, in response to the receiving of the first content identifier.

Ex. 1001, 19:18–31.

II. ANALYSIS OF PATENTABILITY OF CLAIMS 1, 2, 6–11, 13, AND 15–24

A. The Parties' Arguments

In our Decision on Institution, we concluded that the arguments and evidence advanced by Petitioner demonstrated a reasonable likelihood that at least one claim of the '510 patent is anticipated or would have been obvious. Inst. Dec. 23–35. Here, we must consider whether Petitioner has established

by a preponderance of the evidence that claims 1, 2, 6–11, 13, and 15–24 of the '510 patent are anticipated or would have been obvious. 35 U.S.C. § 316(e). We previously instructed Patent Owner that "Patent Owner is cautioned that any arguments not raised in the response may be deemed waived." Paper 25, 9; *see also In re NuVasive, Inc.*, 842 F.3d 1376, 1379–82 (Fed. Cir. 2016) (holding patent owner waived an argument in the preliminary response by not raising the same argument in the patent owner response). Additionally, the Board's Trial Practice Guide states that the Patent Owner Response "should identify all the involved claims that are believed to be patentable and state the basis for that belief." Consolidated Trial Practice Guide (Nov. 2019)[11] ("TPG"), 66.

Patent Owner has chosen not to address certain arguments and evidence advanced by Petitioner to support its unpatentability contentions. In this regard, the record contains persuasive arguments and evidence presented by Petitioner regarding the manner in which the prior art discloses or teaches the corresponding limitations of claims 1, 2, 6–11, 13, and 15–24 of the '510 patent and the rationale for combining the asserted obviousness references.

B. Level of Ordinary Skill in the Art

According to Petitioner, a person of ordinary skill in the pertinent art "would have at least a bachelor's degree in Computer Science or related field (or equivalent experience), and two or more years' experience working with and programming networked computer systems as of the Priority Date."

[11] *Available at* https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=.

Pet. 15 (citing Teruya Decl. ¶¶ 25–27). Petitioner further states that "[s]uch a person would be familiar with the underlying principles of Web, Internet, or network communication, data transfer, and content sharing across networks, including the HTTP and TCP/IP protocols." *Id.*

Patent Owner submits that a person of ordinary skill in the art "would have 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." PO Resp. 2 (citing Ex. 2065 ¶ 25). Patent Owner states that "Patent Owner's analysis herein does not change under the Board's preliminary definition of a" person of ordinary skill in the art. *Id.* at 2 (citing IPR2022-01493, Paper 11, 18; Ex. 2065 ¶ 26).

In the Decision on Institution, we adopted the assessment of qualifications offered by Petitioner, which we also adopt here. Inst. Dec. 14–15. The assessment offered by Petitioner is consistent with the '510 patent and the prior art before us. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2021). Under the principles set forth by the Federal Circuit, the "words of a claim 'are generally given their ordinary and customary meaning,'" as would be understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005)

(en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

1. "client device"

a. Petitioner's Assertions

Petitioner asserts that the district court's constructions in the *Teso* district court litigation should apply in this case. Pet. 15–20. In particular, Petitioner points to two claim construction orders in that case—an original order (Ex. 1017) and a supplemental order (Ex. 1020). Petitioner also relies on a claim construction order in *Bright Data Ltd. v. Code200, UAB*, Case No. 2:19-cv-00396 (E.D. Tex.) ("the Code200 Litigation"), which is directed to related patents. Pet. Reply 13 (citing Ex. 1112).

As Petitioner notes, the magistrate judge construed "client device" as "communication device that is operating in the role of a client," and found that "role-based construction applies 'regardless of any additional role the device may serve, including as a server.'" Pet. Reply 13 (citing Ex. 1017, 10–12; Ex. 1112, 13 (emphasis omitted)). Petitioner argues that the district court has repeatedly addressed and rejected Patent Owner's arguments on the claim construction for this term. *Id.* (citing Ex. 1112). Petitioner indicates that the magistrate judge's constructions were adopted by the district judge. *Id.* (citing Ex. 1113; Ex. 1114). Petitioner also refers to the

district court's ruling that precluded Patent Owner from arguing that "a client device cannot be a server." *Id*. (citing Ex. 1116, 4). Petitioner additionally refers to the claim construction order in *Bright Data Ltd. v. NetNut Ltd*., No. 2:21-cv-225 (E.D. Tex.) ("the *NetNut* litigation"), in which the district court rejected a proposed construction of the term "client device" as a "consumer computer." *Id*. at 13 n.6 (citing Ex. 1115, 10–16). Petitioner refers to RFC 2616, which is referenced in the '510 patent, and asserts that it "confirms that 'client' means 'program that establishes connections for the purpose of sending requests,'" where "[a]ny given program may be capable of being both a client and a server; our use of these terms refers only to the role being performed by the program for a particular connection." *Id*. at 15–16 (citing Ex. 1013, 8 (emphases omitted); Ex. 1001, 16:21–22.).

In further support, Petitioner points to the '510 patent Specification, where "a 'client device' is an entity that receives the content from the intermediate agent device." Pet. 20 (citing Ex. 1001, 9:27–36). Petitioner asserts that "the same device [client device], thus acting as a 'client' for one content retrieval, can also act, in another content retrieval in the same system, as one the of the intermediate 'agent' nodes, and also operate in the role of a server," which is consistent with the district court's construction.

Petitioner also refers to a mapping of Figure 3 of the '510 patent showing the claimed elements, as shown in annotated Figure 3 below. Pet. 18–19.

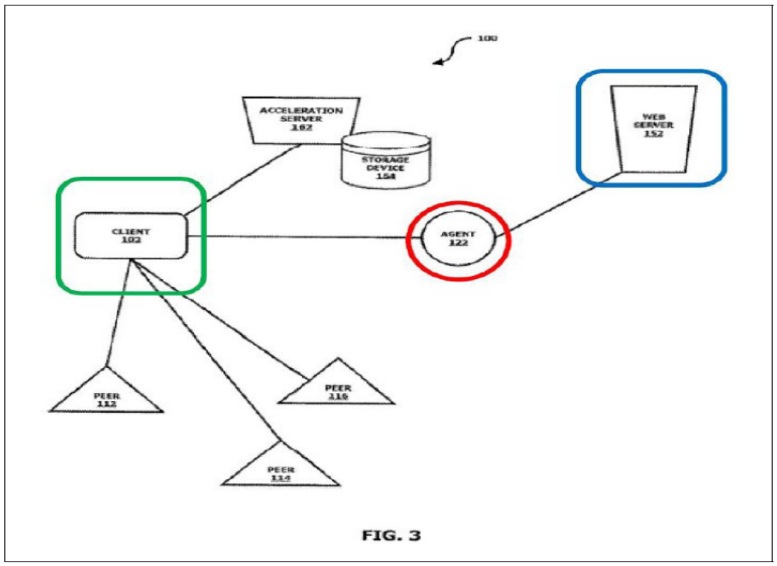


FIG. 3

As shown in annotated Figure 3, above, Petitioner contends that the "second server" is marked in green (client 102), the "client device" is marked in red (agent 122), and the "first server" is marked in blue (web server 152), which is "a logical and reasonable mapping." Pet. 18–19. Petitioner points out that this is the mapping that Patent Owner used in briefing in a related litigation. *Id*. (citing Ex. 1004, 19–20).

Petitioner also asserts that under Patent Owner's proposed claim construction a "client device" has to: (1) be a "consumer computer;" (2) be "typically portable and easily moved;" (3) be "not a dedicated network element;" (4) use single or relatively few connections;" (5) be "resource limited (e.g., bandwidth and storage), unlike a server;" (6) be "regularly switched off and taken offline;" (7) be "capable of processing only a limited number of requests at any given time;" and (8) have "lesser fault tolerance, lesser reliability, and lesser scalability, prioritizing value to client device users over system costs." Pet. Reply 1–2 (citing PO Resp. 25–28; Ex. 2065 ¶¶ 120, 124–125; Ex. 1111, 53:24–54:8:1). Petitioner argues that these

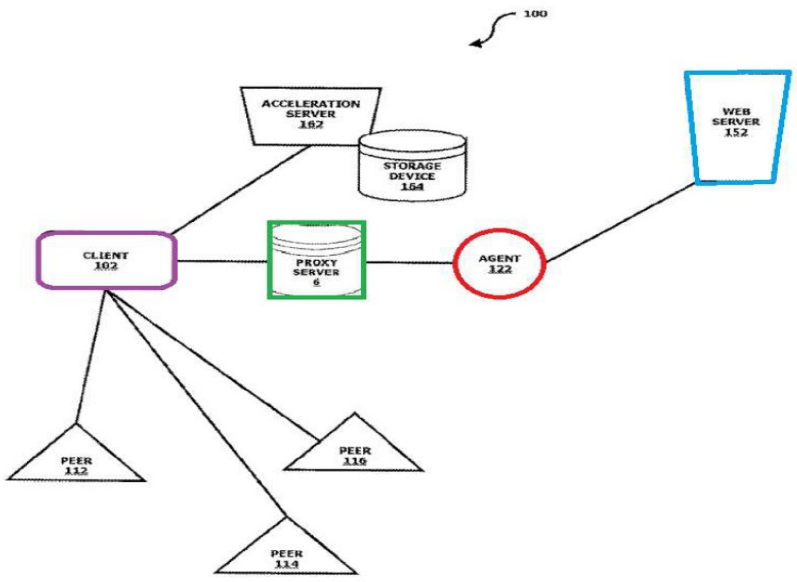
characteristics are highly subjective, indefinite, and not supported by the Specification. *Id*. at 2–6.

b. Patent Owner's Assertions

Patent Owner asserts that a person of ordinary skill in the art would understand the term "client device" to mean "a consumer computer" or a "consumer communication device." PO Resp. 23 (citing Ex. 2065 ¶ 114). Patent Owner argues that these constructions are consistent with the term's plain and ordinary meaning, the Specification, the prosecution histories, and extrinsic evidence. *See id*. at 23–28. Patent Owner contends that the district court claim constructions should be applied, but argues that Petitioner has deviated from the district court's construction of the term "client device" because there is no attribution of special meaning to the term "communication device." *Id*. at 8. Patent Owner further asserts that in the *NetNut* litigation, the district court "expressly rejected removing the word 'communication' from its construction of" the term "client device." *Id*. at 10 (citing Ex. 2021, 14) (emphases omitted)). Patent Owner argues that Petitioner only applies role-based constructions and "treat[s] client devices and servers as interchangeable general purpose computers." *Id*. at 9. Instead, Patent Owner argues, the district 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 . . . is not simply any device that communicates over the Internet." *Id*. Patent Owner argues that purely role-based constructions "contradict the Court's Orders because they refer to generic devices operating in a particular role," and they "fail to

account for the physical/structural differences between client devices and servers." *Id.* at 10.

Patent Owner alleges that the Specification discloses how a communication device can be configured to be a client, agent, or peer so a person of ordinary skill in the art would understand client 102 and agent 122 to both be client devices. PO Resp. 6 (citing Ex. 1001, 4:46–52, 5:23–31, 9:14–51, 15:39–42, 15:51–52, Fig. 6; Ex. 2065 ¶¶ 56–58). Patent Owner contends that a person of ordinary skill "would understand that proxy server 6 of Figure 1 could be inserted between client 102 and agent 122 of Figure 3," with the result being modified Figure 3, reproduced below. *Id.* at 7–8 (citing Ex. 2065 ¶ 59).



Patent Owner alleges that, as shown in modified Figure 3 above, a person of ordinary skill in the art would understand that client device ↔ second server ↔ first client device ↔ web server would correspond to client 102 (purple) ↔ proxy server 6 (green) ↔ agent 122 (red) ↔ web server 152 (blue) of

modified annotated Figure 3. PO Resp. 7–8 (citing Ex. 2065 ¶ 59). Patent Owner further argues that the Specification distinguishes between servers and client devices and "[u]nder Petitioners' application of their purely role-based constructions, there would be nothing to distinguish intermediary proxy server 6 (which is a server) from intermediary agent 122 (which is a client device)." PO Sur-reply 8 (citing PO Resp. 14–18).

Patent Owner further asserts that a person of ordinary skill in the art would understand that "a client device is typically portable and easily moved, like, for example, a laptop, desktop, tablet or smartphone." PO Resp. 26 (citing Ex. 2065 ¶ 124). Patent Owner contends that a person of ordinary skill's understanding is evidenced by extrinsic evidence, with "a definition of a client as 'an application that runs on a personal computer or workstation and relies on a server to perform some operations.'" *Id.* at 27 (citing Ex. 2035; Ex. 2036, 5; Ex. 2037, 7; Ex. 2065 ¶ 126). Patent Owner contends that a person of ordinary skill in the art would understand that a client device typically (a) is regularly switched off and taken offline; (b) is capable of processing only a limited number of requests; and (c) has lesser fault tolerance, lesser reliability, and lesser scalability. *Id.* (citing Ex. 2065 ¶ 125). Patent Owner argues that a person of ordinary skill in the art "would understand there are structural differences between client devices and servers in the context of the specification." *Id.* at 28 (citing Ex. 2065 ¶ 128). Patent Owner contends that a person of ordinary skill in the art would be informed by statements made during prosecution that a client device is not a dedicated network device, typically uses a single or relatively few

connections, and is resource limited (e.g., bandwidth and storage), unlike a server. *Id*. at 26–27 (citing Ex. 2065 ¶ 124).

Patent Owner acknowledges that the district court rejected Patent Owner's construction equating "client device" with "consumer computer." PO Resp. 23. Patent Owner argues, however, that the district court's rejection of its proposed construction of a "client device" as "consumer computer" is wrong for three reasons. *Id.* at 23–25. First, Patent Owner asserts that, although the district court found that there was no express lexicography in the Specification, the Specification states that "computers of consumers" are "referred to herein as client devices." *Id*. at 23 (citing Ex. 1001, 2:47–49). Patent Owner further contends that the Specification indicates a special meaning for the term and a person of ordinary skill in the art "would understand a 'client device' is a consumer computer in the context of the '510 Patent." *Id*. at 23–24 (citing *Kyocera Senco Indus. Tools, Inc. v. ITC*, 22 F.4th 1369, 1379 (Fed. Cir. 2022)). Second, Patent Owner disagrees with the district court's finding that in the Specification the term "consumer" refers to the consumer of content, as opposed to a broadcaster of content. *Id*. at 24 (citing Ex. 1017, 11). Rather, Patent Owner argues, the common understanding of "consumer" is "a person who buys goods or services for their own use" or "someone who buys goods or services for personal use." *Id*. (citing Ex. 2030; Ex. 2031, 5; Ex. 2032, 4; Ex. 2033; Ex. 2034, 4; Ex. 2065 ¶ 121; 15 U.S.C. § 6809(9); 12 C.F.R. § 332). Third, Patent Owner disagrees with the district court's finding that the term "consumer" does not appear to be used in connection with the claimed invention, contending that the Specification refers to "computers of

consumers," and that relevant statements were made in the prosecution history. *Id*. at 25 (citing Ex. 1017, 11).

