

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OXYLABS, UAB,
Petitioner,

v.

BRIGHT DATA LTD.,
Patent Owner.

IPR2024-00126
Patent 11,616,826 B2

Before KRISTEN L. DROESCH, SHEILA F. McSHANE, and
RUSSELL E. CASS, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

Granting Motion to Seal and Protective Order

U.S.C. § 318(a); 37 C.F.R. § 42.14

I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, Petitioner has established by a preponderance of the evidence that claims 1–10, 12, 15–19, and 21–25 of U.S. Patent No. 11,616,826 B2 (Ex. 1001, “’826 Patent”) are unpatentable.

A. Procedural History

Oxylabs, UAB (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–10, 12, 15–19, and 21–25 of the ’826 Patent. Paper 1 (“Pet.”). Bright Data Ltd. (“Patent Owner”) timely filed a Preliminary Response. Paper 7. Pursuant to 35 U.S.C. § 314, we instituted trial on June 14, 2024, as to all of the challenged claims and all grounds of unpatentability raised in the Petition. Paper 9 (“Institution Decision,” “Dec. on Inst.”).

After institution of trial, Patent Owner filed a Response (Paper 14, “PO Resp.”), to which Petitioner filed a Reply (Paper 18, “Pet. Reply”), to which Patent Owner filed a Sur-reply (Paper 21, “PO Sur-reply”).

Petitioner relies on a Declaration of James Olivier, Ph.D., (Ex. 1002) to support its Petition. Patent Owner relies on a Declaration of Tim A. Williams, Ph.D., (Ex. 2041) to support its Response.

Dr. Olivier and Dr. Williams were cross-examined during trial, and transcripts of Dr. Olivier’s deposition (Exs. 2013, 2014) and Dr. Williams’s deposition (Ex. 1029) are included in the record.

B. Real Parties In-Interest

Petitioner indicates that the real parties in-interest are Oxylabs, UAB; coretech It, UAB; and Code200, UAB. Pet. 2. Patent Owner indicates that Bright Data Ltd. is the real party in-interest. Papers 5, 6.

C. Related Matters

Petitioner indicates the '826 Patent issued from an application that is a continuation of a chain of patent applications, including patent applications that issued as U.S. Patent Nos. 11,044,341 ("341 Patent"), 10,469,628 ("628 Patent"), 10,225,374, and 10,069,936 ("936 Patent"). See Pet. 3. Petitioner also indicates that the '826 Patent shares a common specification with and claims entitlement to the same earlier effective filing date as U.S. Patent Nos. 10,484,511 ("511 Patent"), 11,190,622 ("622 Patent"), 10,257,319 ("319 Patent"), 10,484,510 ("510 Patent"), and 10,637,968 ("968 Patent"). See *id.*

The parties indicate that there is currently no litigation involving the '826 Patent. Pet. 3; Papers 5, 6. The parties, however, identify numerous other patents assigned to Patent Owner that are or were the subject of district court proceedings and appeals to the Federal Circuit. See Pet. 3–4; Paper 5, 5–8; Paper 6; 5–8. In particular, the parties identify the *Bright Data Ltd. v. Code200, UAB*, Case No. 2:19-cv-00396 (E.D. Tex.) ("Code200 litigation") involving the '511 Patent and '968 Patent, and *Bright Data Ltd. v. Teso LT, UAB*, Case No. 2:19-cv-00395 (E.D. Tex.) ("Teso litigation") involving the '319 Patent and '510 Patent. See Pet. 3; Paper 5, 5; Paper 6, 5.

The parties also identify numerous proceedings before the Office and the Patent Trial and Appeal Board related to other applications or patents

assigned to Patent Owner, some of which have been appealed to the Federal Circuit. *See* Pet. 4–5; Paper 5, 1–5; Paper 6, 1–5.

D. The '826 Patent (Ex. 1001)

The '826 Patent is directed to “increasing network communication speed for users, while lowering network congestion for content owners and ISPs [(Internet Service Providers)].” Ex. 1001, code (57), *see id.* at code (54), 1:23–25. The system utilizes network elements including an acceleration server, clients, agents, and peers. *See id.* at code (57), Fig. 3. Communication requests generated by applications are intercepted by the client on the same machine. *See id.* at code (57), 13:4–8, Fig. 9, step 354. The IP address of the server in the communication request is transmitted to the acceleration server, which provides a list of agents to use for the IP address. *See id.* at code (57), 13:8–22, Fig. 9, step 356. The communication request is sent to the agents and one or more of the agents respond with a list of peers that have previously seen some or