Patent Owner contends that in the context of the '510 patent, "a client device is not a server." PO Resp. 25. Patent Owner disagrees with the district court's view that there was insufficient support for including a negative limitation in the construction of client device, namely, that a client device is unable to act as a server in all cases. *Id*. (citing Ex. 1017, 12). Patent Owner further asserts that the district court did not have the benefit of the detailed discussion provided by Patent Owner concerning Figures 1 and 3. *Id*. (citing Ex. 2065 ¶ 131). Patent Owner submits that "under the purely role-based constructions, a client device may operate in the role of a server at some points in time, but that does not transform a physical client device into a physical server," and a person of ordinary skill in the art would understand that a client device is not a server in view of the '510 patent. *Id*.

Patent Owner contends that, in view of the recited architecture of the '510 patent claims that distinguishes between client devices and servers, the use of three interchangeable devices in a pathway would not disclose that architecture. PO Resp. 13 (citing Ex. 2065 ¶¶ 75–76). Patent Owner also argues that the recited architecture in the '510 patent claims, that is, a second server ↔ first client device ↔ web server architecture, also distinguishes the non-interchangeability and non-role-based nature of the devices, and these distinctions are consistent with an *Alice*[12] order in the *Teso* district court litigation. *Id*. at 12–13 (citing Ex. 2065 ¶¶ 75–76, 80; Ex. 2024, 6–11); PO Sur-reply 6–7. Patent Owner refers to the district court's finding that found

[12] *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

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." *Id.* at 13 (citing Ex. 2024, 9).

Patent Owner also contends that, upon reviewing Figures 1 and 3 of the Specification, a person of ordinary skill in the art would have understood that proxy server 6 must be structurally different from agent 122 and that "a server is not a client device and that a client device is not a server." PO Resp. 15 (citing Ex. 2065 ¶ 83). Patent Owner argues that under "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," so under the Board's preliminary constructions "Figure 3 collapses onto Figure 1" and fails to account for structural differences between a proxy server and a client device. *Id.* More specifically, Patent Owner contends that, as shown in Figure 1, under role-based constructions, "proxy server 6 (i) receives requests from client devices 14, 16 and (ii) sends requests to web server 32," so "proxy server 6 would be (i) operating in the role of a server and (ii) operating in the role of a client." *Id.* at 16 (citing Ex. 2065 ¶ 86). Patent Owner asserts that for Figure 3, under role-based constructions, "agent 122 (i) receives requests from client devices and (ii) sends requests to web server 152," so "agent 122 would be (i) operating in the role of a server and (ii) operating in the role of a client." *Id.* at 17–18 (citing Ex. 2065 ¶¶ 91–92). Patent Owner argues that with proxy server 6 of Figure 1 and agent 122 of Figure 3 operating in the same roles at a given point in time, "there is nothing to distinguish the architectures of Figures 1 and 3." *Id.* at 18 (citing Ex. 2065 ¶ 93). Patent Owner asserts that "purely role-based constructions

are not appropriate because they fail to account for these structural differences between proxy servers and proxy client devices." *Id*. at 18 (citing Ex. 2065 ¶ 94).

Patent Owner additionally refers to the prosecution history of U.S. Patent No. 10,069,936 ("the '936 patent"), the grandparent of the '510 patent. PO Resp. 19–22. Patent Owner argues that this prosecution history "clearly distinguishes client devices from servers." *Id*. at 19 (citing Ex. 2065 ¶ 97). Patent Owner asserts that during prosecution, the applicant "repeatedly argued that client devices are different from servers." *Id*. (citing Ex. 2026, 163–164, 96–97). Patent Owner points to the applicant's statement that "[t]here is a clear distinction in the art and as taught by the Garcia reference between clients and servers," and "[c]lient devices, such as client 105 in the Garcia reference, 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." *Id*. at 20 ((citing Ex. 2026, 163) (emphases omitted)).

Additionally, Dr. Williams refers to the examiner's statement 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. 2065 ¶ 98 (citing Ex. 2026, 124). Dr. Williams testifies that "the examiner recognized a

server cannot be equated to a client device regardless of the role being performed at a given moment in time." *Id.* ¶ 99.

Patent Owner asserts that "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.'" PO Resp. 21 (citing Ex. 2026, 44 (emphasis omitted)). Patent Owner contends that this "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." *Id.* (citing Ex. 2065 ¶ 102). Patent Owner also refers to the prosecution history of the '319 patent, which is the parent of the '510 patent, asserting that it shows that servers and client devices are not interchangeable general use computers. PO Resp. 21 (citing Ex. 2065 ¶ 104). During prosecution of the '319 patent, the applicant contended 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." *Id.* (citing Ex. 2066, 282). Patent Owner further cites to the applicant's statement that "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." *Id.* at 22 (citing Ex. 2066, 282–283 (emphases omitted)).

Patent Owner also refers to the prosecution history of the '510 patent, arguing that the examiner acknowledged the "environment" of the claimed method, which "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." *Id.* at 22–23 (Ex. 2065 ¶ 108).

c. Analysis

For the reasons discussed below, we determine that the evidence of record supports the district court's construction of the term "client device" as a "communication device that is operating in the role of a client" which we adopted in our Institution Decision and we apply here in view of the full record. *See* Inst. Dec. 17. Conversely, we find that the evidence does not support Patent Owner's view that a "client device" is a "consumer computer," or alternatively, a "consumer communication device," where the "client device" cannot be a server. *See* PO Resp. 23.

i. Claim Language

Under *Phillips*, we begin with the language of the claims themselves. *See Phillips*, 415 F.3d at 1314. In claim 1, the steps of the claims are performed by a "first client device." In step 1[b], the first client device, "send[s], to the web server over the Internet, the first content identifier," which serves to request content from the web server. *See* Ex. 1001, 19:24–25. In step 1[b], the first client device is acting as a client in requesting content. In step 1[d], the first client device "send[s] the received first

content, to the second server." *See id*. at 19:29–30. In step 1[d], the first client device is acting as a server to forward content.

The parties address the issue that the "first client device" acts in differing roles in claim 1. Petitioner asserts that the claim's required functionality is consistent with the district court's determinations on the role-based nature of the term. Pet. 16, 18–19 (citing Ex. 1020, 10); Pet. Reply 13–16 (citing Ex. 1017, 10–12; Ex. 1112, 13; Ex. 1020, 8–11; Ex. 1113; Ex. 1114; Ex. 1001, 5:51–6:42, 9:21–27; Ex. 1126, 8; Ex. 1004, 19–20). Patent Owner agrees that if the role-based construction were adopted, for Figure 3, "agent 122 (i) receives requests from client devices and (ii) sends requests to web server 152," so "agent 122 would be (i) operating in the role of a server and (ii) operating in the role of a client." PO Resp. 17–18 (citing Ex. 2065 ¶¶ 91–92).

Petitioner refers to Patent Owner's assertions in the *Teso* district court litigation, where Patent Owner identified client 102 with the "second server" and agent 122 with the "first client device" as shown in annotated Figure 3 and an annotated version of claim 1 of the '510 patent, reproduced below. Pet. Reply 14–15 (citing Ex. 1126, 8; Ex. 1004, 19–20).

Although each of the Asserted Claims involve methods performed within a **server** – **client device** – **web server** architecture, the claim terms differ int hat the "first" **server** in the '319 and '510 Patents is referred to as the "second" **server** in the '614 Patent. Fig. 3 is annotated below to illustrate the claimed steps [A], [B], [C], [D], and/or [E] performed by the **client device** in conjunction with the **server** and **web server**.

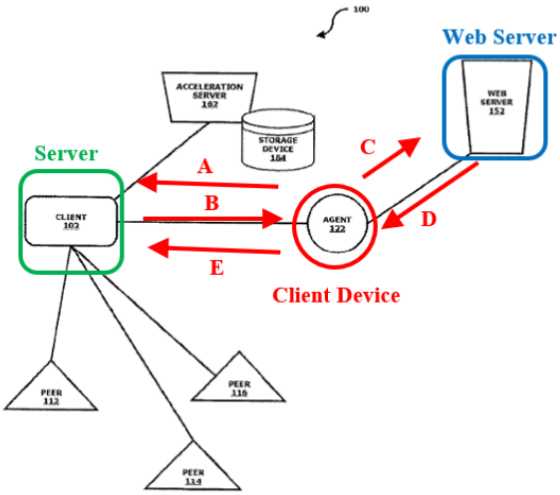


FIG. 3

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:

[A] establishing a Transmission Control Protocol (TCP) connection with a **second server**;

[C] sending, to the **web server** over an Internet, the first content identifier;

[D] receiving, the first content from the **web server** over the Internet in response to the sending of the first content identifier; and

[E] sending the received first content, to the **second server** over the established TCP connection, [B] in response to the receiving of the first content identifier.

Ex. 1126, 8–9 (omitting assertions for '319 patent). As shown in annotated Figure 3 above, Patent Owner equated client 102 (green) to the "second server" and agent 122 (red) to the "first client device" in accordance with the roles required in the claim elements.[13]

[13] We recognize that Patent Owner modified its position in its Response to assert that both client 102 and agent 122 are client devices. PO Resp. 6–7 (citing Ex. 2065 ¶¶ 56–59). We address the issue of two devices acting as

That is, Patent Owner asserted that the "first client device" (shown in red) is equivalent to agent 122, which sends the first content identifier to the web server, receives content requested from the web server, and sends that content to client 102 (the second server). Thus, under Patent Owner's presentation, the "first client device" (agent 122) is acting as a client when it sends the first content identifier to the web server and receives content in response, and is acting as a server when it sends content to client 102. This assertion by Patent Owner reflects a role-based interpretation of the claim terms; different devices shown in Figure 3 are identifiable as the recited clients or servers based on their functionality.

The district court found that the interpretation of the term "client device" should be consistent with its role and claimed functionality, and we agree. More particularly, the district court indicated that the function performed by a recited component serves to define the recited component. Ex. 1020, 7–11. For instance, the district court found that under the steps of a claim, a "client device" operates as an intermediary to perform steps including "send[ing], to [a] web server over an Internet, the first content identifier" to request content and also "sending the received first content." Ex. 1017, 3–4; *see also* Ex. 1020, 10. Consistent with the claim language, the district court recognized that "a component can be *configured* to operate in different roles—so long as it does not 'simultaneously serve as more than one of: the client device, the first server/second server, and the web server.'" Ex. 1020, 10. That is, although the district court determined that a single

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client devices below in the discussion on modified Figure 3 under Dr. Williams' testimony.

component could not simultaneously serve more than one function at any particular time, components could operate in different roles, such as the claimed "client device." *Id*. We agree with the district court's construction of "client device" as a "communication device that is operating in the role of a client" because this interpretation is consistent with the limitations of the claims. *See* Ex. 1017, 12.

We note that Patent Owner's argument that a client device is not a server (PO Resp. 15, 25) is not supported by the claim language, which describes a "client device" acting as a client to request content from the web server, as well as acting as a server to forward content under the method claims. We discuss this issue further below in more detail.

ii. Specification

The district court's interpretation of the term "client device," adopted here, is also consistent with the '510 patent Specification. The '510 patent Specification, when describing the "multiple communication devices" depicted in Figure 3, states that the same components may assume different roles:

> *Due to the 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.

Ex. 1001, 4:46–50 (emphases added). Accordingly, the Specification states that the components identified in Figure 3 may perform different functions based on their stored software. *Id*. More specifically, the Specification explains that "each of [the software modules] comes into play *according to the specific role that the communication device 200 is partaking* in the

communication network 100 *at a given time*." Ex. 1001, 9:20–25 (emphasis added). The Specification thus supports the role-based identification of the network components, with components operating in different roles at different times, which is consistent with the claim language.

In opposition, Dr. Williams testifies that a person of ordinary skill in the art, when considering Figure 6 and associated text, would understand 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*." Ex. 2065 ¶ 117 (emphases added). Dr. Williams further testifies, similar to the discussion for modified Figure 3, reproduced *supra,* Section II.C.1.b (Patent Owner's assertions), that a person of ordinary skill in the art would understand that client 102 (in purple) corresponds to the *requesting client device* and agent 122 (in red) corresponds to the *proxy client device*. *Id.* ¶¶ 118–119. Dr. Williams testifies that "[a]gent 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." *Id.* ¶ 119.

We do not find that the evidence of record supports Patent Owner's assertions on this issue. Dr. Williams' testimony, and Patent Owner's arguments, are based upon a modified version of Figure 3, in which Patent Owner has inserted "proxy server 6" between "client device" and "agent." We do not discern that this configuration is shown in any figure of the '510 patent or disclosed in the Specification, and, consistent with this, Dr. Williams testifies that proxy server 6 shown in prior art Figure 1 was cut out and pasted into Figure 3. *See* Ex. 1001; Ex. 1111, 112:20–24. Dr. Williams also testifies that a person of ordinary skill in the art "would understand that

proxy server 6 of Figure 1 *could be* inserted between client 102 and agent 122 of Figure 3." Ex. 2065 ¶ 59 (emphasis added). Dr. Williams combines the "proxy server 6" of the prior art shown in Figure 1 and the invention of Figure 3. Ex. 1001, 2:8–18, 2:24–32, 4:41–45. But Dr. Williams provides no specific explanation or a rationale to combine this prior art with this embodiment of the invention.[14] Further, Dr. Williams testifies that different "client devices," i.e., a "requesting client device" and a "proxy client device," are disclosed, but we do not find that these characterizations are disclosed in the Specification. In view of the lack of record support, we afford little weight to Dr. Williams' testimony on this issue.

Thus, in view of the '510 patent Specification's disclosures, we do not agree that it discloses the architecture of a requesting client device ↔ proxy server ↔ proxy client device ↔ web server in the first place, as Patent Owner asserts. *See* PO Resp. 7–8 (citing Ex. 2065 ¶ 59). Moreover, we do not agree that Patent Owner's argument based upon alleged "architecture" (*id*. at 13) should govern the construction of "client device" in light of the

[14] At his deposition, Dr. Williams further testified that "a POSA [person of ordinary skill in the art] would understand that other network elements can be present within the diagram of Figure 3. And a well understood network element would be a proxy server, as is clearly disclosed in Figure 1, that a proxy server can be inserted into a network," as well as "just as with routers, a POSA would understand that a proxy server is a normal network element to be inserted within a network, as was disclosed in Figure 1." Ex. 1111, 112:7–12, 113:8–11. However, even if a person of ordinary skill in the art knew that the modification *could* be done, Figure 3, as modified by Patent Owner, is not disclosed in the '510 patent and Patent Owner does not explain why the modified version of the Figure should direct claim construction.

claim language and the Specification's disclosures demonstrating that communications devices may serve in different roles due to the functionality provided by software stored within each communication device, which comes into play depending on the specific role that the communication device takes at a given time. *See* Ex. 1001, 4:46–53, 9:20–26. The district court agreed, finding that "a component can be configured to operate in different roles—so long as it does not 'simultaneously serve as more than one of: the client device, the first server/second server, and the web server.'" Ex. 1020, 10 (emphasis omitted).

Patent Owner also argues that the district court's findings in the *Alice* order in the *Teso* district court litigation (Ex. 2024) are consistent with its understanding of the architecture required by the claims of the '510 patent. PO Resp. 12–13 (citing Ex. 2065 ¶¶ 75–76, 80; Ex. 2024, 6–11). We do not find that the district court's *Alice* order alters or modifies the claim construction the court adopted there, and that we adopt here. The order addressed a Motion for Judgement on the Pleadings Under Fed. R. Civ. P. 12(c). Ex. 2024, 1. The *Alice* order addressed patent eligibility, not claim construction. *See id*. at 1–12. Moreover, the district court's *Alice* order acknowledged the court's prior claim construction, that is, the construction of the term "client device" as "communication device that is operating in the role of a client," and did not modify that construction. *Id*. at 5. Further, after the *Alice* order issued in February, 2021, the district court consistently

maintained its claim constructions with the adoption of the magistrate judge's claim construction order in September, 2021. *Id*. at 16; Ex. 1114.

Patent Owner argues that in the '510 patent, "a client device is not a server." PO Resp. 15, 25. We do not agree. As discussed above, we discern no limitation in the intrinsic record that a client device could not operate as a server. To the contrary, as also discussed above, the claim language provides that the first client device acts as a client in step 1[b] to request content, and acts as a server in step 1[d] to forward content. *See* Ex. 1001, 19:24–31. Patent Owner has agreed that under the claim language, a device can have different functionality, as discussed above. This is also consistent with the district court's view that Patent Owner's argument "that a client device is specifically not a server—is not supported by the specification." Ex. 1020, 10 (quoting Ex. 1017, 11). The district court refers to the Specification's disclosure that a "communication device" may act as a client, peer, or agent. Ex. 1017, 11–12 (citing related '319 patent, 4:48–49). The district court also found, and we agree, that although the patent does not list "servers" as "communication devices," "that is not sufficient to construe 'client device' as unable to act as a server in all cases," in view of the case law that negative claim limitations are "supported when the specification describes a reason to exclude the relevant limitation." *Id*. at 12 (citing *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (Fed. Cir. 2012). Moreover, we note that under Patent Owner's analysis in the *Teso* district court litigation, the claimed "first client device," which may act as a server in claim 1, is identified as "Agent 122" of Figure 3. Ex. 1126, 8–9. As discussed, the Specification provides support that an agent can act in

different roles with software modules allowing different functions. Ex. 1001, 4:46–50.

Patent Owner also asserts that under a "role-based" construction, "Figure 3 collapses onto Figure 1." PO Resp. 15. According to Patent Owner, such constructions "do not account for structural differences between a proxy server (in Figure 1) and a proxy client device (in Figure 3)." *Id*. Patent Owner casts the alleged invention as being directed to the exclusion of "a proxy client device encompassing a proxy server." *Id*. at 43–44 (Ex. 2065 ¶ 50). We do not agree with Patent Owner's arguments as they are based solely on an alleged proxy server and its structure as the point of differentiation between the invention and the prior art. The Specification makes it clear that the devices identified by Patent Owner are capable of assuming different roles, and the Specification instead points to other alleged improvements, such as the agent performing different functions and the use of an acceleration server, that serve to differentiate the disclosed invention from the prior art. Ex. 1001, code (57), Fig. 10. Here, the language that the applicant ultimately chose for claim 1 does not recite some improvements, such as the use of an acceleration server, described in the Specification. Instead, the applicant more broadly recited in claim 1 the use of a "first client device" that functions as a proxy, that is, it acts as a client and as a server at different times, as discussed above.

Accordingly, we agree with the district court's finding that "the client device is defined by the role of the communication device as a client rather than by the components of the device and regardless of any additional role the device may serve, including as a server." Ex. 1112, 13. Petitioner also

points to buttressing evidence in RFC 2616, which defines the terms "client" and "server" based on their roles, whereby "[a]ny given program may be capable of being both a client and a server; our use of these terms refers only to the role being performed by the program for a particular connection." *See* Pet. Reply 15–16 (citing Ex. 1013, 8 (emphases omitted); Ex. 1001, 16:21–22.). Thus, we determine that the weight of the evidence supports the conclusion that a "client device" as recited in the claims of the '510 patent may act as a server as well as a client.

Patent Owner asserts that under an "application of the purely role-based constructions, an intermediary device would be both a 'client device' and a 'second server' albeit at different points in time," that is, Patent Owner's view is that a device must operate as a client or server device only. PO Sur-reply. 13. We disagree with Patent Owner's assertions that under a proper construction of the term "client device," the device has to act exclusively in only one role with one function at all times. As discussed, the claim language and Specification support that specific devices may operate to perform different functions and roles. In fact, to require that a device operate exclusively only in a single role and not be able to operate in different roles at different times is inconsistent with the language of claim 1, where the first client device has to act as a client and as a server at different times. The district court considered the issue of whether one component could *simultaneously* serve as more than one of: the client device, the first server/second server, and the web server. Ex. 1112, 14. The district found that a single component could not simultaneously do so because the components were separately recited, which indicated a distinction between

the components. *Id*. at 14–15. Nevertheless, the district court further characterized Patent Owner's argument as asserting that Petitioner was seeking "to treat client devices and servers interchangeably" as "general user computers," but the court explained that this was "an oversimplification of the issue" because Petitioner was not seeking to "reduc[e] the recited server ↔ client device ↔ web server architecture . . . and the recited client device ↔ server ↔ web server architecture . . . *as an indistinguishable computer* ↔ *computer* ↔ *computer architecture*." Ex. 1020, 10 (emphasis added). Rather, the district court determined, and we agree, that "a component can be configured to operate in different roles—so long as it does not 'simultaneously serve as more than one of: the client device, the first server/second server, and the web server.'" *Id*. (emphasis omitted).

Patent Owner additionally argues that a "client device" is a "consumer computer" because the Specification states that "computers of consumers" are "referred to herein as client devices." See PO Resp. 23 (citing Ex. 1001, 2:44–46). Our view is that Patent Owner takes the Specification's disclosure out of context. The "computers of consumers" discussed in the Specification are computers used in the prior art peer-to-peer filing sharing system known as BitTorrent. Ex. 1001, 2:40–52. The Specification identifies "client devices 60," but this designation is used only in the prior art peer-to-peer filing sharing system, which is distinguished from the invention. *See id*. at 2:40–3:9, 4:1–2, Fig. 2. The district court agreed, finding that "[n]otably, 'consumer' does not appear in connection with the description of the claimed inventions." Ex. 1017, 11 (emphasis omitted). We also agree with the district court's finding that the Specification

discloses that "'consumer' simply means a consumer of content, as opposed to a broadcaster of that content," which is contrary to Patent Owner's argument that the client device should be a consumer device for personal use. Ex. 1017, 11; *see also* Ex. 1001, 1:54–59; PO Resp. 23.

Patent Owner additionally asserts that a person of ordinary skill would have understood that, among other things, a client device is portable and would be regularly switched off and taken offline, would be capable of processing only a limited number of requests at any given time, and would have lesser fault tolerance. PO Resp. 26–27. Patent Owner contends that a person of ordinary skill in the art would have understood that a consumer device is not a dedicated proxy server. *Id*. at 26 (citing Ex. 2065 ¶ 120). Dr. Williams testifies that his understanding is based on the Specification, statements made during prosecution, and by comparison with a server. Ex. 2065 ¶ 120. We discuss the prosecution history below, but notably, Dr. Williams does not identify any portions of the Specification that support the alleged structure and nature of the client device, except for the discussion related to the prior art BitTorrent peer-to-peer system, which we do not find applicable for the reasons discussed above. *Id*. Petitioner argues that the alleged characteristics for a "client device" are highly subjective and indefinite and are not supported by the Specification (Pet. Reply 2–6), and we agree.

Accordingly, we find that the '510 patent Specification's disclosures support the interpretation of the term "client device" as a "communication device that is operating in the role of a client."

iii. Prosecution History

Patent Owner argues that the prosecution history of the '510 patent, its parent (the '319 patent), and its grandparent the '936 patent support the conclusion that the claimed "client device" should be distinguished from a server. PO Resp. 18–23.

Patent Owner points to statements in the prosecution history of the grandparent '936 patent concerning the Garcia prior art reference that was used as the basis of an examiner rejection. PO Resp. 19–21 (citing Ex. 2026, 44, 77, 96–97, 163–164, 172, 215; Ex. 2065 ¶¶ 97, 99, 102). More specifically, Patent Owner asserts that the applicant argued that the cache server 306 of Garcia is clearly a dedicated device and performs a server functionality. *Id*. at 19 (citing Ex. 2026, 215). Patent Owner refers to the examiner's responses and asserts that "[t]he examiner recognized a server cannot be equated to a client device regardless of the role being performed at a given moment." *Id*. at 20 (citing Ex. 2065 ¶ 99). Patent Owner also refers to statements made by the applicant distinguishing Garcia, including that in Garcia client devices "are typically consumer owned and operated." *Id*. at 20 (citing Ex. 2026, 163) (emphasis omitted). Patent Owner asserts that in the Notice of Allowance, the examiner stated that "the limitations of the independent claims, **within its environment**, is allowable subject matter over the prior art." *Id*. at 21 (citing Ex. 2026, 44).

The claims that were under consideration in the '936 patent's prosecution were different than the claims at issue here. A "client device" was not recited in the claims that were under examination then; rather, the claims recited either a "device," "client communication device," or

"client(s)." *See, e.g.,* Ex. 2026, 205–215. Similarly, the issued claims in the '936 patent recite a "requesting client" and a separate "client," and the issued claims have multiple steps that differ from those of the '510 patent. *See* Ex. 2025, 19:16–52. Given these differences, we discount the significance of statements made during the patentability assessment of the '936 patent's claims to the assessment of claim construction for the '510 patent's claims.[15] Further, considering the varying terms used, we do not find that the applicant's statements during prosecution of the '936 patent regarding a recited "device" or "client" are sufficient to act as a disclaimer of the scope of the "client device" term used in the claims here. *See* Ex. 2026, 205–215; *In re Am. Acad. Of Sci. Tech Ctr.*, 367 F.3d 1359, 1365 (Fed. Cir. 2004); *Epistar Corp. v. ITC*, 566 F.3d 1321, 1335 (Fed. Cir. 2009) (disavowal of claim scope by a patentee requires "expressions of manifest exclusion or restriction."). Also, the examiner's statements do not reflect an understanding of any disavowal of the scope of any claim terms. *See* Ex. 2026, 44.

Additionally, as discussed above, the '510 patent's claim language and Specification clearly support a role-based interpretation of the term "client device." In contrast, the '936 patent prosecution is for a grandparent of the '510 patent and also involved evolving claim terms undergoing amendments. *See Telcordia Techs., Inc. v. Cisco Sys., Inc.*, 612 F.3d 1365, 1375 (Fed. Cir. 2010) ("[P]rosecution history comments cannot trump the

[15] We note that although the examiner found that Garcia alone did not teach some steps of the '936 patent's claims, the examiner nonetheless found that Garcia taught a "client" for many of the limitations. Ex. 2026, 124–125, 173–175, 458–460.

plain language of the claims and the direct teaching of the specification."). For this reason, we find the '936 patent prosecution history to be less pertinent to the construction of the '510 patent's claims than the claim language and Specification of the '510 patent itself. As the Federal Circuit has explained, because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. *See Inverness Med. Switz. GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1380–82 (Fed. Cir. 2002) (the ambiguity of the prosecution history made it less relevant to claim construction); *Phillips*, 415 F.3d at 1317. This is particularly true here, where the prosecution history at issue involves a grandparent application with different claims having different claim language from the patent and claims under review.

Patent Owner also presents arguments based on the prosecution history of the '319 patent, which is a parent to the '510 patent. PO Resp. 21–22. Patent Owner refers to the applicant's argument 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." *Id.* at 21 (citing Ex. 2066, 282). Patent Owner also cites the applicant's assertion that: "[i]t 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." *Id.* at 22 (citing

Ex. 2066, 282–283 (emphases omitted)). Patent Owner further cites the examiner's statement in the Notice of Allowance that "the limitations of the independent claims, within its environment, is allowable subject matter over the prior art, in light of the specification." *Id*. (citing Ex. 2066, 50 (emphases omitted)).

Patent Owner's arguments based on the '319 patent's prosecution history concern patent eligibility, not claim construction. Based on our review of this prosecution history, we find that the applicant's statement addressed specific issues relating to patent eligibility, such as whether the claim recited the use of generic computers and functions for purpose of eligibility under 35 U.S.C. § 101, and that the applicant made no statement that indicated disclaimer of the scope of the claim term "client device." *See* Ex. 2066, 282–283.

Patent Owner additionally refers to the prosecution history of the '510 patent and the examiner's statement that the "environment" of the claimed methods supported patentability. PO Resp. 22–23. We do not discern that there is any disavowal of claim scope by the applicant in the prosecution history of the '510 patent, nor does the examiner indicate an understanding of any disclaimer.

iv. Conclusion

Based on evidence of record, we maintain our construction of the term "client device" as a "communication device that is operating in the role of a client."

2. "second server"

The district court construed the term "second server" as a "server that is not the client device," and the defendant in the litigation requested the following clarification: that the term is "a device that is operating in the role of a server and that is not the first client device." Ex. 1017, 14; Ex. 1014, 8. The district court determined that "the clarifications Defendants seek are not inconsistent with the Court's previous findings about the nature of the . . . second server." Ex. 1020, 11.

Petitioner proposes the adoption of the district court's construction of the term. Pet. 16. Patent Owner appears to propose that a server is not a client device, and, more specifically, that the server is structurally different from the client device. PO Resp. 28–31.

Patent Owner's arguments, in the most part, repeat those presented for the "client device." *Compare* PO Resp. 9–23 *with id.* at 28–31. That is, Patent Owner argues that: 1) the recited architecture of the claims is not satisfied by a generic computer ↔ computer ↔ computer architecture; 2) the claim language, specification, and prosecution histories distinguish client devices and servers; 3) a server is structurally different from a client device; and 4) a server is not a communication device or consumer computer and would be a commercial device with certain operational properties. *Id.* at 28–31.

We continue to agree with the district court's interpretation of the claim term, which we have adopted, because it is consistent with the evidence in the record. Of note, the construction requires that the "second server" be a "server," with the court agreeing that it is "a device that is

operating in the role of a server." Ex. 1017, 14; Ex. 1020, 8. This construction is consistent with the role-based interpretation of the claim components, which we discuss *supra* Section II.C.1. That is, the "second server" operates in the "role of a server," but it does not have structural requirements, as Patent Owner argues, short of being able to function in the role of a server. We also agree with the district court's cabining of the "second server" construction to exclude the "first client server." Claim 1 recites that it is the "first client device" that "send[s] the received first content, to the second server" in limitation 1[d], so the "second server" has to be a separate component.

We have addressed the majority of Patent Owner's arguments, *supra* Section II.C.1, that concern alleged required architectural and structural requirements, and the assertion that a "client device" cannot be a server. Patent Owner also argues that the district court indicated that a "server" is not a communication device. PO Resp. 29 (citing Ex. 1020, 10). However, the district court found, and we agree, that "a component can be *configured* to operate in different roles," so long as it does not serve in different roles simultaneously, and that although the Specification does "not include servers as a type of 'communication device,' [] that is not sufficient to construe 'client device' as unable to act as a server in all cases." Ex. 1020, 10. Additionally, in view of the role-based construction for the components, we reject Patent Owner's other arguments on required structure and characteristics of a server. PO Resp. 29–31.

3. Other Terms

We determine that we need not expressly construe any other claim terms to resolve the parties' disputes. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g*, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Principles of Law

A claim is unpatentable under 35 U.S.C. § 102 if a prior art reference discloses each and every limitation of the claimed invention, either explicitly or inherently. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047 (Fed. Cir. 1995); *see MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999) ("To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention;" any limitation not explicitly taught must be inherently taught and would be so understood by a person experienced in the field.); *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991) (the dispositive question is "whether one skilled in the art would reasonably understand or infer" that a reference teaches or discloses all of the limitations of the claimed invention).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying

factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective indicia of obviousness or nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

E. Anticipation of Claims 1, 6, 7, 13 , 15, 16, 18–24 By Crowds

Petitioner contends that claims 1, 6, 7, 13, 15, 16, 18–24 are unpatentable under 35 U.S.C. § 102 because they are anticipated by Crowds. Pet. 22–35. Patent Owner argues that Crowds does not disclose all the limitations of the claims. PO Resp. 31–41.

We begin our discussion with summary of Crowds, and then address the evidence and arguments presented.

1. Crowds (Ex. 1006)

Crowds is an article that "introduce[s] a new approach for increasing the privacy of web transactions." Ex. 1006, 2.[16] In this approach, a user joins a "crowd" of other users, wherein the user's request to a web server is passed to a random member of the crowd, and possibly forwarded to one or more other members, prior to being submitted to the end server. *Id.* In this way, "[w]hen the request is eventually submitted, it is submitted by a random member, thus preventing the end server from identifying its true initiator." *Id.* In Crowds, a user is represented "by a process on her

[16] Unless otherwise stated, citations to exhibits are to the pagination designations added to Crowds, and not to its original pagination. Petitioner uses the pagination designations of the original document.

computer called a *jondo* (pronounced 'John Doe' and meant to convey the image of a faceless participant)." *Id.* at 8. "When the jondo is started, it contacts a server called the *blender* to request admittance to the crowd." *Id.* Exemplary paths for web requests from crowd users are shown in Figure 2, reproduced below:

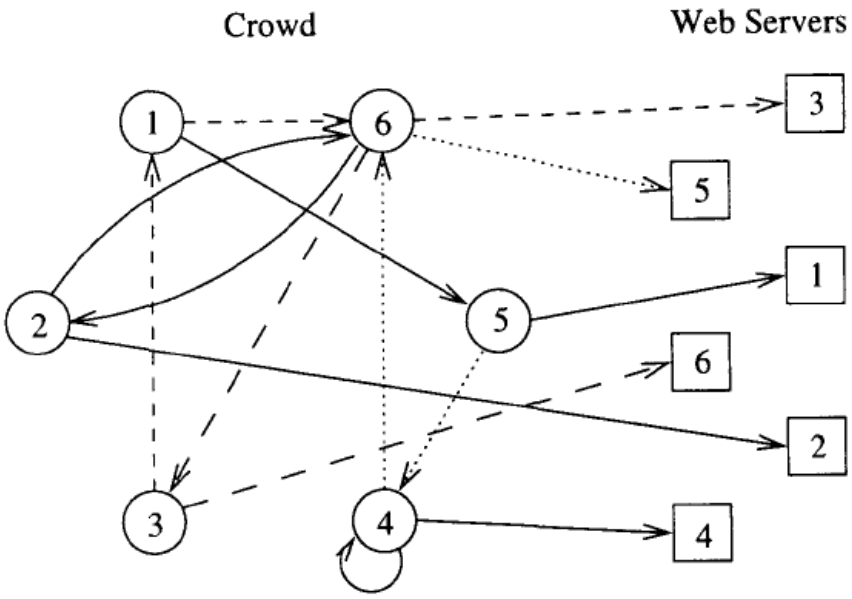


Fig. 2. Paths in a crowd (the initiator and web server of each path are labeled the same).

In Figure 2 of Crowds, above, when a jondo receives a user request from a browser, it "initiates the establishment of a random *path* of jondos that carries its users' transactions to and from their intended web servers." Ex. 1006, 8. For example, the paths in Figure 2 among the jondos labeled 1 to 6 are as follows: "1 → 5 → server; 2 → 6 → 2 → server; 3 → 1 → 6 → server; 4 → 4 → server; 5 → 4 → 6 → server; and 6 → 3 → server." *Id.* "[S]erver replies traverse the same path as the requests, only in reverse." *Id.* at 9.

2. Discussion

a. Claim 1

The Petition asserts that Crowds discloses all the limitations of claim 1. Pet. 20–29. Below we consider the claim 1 limitations in turn.

i. Limitations of the Preamble

Petitioner asserts that Crowds discloses the claimed web server of the preamble limitations[17] that stores the first content. Pet. 24. Petitioner refers to annotated Figure 2 of Crowds, reproduced below. *Id.*

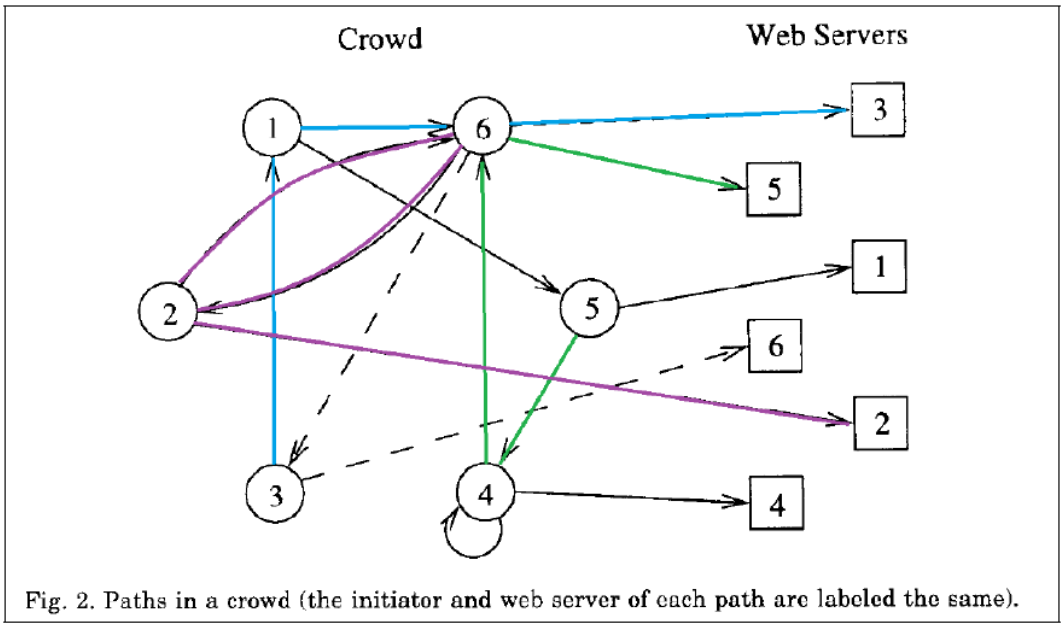


Fig. 2. Paths in a crowd (the initiator and web server of each path are labeled the same).

Figure 2 of Crowds (annotated)

As shown in Petitioner's annotated version of Figure 2 of Crowds, Petitioner refers to the path 5→4→6→server (highlighted in green), with boxed "5"

[17] The preamble provides antecedent basis for the terms "first client device" and "web server," among others. We determine that the preamble is limiting. *See* Ex. 1017, 9 (parties agree preambles of claims in related patents are limiting).

acting as the web server. Pet. 23–24. Petitioner asserts that "[i]n accordance with the preamble, a first client device (jondo 6) performs the claim steps, fetching requested content from a web server, '5.'" *Id*. We agree with Petitioner that jondo 6 is operating in the role of a client because it serves as a client of web server 5 when requests originating at jondo 5 (circled) are sent by jondo 6 to web server 5 in the identified path. Ex. 1006, 8–9.

Patent Owner contends that Crowds does not disclose a "first client device" as recited in the preamble under a role-based construction because a person of ordinary skill in the art would not be able to determine whether jondo 6 is a client device or a server under the purely role-based constructions because "jondo 6 operates in different roles at different points in time." PO Resp. 31.

Patent Owner's arguments are based on the premise that if a device is operating in a certain role performing a certain function *at one point in time* and in a different role performing a different function at *another point in time*, it cannot be the claimed element. In other words, Patent Owner is asserting that a component has to operate exclusively in a single role at all times in order to disclose a claim element. We are not persuaded by this contention because we have not adopted Patent Owner's proposed claim constructions.

As discussed *supra*, Section II.C.2, we have adopted the district court's role-based construction, where a "client device" is a "client device" as a "communication device that is operating in the role of a client." As Petitioner asserts, and we agree, Crowds' jondo 6 operates in the role of a "first client device" because "it acts as in the role of a client in requesting the

service of content from web server 5." Pet. 25, *see also id.* at 26–28; Teruya Decl. ¶ 60. We also agree with Petitioner's assertion that communication paths are established between, for instance, jondo 6 (first client device) and jondo 4 (second server), as discussed for limitation 1[a] below, which supports Petitioner's contention that jondo 6 acts as a communication device. Pet. 25–26; Teruya Decl. ¶ 64. Accordingly, jondo 6 meets the claim construction for the term "first client device" adopted here. That jondo 6 may at times also act as a server is acceptable—as discussed *supra* Section II.C.1.c, a device may perform different roles with different functions at different times.

Patent Owner additionally argues that Crowds does not disclose the architecture of claim 1. PO Resp. 33–36. Patent Owner asserts that Crowds "does not disclose a 'first client device' between a 'second server' and a 'web server.'" *Id.* at 33 (citing Ex. 2065 ¶ 165). Patent Owner argues that the jondos of Crowds are identical user computers and Petitioner has failed to distinguish them "other than the role being performed at a particular point in time." *Id.* at 33–34. Patent Owner contends that jondo 4 of Crowds does not correspond to the "second server" of claim 1, where a person of ordinary skill in the art "would understand the 'second server' of claim 1 to be, for example, a proxy server located between a requesting client device and a proxy client device." *Id.* at 34 (citing Ex. 2065 ¶165). Patent Owner asserts that Petitioner's identification of identical jondos as "client device[s]" or "server[s]" is "arbitrary." *Id.* (citing Ex. 2065 ¶ 166). Patent Owner argues that a person of ordinary skill in the art would understand that jondo 4 is a client device, and not a server, and Petitioner's expert testified that "all

jondos are client devices." *Id*. at 35 (citing IPR2021-01492, Teruya Decl. ¶ 55; Ex. 2065 ¶ 167). Patent Owner also asserts that there is no indication that Crowds' jondos are dedicated network devices, are capable of a large number of connections, or provide for scalability for increasing resources. *Id*. at 35 (citing Ex. 1004, 14– 15, 17; Ex. 2065 ¶ 167).

Most of Patent Owner's arguments are based on claim constructions that we have not adopted, for example, that certain components have specific structural requirements or a component has to operate exclusively in a single role in order to disclose a claim element. We are not persuaded by these contentions for the reasons discussed above. Further, although Crowds' jondos may act as "client devices," as Petitioner's expert, Mr. Teruya testifies (IPR2021-01492, Teruya Decl. ¶ 55), the jondos may also take different roles.

We additionally do not agree with Patent Owner's assertions that Crowds does not disclose the second server ↔ first client device ↔ web server architecture of the '510 patent's claims. As shown in annotated Figure 2 of Crowds, and in Petitioner's reliance on the path 5→4→6→server as discussed for the preamble above, Crowds explicitly discloses the architecture of second server ↔ first client device ↔ web server. *See* Pet. 24; Ex. 1006, Fig. 2. This is the configuration arranged in the claim. As also discussed, we find that Crowds' disclosures support Petitioner's contention that jondo 6 acts as the claimed "first client device," server 5 acts as the claimed "web server," and, as discussed below, jondo 4 acts as the claimed "second server." As such, Petitioner demonstrates that Crowds discloses the components as arranged in the claim, and which could

be understood by one of ordinary skill in the art as depicted in the configuration of Figure 2.

We have reviewed the evidence and argument, and on the complete record, we determine that Petitioner has demonstrated that Crowds discloses the limitations of the preamble of claim 1.

ii. Limitation 1[a]

Petitioner asserts that limitation 1[a] is performed by Crowds by the establishment of a TCP connection between jondo 6 (first client device) and jondo 4 (the second server). Pet. 27–28. Petitioner asserts that jondo 6 is a client device because "it acts as in the role of a client in requesting the service of content from web server 5." *Id*. at 27. Petitioner further asserts that jondo 4 is a server because it provides a service to requesting jondo 5 consistent with Crowds' "description [which] uses client-server terminology, where one jondo is a client of its successor on the path." *Id*. (citing Ex. 1006, 8). Petitioner argues that a communication path is established when jondo 5 receives a user request and sets up static paths over TCP, and, more specifically, when "a TCP connection is established between the first client device and the second server." *Id*. at 28 (citing Ex. 1006, 8, 16). We agree with Petitioner that Crowds discloses that jondo 6 (first client device) establishes a TCP connection with jondo 4 (second server). *See* Ex. 1006, 8, 15–16; Teruya Decl. ¶ 64.

Patent Owner argues that under role-based construction, when jondo 6 receives a request from jondo 4, jondo 6 is operating in the role of server, and not a client and when jondo 4 sends a request to jondo 6, jondo 4 is operating in the role of a client and not a server. PO Resp. 32 (citing

Ex. 2065 ¶ 157). Patent Owner also refers to Petitioner's assertion that "higher-powered devices" to run proxy servers, without running their own web browsers, and asserts that "Petitioner's alleged modification of Crowds is contrary to the teachings of Crowds." *Id.* at 36–37 (citing Pet. 37).

As discussed above for the preamble, a device may perform different roles with different functions at different times. We have adopted the district court's role-based construction, *supra*, Section II.C.2, where a "server" is a "server that is not the client device," that is, the term means "a device that is operating in the role of a server and that is not the first client device." As Petitioner asserts, we agree that Crowds' jondo 4 operates in the role of a server by providing a service to requesting jondo 5. Pet. 27; Teruya Decl. ¶¶ 61–62. Further, jondo 4 is not the same physical device as jondo 6 (the first client device). Under the role-based claim construction adopted here, we need not reach the issue of Crowds' teaching of higher-powered devices. *See* Pet. 37–38 (Petitioner making the alternative assertion "if the Board were to construe 'second server' as requiring a specialized data-center class device."). Further, we do not agree with Patent Owner that relying on a component that meets the claim construction and also is in a configuration that is explicitly disclosed would require any "modification."

We have reviewed the evidence and argument, and on the complete record, we determine that Petitioner has demonstrated that Crowds discloses limitation 1[a].

iii. Limitation 1[b]

For limitation 1[b], Petitioner asserts that in Crowds' 5→4→6→server example, the first client device (jondo 6) sends a web

request via HTTP to the target web server (boxed element 5). Pet. 28 (citing Ex. 1006, 8–9, Fig. 2). Petitioner asserts that the HTTP request comprises the first content identifier, that is, the request contains a URL. *Id*. at 27. Petitioner contends that the first content identifier may be considered to be either "the disclosed 'request' itself, or the URL that the request contains." *Id*. at 28 (citing Teruya Decl. ¶¶ 70–72).

Patent Owner does not make any arguments specific to this limitation.

We have reviewed the evidence and argument, and on the complete record, we determine that Petitioner has demonstrated that Crowds discloses limitation 1[b].

iv. Limitation 1[c]

For limitation 1[c], Petitioner asserts that under the Crowds' example path, jondo 6, the recited first server device, will receive the requested content in response to sending the first client identifier. Pet. 30–31. Petitioner argues that this content routing is in accordance with Crowds' disclosure that the "server replies traverse the same path as the requests, only in reverse." *Id*. (citing Ex. 1006, 8–9) (emphasis omitted). Patent Owner does not make any arguments specific to this limitation.

We have reviewed the evidence and argument, and on the complete record, we determine that Petitioner has demonstrated that Crowds discloses the limitation 1[c].

v. Limitation 1[d]

For limitation 1[d], Petitioner asserts that a TCP connection exists between jondos 6 and 4. Pet. 31–32. And consistent with Crowds' disclosure that replies travels on the same path, but in reverse, Petitioner

argues that jondo 6 sends the requested content to jondo 4, the second server. *Id*. at 31.

Patent Owner asserts that under "the purely role-based constructions, when jondo 6 is sending a response to jondo 4, jondo 6 is operating in the role of a server, not a client" and "when jondo 4 is receiving a response from jondo 6, jondo 4 is operating in the role of a client, not a server." PO Resp. 33 (citing Ex. 2065 ¶¶ 161–162). As such, Patent Owner argues that Crowds does not teach that jondo 6 is a client device or jondo 4 is a server. *Id*. (citing Ex. 2065 ¶ 163). We have addressed this argument above and do not find it persuasive.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has demonstrated that Crowds discloses limitation 1[d].

vi. Conclusion

We note that Patent Owner has presented evidence of secondary considerations. *See* PO Resp. 57–75. Evidence of secondary considerations is not pertinent to an anticipation rejection under 35 U.S.C. § 102. *See In re Malagari*, 499 F.2d 1297, 1302 (CCPA 1974).

Accordingly, having considered the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 1 of the '510 patent.

b. Claims 6, 7, and 21

Claim 6 recites

> 6. The method according to claim 1, for use with a third server that comprises a web server that is Hypertext Transfer Protocol (HTTP)

server, the third server responds to HTTP requests and stores a second content identified by a second URL, the method by the first client device further comprising:

receiving the second URL;

sending, to the third server over the Internet in response to the receiving, the second URL; and

receiving the second content from the third server over the Internet in response to the sending.

Ex. 1001, 19:51–61.

Claim 7 depends from claim 6, and further recites "executing, by the first client device, a web browser application or an email application." Ex. 1001, 20:2–3. Claim 21 depends from claim 1 and recites a similar limitation to claim 7.

Petitioner asserts that Crowds discloses the limitations of claim 6 by the additional path 3→1→6→server, as shown in blue in annotated Figure 2 of Crowds, reproduced below. Pet. 32–33.

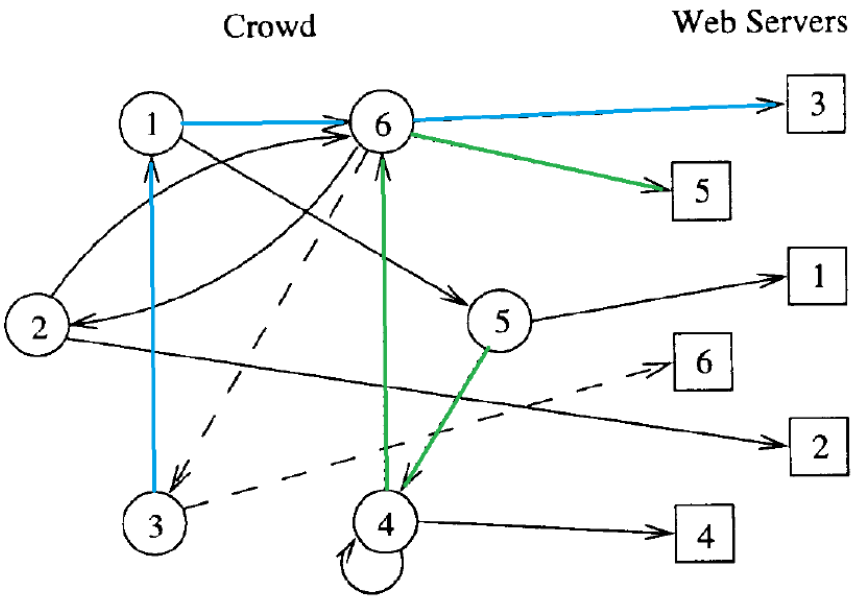


Fig. 2. Paths in a crowd (the initiator and web server of each path are labeled the same).

In annotated Figure 2, above, the path 3→1→6→server is shown in blue. Pet. 32–33 (citing Ex. 1006, 8–9; Teruya Decl. ¶¶ 79–81). Petitioner asserts that web server 3 (in square box) meets the claimed third server and, in the blue path, jondo 6 (first client device) receives a request comprising the second content identifier from jondo 1, which it sends that URL to web server 3. *Id.* For claims 7 and 21, Petitioner asserts that the client devices in Crowds run web browsers. *Id.* at 33.

Patent Owner does not present any arguments specific to these claims.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claims 6, 7, and 21.

c. Claims 13 and 24

Claim 13 recites:

> 13. 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 sending of the Hypertext Transfer Protocol (HTTP) request, the receiving and storing of the first content, the receiving of the first content identifier, and the sending of the part of, or the whole of, the stored first content, the method is further preceded by:
>
> > downloading, by the first client device from the Internet, the software application; and
> >
> > installing, by the first client device, the downloaded software application.

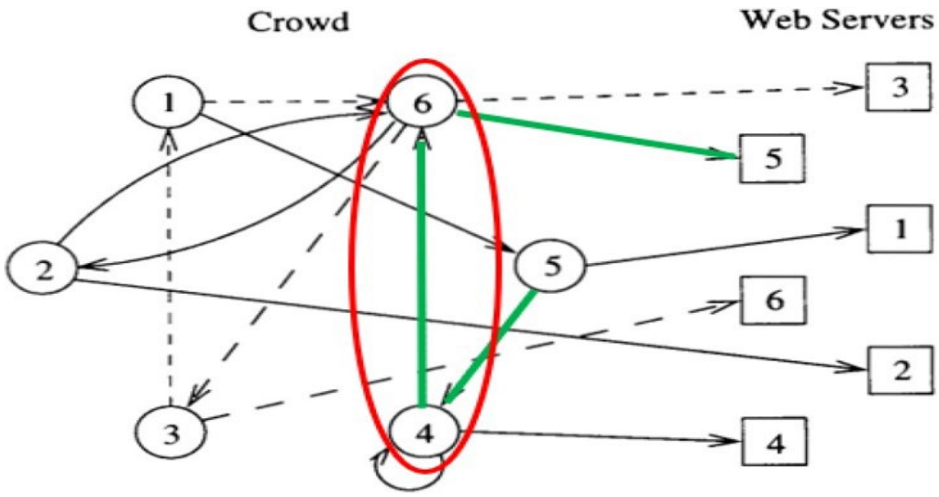
Ex. 1001, 20:13–38. Claim 24 recites: "A non-transitory computer readable medium containing computer instructions that, when executed by a computer processor, cause the processor to perform the method according to claim 1." *Id.* at 21:8–11.

For both claims, Petitioner asserts that Crowds discloses the download of a software package that implements a jondo. Pet. 33 (citing Ex. 1006, 26; Teruya Decl. ¶¶ 87–88). Patent Owner contends that Petitioner fails to show that Crowds discloses or teaches the recited "storing of the first content" and "sending . . . the stored first content" as recited in claim 13. PO Resp. 40 (citing Ex. 2065 ¶ 185). However, as Petitioner contends, and we agree, Crowds discloses the use of typical user computers with memory that satisfy this storing step. Pet. Reply 23 (citing Ex. 2065 ¶ 164). Patent Owner does not present any arguments specific to claim 24.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claims 13 and 24.

d. Claim 15

Claim 15 depends from claim 1 and recites "further comprising receiving, by the first client device from the second server over the established TCP connection, the first content identifier." Ex. 1001, 20:41–44. Petitioner relies on the 5→4→6→server path shown in green in annotated Figure 2 of Crowds, reproduced below.



Petitioner asserts that in the path shown in annotated Figure 2, above, the first client device (jondo 6) receives from the second server (jondo 4), the first content identifier over an established TCP connection. Pet. 33–34 (citing Teruya Decl. ¶¶ 89–91).

Patent Owner argues that, as for claim 1, jondo 4 is operating as a client, not a server, and jondo 6 is operating as a server, not a client. PO Resp. 41 (citing Ex. 2065 ¶¶ 189–190). We have not adopted Patent Owner's proposed claim construction and, for the reasons discussed above for claim 1, we are not persuaded by Patent Owner's arguments.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 15.

e. Claim 16

Claim 16 depends from claim 1 and recites "wherein the sending of the first content identifier to the web server over the Internet comprises sending a Hypertext Transfer Protocol (HTTP) request that comprises the first content identifier." Ex. 1001, 20:45–48. Petitioner asserts, that as

discussed for claim 1, jondo 6 (the first client device) sends an HTTP request to the web server over the Internet that comprises the first content identifier. Pet. 34 (citing Teruya Decl. ¶¶ 92–93). Patent Owner does not present any arguments specific to claim 16.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 16.

f. Claims 18 and 19

Claims 18 depends from claim 1 and is directed to a TCP/IP server, wherein the first client device is a TCP/IP client. Ex. 1001, 20:52–59. Claim 19 depends from claim 1 and recites "wherein the first client device communicates over the Internet based on, or according to, one out of UDP, DNS, TCP, FTP, POP#, SMTP, or SQL standards." *Id*. at 20:60–63. Petitioner asserts that a TCP connection is established between jondo 4 and jondo 6, and paths are random, so a jondo may participate as a TCP client or server. Pet. 34 (citing Teruya Decl. ¶¶ 94–95). Petitioner also relies on Crowds' disclosure that the devices may operate over the Internet based on FTP. *Id*. at 35 (citing Ex. 1006, 8 n.1). Patent Owner does not present any arguments specific to claims 18 and 19.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claims 18 and 19.

g. Claim 20

Claim 20 depends from claim 1, further reciting: "wherein the first web-page comprises audio, or video content, and wherein the first content

identifier comprises a Uniform Resource Locator (URL)." Ex. 1001, 20:64–67. Petitioner asserts that, as discussed for claim 1, Crowds discloses that the first content is a web page identified by a URL. Pet. 35. Patent Owner does not present any arguments specific to claim 20.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 20.

h. Claim 22

Claim 22 depends from claim 1 and recites "further comprising storing, operating, or using, a client operating system." Ex. 1001, 21:4–5. Petitioner refers to Crowds' disclosure that the jondo software was programmed for "portability across Unix and Microsoft platforms" and SunOS, and a person of ordinary skill in the art would understand that these refer to client operating systems. Pet. 35 (citing Teruya Decl. ¶ 100). Patent Owner does not present any arguments specific to claim 22.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 22.

i. Claim 23

Claim 23 depends from claim 1 and recites "wherein the steps are sequentially executed." Ex. 1001, 21:6–7. Petitioner refers to the steps disclosed in Crowds and identifies that they are performed sequentially. Pet. 35–36 (citing Teruya Decl. ¶¶ 102–104; Ex. 1006, 8–9, Fig. 2). Patent Owner does not present any arguments specific to claim 23.

We have reviewed the evidence and argument, and on this complete record, we determine that Petitioner has shown by a preponderance of the evidence that Crowds anticipates claim 23.

F. Obviousness of Claims 1, 2, 6–11, 13, 15, 16, 18–24 over Crowds and RFC 2616

Petitioner contends that the claims anticipated by Crowds (claims 1, 6, 7, 13, 15, 16, and 18–24), as well as claims 2 and 8–11, would have been obvious in light of Crowds and RFC 2616. Pet. 35–41. Because we have already determined that clams 1, 6, 7, 13, 15, 16, and 18–24 are anticipated by Crowds, we do not separately address them under this ground. For those claims, we rely on the Petition and our anticipation analysis under Crowds to show that they would also have been obvious in light of Crowds and RFC 2616.

1. Analysis of Obviousness Assertions

RFC 2616 documents version 1.1 of the HTTP protocol, which is "foundational to the World Wide Web." Ex. 1013; Teruya Decl. ¶ 53. Petitioner asserts that the '510 patent cited to RFC 2616 for a definition of HTTP, and Crowds concerns communications using the same protocols. Pet. 36–37 (citing Ex. 1001, 16:21–28; Ex. 1006, 16, 23–24). Petitioner contends that those "[w]orking in the field of the '510 patent assumes a basic understanding of computers and Internet communications, including the standards governing HTTP requests and the TCP/IP protocol." *Id.* at 35 (citing Teruya Decl. ¶ 106). Petitioner argues that a person of ordinary skill in the art "developing software for like applications [like Crowds] would

have had a powerful motivation to combine its disclosure with knowledge of Internet standards governing HTTP." Teruya Decl. ¶¶ 105–110.

Claim 2 depends from claim 1, where the first client device is identified by a Media Access Control (MAC) address or a hostname, and where the first client device sends in response to a start-up or power-up, a first message comprising the first client IP address, the MAC address, or the hostname. Ex. 1001, 19:32–39. Petitioner asserts that Crowds discloses that jondos have host names and a set-up phase, where other jondos learn information including their IP address, shared password, and use this information when selecting a jondo as a proxy. *Id*. at 38 (citing Ex. 1006, 8, 22, Fig. 6). Mr. Teruya testifies that it would have been obvious to a person of ordinary skill that a jondo (participating as the second server) would receive a message from the first jondo (first client device) during the first jondo's initialization period, which includes the first jondo's IP address. Teruya Decl. ¶ 122.

Claim 8 depends from claim 1 and recites "further comprising periodically communicating over the TCP connection between the second server and the first client device." Ex. 1001, 20:4–6. Claim 9 depends from claim 8 and recites "wherein the periodically communicating comprises exchanging 'keep alive' messages." *Id*. at 20:7–10. Petitioner argues that Crowds discloses that the static communication paths "are clearly 'persistent' connections," that last for more than one transaction. Pet. 39–40 (citing Teruya Decl. ¶ 123). Petitioner refers to RFC 2616, where the default behavior is "to use persistent connections, so the two HTTP end-points can send and receive more than one HTTP request and response pair,"

and asserts that claims 8 and 9 would have been obvious to a skilled artisan based on Crowds in view of RFC 2616 and their knowledge. *Id*. (citing Ex. 1013 § 8.1).

Claim 10 depends from claim 1 and recites "further comprising determining, by the first client device, that the received first content, is valid." Ex. 1001, 20:11–13. Claim 11 depends from claim 10 and recites "wherein the determining is based on the received HTTP header according to, or based on, IETF RFC 2616." *Id*. at 20:14–16. Petitioner argues that RFC 2616 discloses headers that implement these claims. Pet. 41 (citing Ex. 1013 § 14.9). Petitioner refers to the techniques utilized in the '510 patent, which are identical to those of RFC 2616, and asserts that a person of skill in the art would "take advantage of this widely adopted standard." *Id*. at 41 (citing Teruya Decl. ¶¶ 132–134).

Patent Owner does not respond separately to Petitioner's analysis of claims 2 and 8–11. *See* PO Resp. 31–38. We are persuaded by Petitioner's analysis that Petitioner has demonstrated each limitation of these claims is taught or suggested by the combination of Crowds and RFC 2616.

Patent Owner argues, however, that the Petitioner's obviousness analysis is deficient because Crowds teaches away from the claimed methods of the '510 patent. PO Resp. 38–39. We disagree. Patent Owner more specifically argues that Crowds teaches away from the claimed methods of the '510 patent because: 1) Crowds does not provide the initiator of a request with anonymity as to the target web server; 2) Crowds teaches that an increase in deniability results in an increase in latency; and 3)

Crowds does not teach the initiator to purposefully select a jondo to form a pathway. *Id*.

For the first issue, Patent Owner argues that Crowds does not provide anonymity for the originating requesting jondo. PO Resp. 38–39. More specifically, Patent Owner asserts that based on the flip of a biased coin, a jondo may send a request directly to the target web server. *Id*. (citing Ex. 2065 ¶ 179). We do not find this argument persuasive because Crowds discloses that a goal of the use of the jondos is to provide anonymity by routing the messages through other jondos. *See* Ex. 1006, 2–5. And, while the jondo can select itself for routing, given that multiple jondos are selected in a path, other jondos will generally be selected for anonymity. *See id*. at 8. Moreover, anonymity is not a limitation of the claims. As to the third issue, a "purposeful" selection of a device is also not claimed. Evidence concerning whether the prior art teaches away from a given invention must relate to and be commensurate in scope with the ultimate claims at issue. *See, e.g., MeadWestVaco Corp. v. Rexam Beauty and Closures, Inc*., 731 F.3d 1258, 1264–65 (Fed. Cir. 2013). As to the second issue concerning Crowds' alleged latency, Patent Owner does not explain, nor does Dr. Williams provide support for, why Crowds would teach away from the claimed invention, that is, "a person of ordinary skill, upon reading the reference . . . would be led in a direction divergent from the path that was taken" in the claim. *Galderma Labs., L.P. v. Tolmar, Inc*., 737 F.3d 731, 738 (Fed. Cir. 2013). Moreover, Crowds discusses ways to mitigate latency problems in its system (Ex. 1006, 19) and in Crowds there is no criticizing, discrediting, misdirecting or otherwise discouraging the approach taken in

the claims. *See Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017); *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Additionally, there is no claim limitation related to process speed or latency. Accordingly, we do not find that Crowds teaches away from the claimed invention of the '510 patent.

We find that Petitioner's evidence and argument show that one of ordinary skill in the art would have been motivated to combine Crowds and RFC 2616 as asserted by Petitioner and the combination teaches the limitations of claims 1, 2, 6–11, 13, 15, 16, 18–24.

Patent Owner also asserts that the nonobviousness of the claims is supported by objective indicia of nonobviousness, including commercial success, long-felt need, copying, and industry praise, and we address those issues below.

2. Objective Indicia of Nonobviousness

Patent Owner asserts that nonobviousness is supported by objective indicia, including commercial success, long-felt need, copying, and industry praise. PO Resp. 57–73; PO Sur-reply 27–29. Petitioner disagrees, contending that Patent Owner's arguments rely on the use of residential proxies with residential IP addresses, which it contends do not have a nexus to the claims, and that Patent Owner's arguments regarding commercial success suffer from additional evidentiary infirmities. Pet. Reply 24–26.

a. Legal Standards

Objective indicia of nonobviousness may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz &*

Watson, Inc., 679 F.3d 1372, 1379 (Fed. Cir. 2012). "[O]bjective indicia 'may often be the most probative and cogent evidence of nonobviousness in the record,'" and "help turn back the clock and place the claims in the context that led to their invention." *Id.* at 1378. Evidence of objective indicia of nonobviousness "must always when present be considered en route to a determination of obviousness." *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012); *see also Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc).

Objective indicia of nonobviousness are "only relevant to the obviousness inquiry 'if there is a nexus between the claimed invention and the [objective indicia of nonobviousness].'" *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017) (quoting *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006)). For objective indicia of nonobviousness to be accorded substantial weight, their proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc. v. Apple Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence is a direct result of the unique characteristics of the claimed invention. *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, No. 2022-1765, 2023 WL 5440530, at *5 (Fed. Cir. Aug. 24, 2023).

As the Federal Circuit has explained, "a patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted

evidence is tied to a specific product and that the product '*is* the invention disclosed and claimed.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). In other words, presuming nexus is appropriate "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.* (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). On the other hand, "'[w]hen the thing that is commercially successful is not coextensive with the patented invention—for example, if the patented invention is only a component of a commercially successful machine or process,' the patentee is not entitled to a presumption of nexus." *Id.* Once "the patentee has presented a *prima facie* case of nexus, the burden of coming forward with evidence in rebuttal shifts to the challenger . . . to adduce evidence to show that the commercial success was due to extraneous factors other than the patented invention." *Demaco*, 851 F.2d at 1393.

Additionally, "[a] finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations." *Fox Factory*, 944 F.3d at 1373. Even in the absence of a presumption, "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.* at 1373–74.

b. Commercial Success

Patent Owner argues that nonobviousness is supported by commercial success due to "[t]he features driving the commercial success of Bright

Data's residential proxy service [which] are (a) the proxy client devices have residential IP addresses that lower the risk of blocking by the web server and (b) the scalability of this architecture given the large number of proxy client devices having residential IP." PO Resp. 69 (citing Ex. 2065 ¶ 272). According to Patent Owner, its "residential proxy service generated revenues of $53.7 million." *Id.* at 69 (citing Ex. 2065 ¶ 275). Patent Owner contends that "Bright Data's residential proxy service has grown to dominate the market." *Id.* Patent Owner further contends that EMK Capital's acquisition of a majority stake in Patent Owner "at an enterprise value of $200 million in 2017" is further evidence of commercial success. *Id.* at 68 (citing Ex. 2065 ¶ 274).

Patent Owner asserts that its residential proxy service practices the methods claimed in the '510 [p]atent, and provides claim charts purporting to show how "this commercial embodiment [for the residential proxy service] practices at least claims 1–2, 6–9, 15–16, 18–20, and 22–24 of the '510 [p]atent." PO Resp. 57–67. Patent Owner argues that its "residential proxy service directly corresponds to the network architecture of the modified version of Figure 3 of the '510 [p]atent where the requesting client device corresponds to client 102, the Super Proxy corresponds to proxy server 6, and the proxy client device corresponds to agent 122." *Id.* at 67. According to Patent Owner, its "residential proxy service is 'reasonably commensurate in scope with the scope of the claims.'" *Id.*

Petitioner asserts that Patent Owner's secondary considerations arguments and evidence do not demonstrate a nexus with the challenged claims. Pet. Reply 24–26. More specifically, Petitioner points to the two

features allegedly "driving" the alleged commercial success (use of "residential IP addresses" and "scalability") cited by Patent Owner. *Id*. at 24. Petitioner argues that in naming those features, Patent Owner "admits a lack of nexus because neither feature is claimed." *Id*. at 24. Petitioner points out that the '510 patent "never uses the words 'residential,' 'scalable,' or 'scalability.'" *Id*. Petitioner argues that Dr. Williams, Patent Owner's expert, admits that the use of residential IP addresses is not claimed in the '510 patent. *Id.* at 25 (citing Ex. 1111, 56:4–6, 56:19–57:6). Petitioner also disputes Dr. Williams' testimony regarding Patent Owner's sales figures, arguing that "Williams did nothing to determine commercial 'success,' other than observing 'revenues in the millions of dollars per month.'" *Id*. (citing Ex. 1111, 168:23–169:3)

We find that Patent Owner has failed to establish a nexus between the challenged claims and the products and processes that Patent Owner relies on to show commercial success. First, we find that Patent Owner has not established a presumption of nexus because it has not shown that the products or processes that it relies on for commercial success embody and are coextensive with the challenged claims. *See Fox Factory*, 944 F.3d at 1373. To the contrary, Patent Owner relies on features of its products and processes that are not claimed, including the use of a residential proxy service, residential consumer computers, and residential IP addresses, as the basis for the commercial success of its products. For example, Patent Owner identifies "[t]he features driving the commercial success" of its products as "the proxy client devices hav[ing] residential IP addresses" and the scalability of its architecture "given the large number of proxy client devices

having residential IP addresses." PO Resp. 67; *see id.* at 55 (pointing to Patent Owner's "residential proxy service" that uses laptops, desktops, or smartphones), 69 (asserting that Patent Owner's "residential proxy service has grown to dominate the market" and pointing to a market report examining "residential proxy services").

The challenged claims, however, do not include any limitations requiring residential proxies, residential computers, or residential IP addresses or their operation. Moreover, as discussed above, we do not adopt Patent Owner's proposed construction limiting the term "client device" to mean a "consumer computer" or "consumer communication device." *See supra* Section II.C.1. At most, Patent Owner presents evidence that the challenged claims broadly cover the products relied on for commercial success, which is insufficient to show a nexus. *See Fox Factory*, 944 F.3d at 1377 (holding that a presumption of nexus cannot be established by simply showing that "the patent claims broadly cover the product that is the subject of the evidence of secondary considerations").

As noted above, even in the absence of a presumption of nexus, Patent Owner may "prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention.'" *Fox Factory*, 944 F.3d at 1373–74. As discussed above, however, the "unique characteristics" that Patent Owner points to as "driving the commercial success" of its products—the use of a residential proxy service, residential consumer computers, and residential IP addresses—are not recited in the challenged claims. *See* PO Resp. 55–69. Therefore, Patent Owner has failed to prove that commercial success of its

products is the "direct result" of the claimed invention's unique characteristics.

We also are not persuaded by Patent Owner's argument that "the district court found that sufficient nexus was established." PO Sur-reply 27 n.11 (citing Ex. 2004, 4). Patent Owner relies on the district court's ruling on defendants' motion to strike the opinions of Patent Owner's expert Dr. Rhyne, where the district court stated that it was denying the portion of "the motion requesting the Court to preclude Dr. Rhyne from testifying regarding secondary considerations of non-obviousness" because it "found that Dr. Rhyne established a sufficient nexus between the secondary considerations and the claimed invention." Ex. 2004, 4. The district court's order, however, does not explain the basis for its ruling, and Patent Owner does not point to anything in the record providing such an explanation. It is also not clear from evidence of record in this proceeding whether the district court actually made a finding on the merits of nexus, or simply determined that Dr. Rhyne had provided sufficient disclosure in his expert report to offer testimony on nexus at trial.

c. Long-Felt Need

Patent Owner argues that its residential proxy service "solved a long felt, but unresolved need." PO Resp. 69–70. According to Patent Owner, "traditional data center server proxies could provide some anonymity for the user in accessing a target web site," but "that web site could still likely identify data center server IP addresses as proxy addresses" because they "were usually (a) associated with commercial IP addresses; and (b) limited to a block of IP addresses sharing the same IP address prefix and geographic

location." *Id.* at 70 (citing Ex. 2065 ¶ 277). "In contrast," Patent Owner asserts, its "proxy client devices have residential IP addresses that vary widely from one another without being limited to one block of IP addresses and can have a wide variety of geographic locations." *Id.* Patent Owner further contends that its "proxy client devices" solves the need to "dramatically increase the [number] of IP addresses that can be included in a proxy network." *Id.* (citing Ex. 2065 ¶ 193; Ex. 2048, 4; Ex. 2049, 182:22–197:21).

As noted, for objective evidence of secondary considerations to be relevant, there must be a nexus between the merits of the claimed invention and the objective evidence. *Volvo*, 2023 WL 5440530, at *5. Petitioner argues that there is no nexus shown here between the products and the challenged claims. Pet. Reply 24–26. For similar reasons as for commercial success, we agree with Petitioner that no nexus has been shown between Patent Owner's evidence of alleged long-felt need and the challenged claims. The key features that Patent Owner points to as satisfying a "long-felt need" are its "residential proxy service" including proxy client devices that "have residential IP addresses." PO Resp. 70. As explained above, however, the challenged claims do not recite or require a residential proxy service or residential IP addresses. Therefore, Patent Owner has failed to make the requisite showing that a long-felt need was met by its claimed invention.

d. Copying

Patent Owner argues that "[d]uring the jury trial in the Tex. Litigation [*Teso* district court litigation], evidence of Oxylabs copying Bright Data's

residential proxy service, then under the name 'Hola,' was presented." PO Resp. 71 (citing Ex. 2065 ¶ 278). Specifically, Patent Owner argues that its representative (Ofer Vilenski) asked an employee of Oxylabs (Tomas Okmanas) to incorporate its software development kit (SDK) in Oxylabs' applications, but that instead Oxylabs "subsequently released their own SDK for Oxylabs' own residential proxy network." *Id.* (citing Ex. 2049, 202:12–204:8; Ex. 2047, 131:23–132:7, 152:8–153:6; Ex. 2065 ¶ 278). Patent Owner also asserts that Mr. Okmanas testified that he was looking for "a system that works like hola.org," that Oxylabs "wanted to develop its own residential proxy service," and that "he believed that he needed to do what Bright Data (previously known as Luminati and Hola) were doing to be successful." *Id.* at 71–72 (citing Ex. 2047, 95:20–97:1, 103:18–104:10, 149:13–150:8, 152:18–153:6; Ex. 2065 ¶ 278). "This" testimony, according to Patent Owner, "is strong evidence of copying." *Id.* at 72 (citing Ex. 2065 ¶ 279).

Petitioner argues that there is no nexus shown here between the products and the challenged claims. Pet. Reply 24–26. For similar reasons as for commercial success, we agree with Petitioner that no nexus has been shown between Patent Owner's evidence of alleged copying and the challenged claims. Although Patent Owner does not point to specific aspects of Patent Owner's products that it alleges were copied, it refers generally to "Bright Data's residential proxy service" known as "Hola" and the software development kit relating to it. PO Resp. 71–72. As explained above, however, the challenged claims do not recite or require a residential

proxy service. Therefore, Patent Owner has failed to make the requisite showing that the claimed invention was copied.

e. Industry Praise

Patent Owner argues that its "residential proxy service has received industry praise including from competitors, and that . . . praise is tied to the claims of the '510 [p]atent as described above." PO Resp. 72 (citing Ex. 2051, 23–24; Ex. 2065 ¶ 197). Patent Owner further contends that "competitors like Oxylabs, Smartproxy, and Microleaves have praised the advantages of using a residential proxy service." *Id.* at 72–73 (citing Exs. 2052–2054; Ex. 2065 ¶ 281).

Petitioner argues that there is no nexus shown here between the products and the challenged claims. Pet. Reply 24–26. For similar reasons as for the other objective indicia, no nexus has been shown between Patent Owner's evidence of industry praise and the challenged claims. Patent Owner ties the evidence of industry praise to its "residential proxy service," which is not recited in the challenged claims. PO Resp. 71–72. Therefore, Patent Owner has failed to make the requisite showing that the alleged industry praise has a nexus to the claimed invention.

3. Conclusion on Obviousness

For the reasons explained above, we conclude that Patent Owner's evidence purportedly showing commercial success, long-felt need, copying, and industry praise lacks merit and is entitled to little weight because Patent Owner has not shown nexus with the claimed invention. Thus, weighing Patent Owner's secondary considerations evidence together with Petitioner's evidence of obviousness, we find Petitioner has established the obviousness

of challenged claims 1, 2, 6–11, 13, 15, 16, 18–24 of the '510 patent in view of Crowds and RFC 2616.

Accordingly, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 6–11, 13, 15, 16, 18–24 would have been obvious over Crowds and RFC 2616.

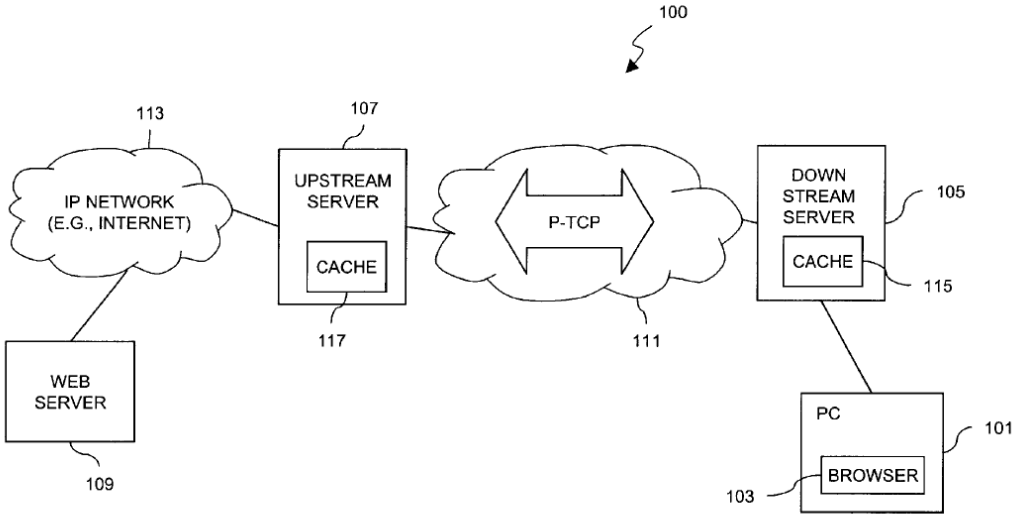
G. Anticipation of Claims 1, 6, 10, 15–20, 23, and 24 By Border

Petitioner asserts that claims 1, 6, 10, 15–20, 23, and 24 are anticipated by Border. Pet. 41–54. We begin with a description of Border and then analyze the arguments and evidence presented.

1. Border (Ex. 1012)

Border is a patent titled "System and Method of Reading Ahead of Objects for Delivery to an HTTP Proxy Server." Ex. 1012, code (54). Border describes "a system for retrieving web content." *Id.* at code (57). In Border, "[a] downstream proxy server receives a URL request message from a web browser. *Id.* at 3:35–36. Thereafter, "[a]n upstream proxy server receives the URL request message from the downstream proxy server" and "selectively forwards the URL request message to a web server and receives the URL content from the web server." *Id.* at 3:38–42. Then, "[t]he upstream proxy server forwards the URL content to the downstream proxy server." *Id.* at 3:42–43. An exemplary system employing downstream and upstream proxy servers for accessing a web server is shown in Figure 1, reproduced below:

FIG. 1



As depicted in Border's Figure 1, user station 101, for example, a personal computer, uses standard web browser 103. *Id.* at 3:55–61. User station 101 is connected to downstream proxy server 105, which communicates over network 111 with upstream proxy server 107. *Id.* at 3:61–66. Proxy servers 105 and 107 are HTTP proxy servers with HTTP caches 115 and 117. *Id.* at 4:8–11. Upstream proxy server 107 is connected to web server 109 through IP network 113, for example, the Internet. *Id.* at 4:5–7. In this system, proxy servers 105 and 107 "act as an intermediary between one or more browsers and many web servers (e.g., server 109)." *Id.* at 4:30–31.

2. Analysis

a. Claim 1

Referring to Figure 1 of Border, Petitioner asserts that the recited "first client device" is upstream server 107, the recited "second server" is downstream server 105, the recited "web server" is web server 109, the

recited "first content identifier" is the requested URL, and the recited "first content" is the requested web page at the requested URL. Pet. 44.

For limitation 1[a], Petitioner asserts that a persistent TCP connection is established between upstream server 107 and downstream server 105 in Border. Pet. 44 (citing Ex. 1012, 7:51–58; Teruya Decl. ¶ 146). Petitioner asserts that downstream server 105 is the "second server" because "it accepts a connection from web browser 103 and sends back a response to web browser 103's GET request." *Id.* at 45. Petitioner also contends that "upstream server 107 acts in the role of a 'client,' as commonly understood, because it requests a service of another computer system by requesting web content at a URL from a web server." *Id.*

For limitation 1[b], Petitioner contends that Figure 2 of Border depicts upstream server 107 issuing a GET request to web server 109, and the request is for a URL. Pet. 46 (citing Ex. 1012, 5:32–35, Fig. 2). For limitation 1[c], Petitioner argues that, in response to the upstream server 107 request, "the web server 109 transmits the requested HTML page to the upstream server." *Id.* at 47 (citing Ex. 1012, Fig. 2). Petitioner contends that, based on this disclosure, "Border teaches the first client device receiving the first content (the web page at the requested URL) from the web server in response to sending the first content identifier (the requested URL)." *Id.*

For limitation 1[d], Petitioner contends that in Border, "[a]fter receiving the web page from web server 109, upstream server 107 'forwards the HTML page to the downstream server 105'" as shown in Figure 2. Pet. 48. More specifically, Petitioner contends that "[d]ownstream server 105

then forwards the first content to web browser 103, in response to web browser 103's original GET request, in accordance with the second server's role as a 'server.'" *Id.* Petitioner asserts that "the same persistent TCP connection exists between upstream server 107 and downstream server 105," and communications go through this connection. *Id*. at 48–49 (citing Teruya Decl. ¶¶ 160–162).

Patent Owner's presents similar arguments for Border as those presented for Crowds. PO Resp. 42–44. For example, Patent Owner contends Border does not disclose a "first client device" or "second server" because the devices are similar "except for the role being performed at a particular point in time." *Id*. at 42. Patent Owner repeats its argument that, for example, a server cannot operate in the role of a client, and vice versa; the architecture of the '510 patent is not disclosed in Border; and Border's disclosure of general-purpose computers is not sufficient. *Id*. at 43–44. For the reasons provided in our above discussion of Crowds, we do not agree with those arguments as they are contrary to the claim constructions we adopted. Similarly, we have rejected Patent Owner's arguments based upon the alleged architecture of claim 1 and failure to disclose certain limitations for the reasons discussed above.

Accordingly, having considered the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that Border anticipates claim 1 of the '510 patent.

b. Claims 6, 10, 15–20, 23, and 24

Petitioner asserts that Border discloses all the limitations of claims 6, 10, 15–20, 23, and 24. Pet. 49–54. Patent Owner presents no arguments

specific to any of these claims, except for claim 15. PO Resp. 46–47. Patent Owner argues that Border does not disclose the limitations of claim 15 because, for instance, "under the purely role-based constructions, downstream server 105 cannot be a server." *Id*. at 46. This and other arguments directed to claim 15 are similarly based on claim constructions not adopted here. *See id*. at 46–47. For the reasons provided in our above discussion of Crowds, we do not agree with those arguments as they are contrary to the claim constructions we have adopted and the claim language.

Thus, having considered the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that Border anticipates claims 6, 10, 15–20, 23, and 24 of the '510 patent.

H. Obviousness of Claims 1, 6, 8–11, 13, 15–20, and 22–24 Over Border and RFC 2616

Petitioner contends that the claims anticipated by Border (claims 1, 6, 10, 15–20, 23, and 24), as well as claims 8, 9, 11, 13, and 22, would have been obvious in light of Border and RFC 2616. Pet. 54–58. Because we have already determined that clams 1, 6, 10, 15–20, 23, and 24 are anticipated by Border, we do not separately address them under this ground. For those claims, we rely on the Petition and our anticipation analysis under Border to show that they would also have been obvious in light of Border and RFC 2616.

Petitioner states that Border discloses a system for retrieving web content, and that "HTTP is an application level protocol that is employed for information transfer over the Web." Pet. 54 (citing Ex. 1012, 7:26–29.) Petitioner argues that "Border expressly incorporates RFC 2616," and a

person of ordinary skill in the art would have been motivated to combine Border with general internet knowledge and the disclosures of RFC2616. *Id.*

For claims 8 and 9, Petitioner asserts that it would have been obvious for a person of ordinary skill in the art to rely on knowledge of TCP and HTTP communication protocols for keep-alive messages, which would, for instance, be beneficial in settings like those disclosed by Border. Pet. 55–56 (citing Teruya Decl. ¶¶ 200–204). For claim 11, Petitioner asserts that it would have been obvious to utilize the methods of RFC 2616 in Border's checking of cache validity. *Id*. at 56–57 (citing Teruya Decl. ¶¶ 205–208). For claim 13, Petitioner argues that it is routine to download and install software, such as software that configures the proxy devices in Border. *Id*. at 57 (citing Teruya Decl. ¶¶ 212–213). For claim 22, Petitioner asserts that it would "be obvious that a device performing client functions, such as requesting services comprising content delivery from a web server, would have a suitable O/S to support the making and receiving of such requests." *Id*. at 58 (citing Teruya Decl. ¶¶ 214–217).

In addition to the arguments that it presented for Border's anticipation grounds, Patent Owner presents similar arguments for Border's obviousness grounds as it had presented for Crowds' obviousness grounds, that is, that Broder teaches away because it does not address initiator anonymity and it uses a different network structure. PO Resp. 44–46. We are not persuaded by these arguments because anonymity is not a limitation of the claims nor is the alleged network structure relevant because we have not adopted Patent Owner's claim construction, as discussed above.

Additionally, for the reasons explained above, we conclude that Patent Owner's evidence purportedly showing commercial success, long-felt need, copying, and industry praise lacks merit and is entitled to little weight because Patent Owner has not shown nexus with the claimed invention. Thus, weighing secondary considerations together with Petitioner's evidence of obviousness, we find Petitioner has established the obviousness of challenged claims 1, 6, 8–11, 13, 15–20, and 22–24 of the '510 patent in view of Border and RFC 2616.

Accordingly, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 6, 8–11, 13, 15–20, and 22–24 would have been obvious over Border and RFC 2616.

I. Anticipation of Claims 1, 6–8, 13, 15, 16, and 18–24 By MorphMix

Petitioner asserts that claims 1, 6–8, 13, 15, 16, and 18–24 are anticipated by MorphMix. Pet. 59–72. We begin with a description of MorphMix and then analyze the arguments and evidence presented.

1. MorphMix (Ex. 1008)

MorphMix is a doctoral thesis that identifies the lack of anonymity on the Internet as a problem that "limits the privacy protection of Internet users." Ex. 1008, Abstract. Accordingly, MorphMix is focused on "achieving anonymous Internet access for low-latency applications such as web browsing." *Id.* MorphMix describes "a peer-to-peer-based mix network" where "[e]very node joining the system can itself establish circuits via other nodes to access a server anonymously, but can also be part of circuits established by other nodes and relay data for them at the same time."

Id. at 118. An exemplary system is illustrated in Figure 5.1, reproduced below:

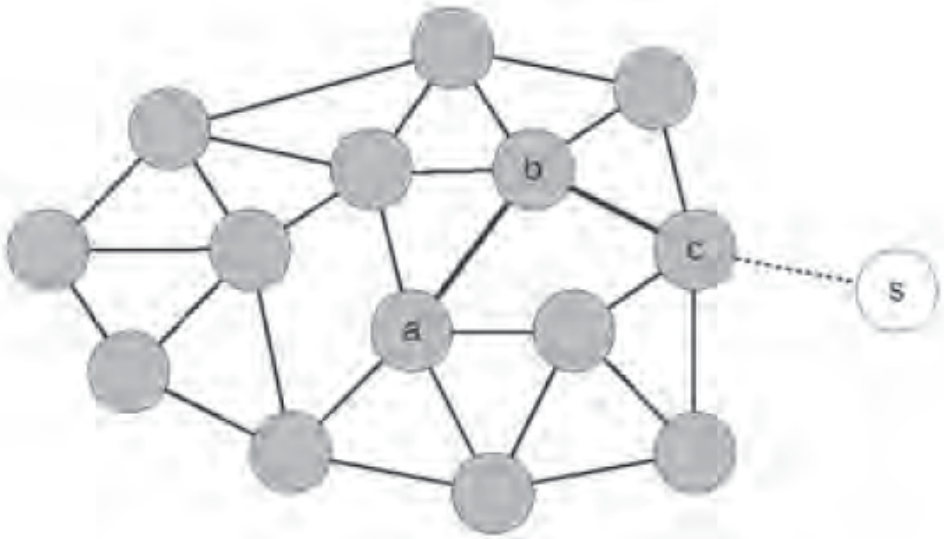


Figure 5.1: *Basic idea of MorphMix.*

As depicted in Figure 5.1 of MorphMix, above, participating nodes have a virtual link to one or more other nodes at any time. Ex. 1008, 119. This "means that (1) there is a TCP [Transfer Control Protocol] connection between the two nodes and (2) they share a symmetric key that is only known to these two nodes." *Id.* In Figure 5.1, node *a* has five neighbors with which it has established virtual links. *Id.* In the example shown, "node *a* has established an anonymous tunnel via *b* and *c*." *Id.* "Within an anonymous tunnel, anonymous connections can be set up to anonymously communicate with a server." *Id.* at 120.

2. Analysis

a. Claim 1

In its assertions directed to claim 1, Petitioner identifies the recited "first client device" as the last node (c) of MorphMix, the recited "second server" as intermediate node (b), the recited "first server" as server (s), the recited "first content identifier" as the application data (or the requested URL it contains), and the recited "first content" as the requested web page at the requested URL. Pet. 60–61.

For limitation 1[a], Petitioner contends that a TCP connection is established between nodes, and node (c) acts as a first client device and intermediate node (b) acts as a second server. Pet. 61–62. For limitation 1[b], Petitioner asserts that node (c) sends the application data and/or the URL within the application data to the first server(s), as shown in Figure 5.4. *Id*. at 63. For limitation 1[c], Petitioner contends that the node (c) receives the "first content," such as the web page, where MorphMix "[s]end[s] data back from the server to the client works exactly in the opposite way" as the information is sent to the server. *Id*. at 64 (citing Ex. 1008, 105). Accordingly, in MorphMix, Petitioner argues, the first client device (the last node before the target web server) receives the requested first content for sending back down the path to the requesting user. *Id*. at 63–64. For limitation 1[d], Petitioner contends that "[t]he first client device (node c) sends the first content (or web page content) back to the second server (node b, the prior node in the path)." *Id*. at 65.

Patent Owner has similar arguments for MorphMix as those previously discussed for Crowds. PO Resp. 47–51. For example, Patent

Owner argues that "[f]or the same reasons discussed above regarding Crowds and Border, MorphMix does not disclose a 'first client device' as recited in claim 1 under the purely role-based constructions." *Id*. at 47. Patent Owner also contends MorphMix does not disclose step 1[d] of claim 1. *Id*. at 47–48. Patent Owner argues that "[f]or the same reasons discussed above regarding Crowds and Border, during performance of this method step, under the purely role-based constructions, node (c) is operating in the role of a server, not a client, and therefore node (c) cannot be a client device . . . Also, under the purely role-based constructions, node (b) is operating in the role of a client, not a server, and therefore node (b) cannot be a server." *Id*. Patent Owner also contends that Petitioner does not analyze the claims under Patent Owner's claim constructions and MorphMix does not disclose the architecture of claim 1. *Id*. at 48–50. We do not agree with these arguments for reasons previously discussed for Crowds. Among other reasons, the arguments are not based on the language of the claims or the disclosure in the Specification, and we have rejected Patent Owner's claim constructions.

b. Claims 6–8, 13, 15, 16, 18–24

Petitioner asserts that MorphMix discloses all the limitations of claims 6–8, 13, 15, 16, 18–24. Pet. 65–72. Patent Owner presents no arguments specific to any of these claims, except that Patent Owner argues that MorphMix does not disclose the limitations of claims 13 and 15. PO Resp. 52–53. For claim 13, Patent Owner asserts that Petitioner does not show that "the software application causes the processor on node (c) to store the first content or send the stored first content as recited in [the] claim." *Id*. For

claim 15, Patent Owner asserts that "under the purely role-based constructions, node (b) is operating in the role of a client, not a server, and therefore node (b) cannot be a server" and "node (c) is operating in the role of a server, not a client, and therefore node (c) cannot be a client device." *Id*. at 53. Other arguments directed to claim 15 are similarly based on claim constructions not adopted here. *See id*. at 52–53.

For claim 13, as Petitioner contends, and we agree, MorphMix discloses the use of typical user computers with memory that satisfies this storing step. Pet. Reply 23 (citing Ex. 2065 ¶ 241). For claim 15, we do not agree with Patent Owner's arguments as they are contrary to the claim constructions we have adopted and the claim language.

Thus, having considered the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that MorphMix anticipates claims 6–8, 13, 15, 16, 18–24 of the '510 patent.

J. Obviousness of Claims 1, 2, 6–11, 13, 15, 16, and 18–24 Over Border and RFC 2616

Petitioner contends that the claims anticipated by MorphMix (claims 1, 6–8, 13, 15, 16, and 18–24), as well as claims 2 and 9–11, would have been obvious in light of MorphMix and RFC 2616. Pet. 72–77. Because we have already determined that claims 1, 6–8, 13, 15, 16, and 18–24 are anticipated by MorphMix, we do not separately address them under this ground. For those claims, we rely on the Petition and our anticipation analysis under MorphMix to show that they would also have been obvious in light of MorphMix and RFC 2616.

Petitioner relies on the rationale provided for combining Crowds and RFC 2616 for the combination of RFC2616 with MorphMix. Pet. 72. For

claim 2, Patent Owner argues that when a node joins the MorphMix network, it sends a message to other nodes comprising the node's IP address, port, public key, and other information, and a person of ordinary skill in the art would know that a MAC address is an element of the data link layer of the open systems interconnection (OSI) underlying network communications over the Internet, so MorphMix discloses that, upon second server startup, there would have been a message sent that included an IP address. *Id*. at 74–75 (citing Teruya Decl. ¶¶ 283–89). For claim 9, Petitioner asserts that it would have been obvious for a person of ordinary skill in the art to rely on knowledge of TCP and HTTP communication protocols and RFC 2616 for keep-alive messages which would, for instance, be beneficial in settings like those disclosed by MorphMix for the reasons discussed for Crowds and Border. Pet. 75 (citing Teruya Decl. ¶¶ 290–293). For claims 10 and 11, Petitioner asserts that it would have been obvious to utilize the methods of RFC 2616 in MorphMix for validity checking, as discussed above for Crowds. *Id*. at 76 (citing Teruya Decl. ¶¶ 294–297).

In addition to the arguments presented for MorphMix's anticipation grounds, Patent Owner presents similar arguments for MorphMix's obviousness grounds as those presented for Crowds' obviousness grounds, that is, that MorphMix teaches away because it suffers from poor performance, increased latency and has problems like lack of a centralized lookup service and "free riding." PO Resp. 51–52. We are not persuaded by these arguments because none of these arguments relate to a limitation of the claims or why a person of ordinary skill in the art would not have considered RFC 2616 in combination with MorphMix.

Additionally, for the reasons explained above, we conclude that Patent Owner's evidence purportedly showing commercial success, long-felt need, copying, and industry praise lacks merit and is entitled to little weight because Patent Owner has not shown nexus with the claimed invention. Thus, weighing Patent Owner's secondary considerations evidence together with Petitioner's evidence of obviousness, Petitioner has established the obviousness of challenged claims 1, 6, 8–11, 13, 15–20, and 22–24 of the '510 patent in view of MorphMix and RFC 2616.

Accordingly, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 6–11, 13, 15, 16, and 18–24 would have been obvious over MorphMix and RFC 2616.

III. MOTION TO SEAL[18]

Patent Owner filed a Motion to Seal and To Enter the Proposed Protective Order, which seeks to seal Exhibits 2039, 2041–2044, and 2065 and associated portions of the Patent Owner Response, and to enter an agreed-upon Joint Protective Order. Paper 32; Ex. 2068. Patent Owner asserts that Exhibit 2039 contains sensitive technical information, Exhibits 2041–2044 contain source code and related files, Ex. 2065 is an expert declaration that references some of the sensitive information in the exhibits, and portions of the Patent Owner Response incorporates some of the sensitive information. Paper 32, 2–6. Patent Owner argues that it would be harmed by the public disclosure of its highly sensitive information, which

[18] Petitioner filed a Motion to Exclude Evidence (Paper 46), which was withdrawn. *See* Tr. 5:5–12.

it has taken steps to guard against disclosure, which outweighs the public's interests. *Id*. This Motion is unopposed.

We have reviewed the exhibits at issue, including the redacted portions of the exhibits and Patent Owner Response, and the explanations of the confidential nature of the materials for which sealing is sought, as discussed in the Motion. We grant the Motion to Seal and the associated request to enter the Protective Order. Paper 32; Ex. 2068.

IV. CONCLUSION[19]

For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that challenged claims 1, 2, 6–11, 13, and 15–24 of the '510 patent are unpatentable. In summary:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 6, 7, 13, 15, 16, 18–24	102(b)	Crowds	1, 6, 7, 13, 15, 16, 18–24	
1, 2, 6–11, 13,	103(a)	Crowds, RFC	1, 2, 6–11, 13,	

[19] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2). Patent Owner is further reminded that under 37 C.F.R. 42.73(d)(3)(i), a patent owner is precluded from taking action inconsistent with the adverse judgment, including obtaining in any patent a claim that is not patentably distinct from a cancelled claim.

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
15, 16, 18–24		2616	15, 16, 18–24	
1, 6, 10, 15–20, 23, 24	102(b)	Border	1, 6, 10, 15–20, 23, 24	
1, 6, 8–11, 13, 15–20, 22–24	103(a)	Border, RFC 2616	1, 6, 8–11, 13, 15–20, 22–24	
1, 6–8, 13, 15, 16, 18–24	102(b)	MorphMix	1, 6–8, 13, 15, 16, 18–24	
1, 2, 6–11, 13, 15, 16, 18–24	103(a)	MorphMix, RFC 2616	1, 2, 6–11, 13, 15, 16, 18–24	
Overall Outcome			1, 2, 6–11, 13, 15–24	

V. ORDER

Accordingly, it is

ORDERED that claims 1, 2, 6–11, 13, and 15–24 of U.S. Patent No. 11,044,510 B2 have been shown to be unpatentable;

FURTHER ORDERED that the Motion to Seal (Paper 32) is *granted*;

FURTHER ORDERED that the request to enter the protective order is *granted*;

FURTHER ORDERED that, no later than ten business days after the issuance of this Final Written Decision, the parties may file a joint motion to seal portions of this Final Written Decision, explaining why portions of it should remain under seal, and including as an attachment a redacted version of the Final Written Decision that can be made publicly available;

FURTHER ORDERED that the present decision shall remain under seal until any joint motion to seal the Final Written Decision is resolved;

FURTHER ORDERED that the present decision shall be made public if, after the expiration of the time for the parties to file a joint motion to seal, no such motion has been filed; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PETITIONER:

Craig Tolliver
George "Jorde" Scott
John C. Heuton
CHARHON CALLAHAN ROBSON
& GARZA, PLLC
ctolliver@ccrglaw.com
jscott@ccrglaw.com
jheuton@ccrglaw.com

PATENT OWNER:

Thomas M. Dunham
Elizabeth A. O'Brien
RUYAKCHERIAN LLP
tom@dunham.cc
elizabetho@ruyakcherian.com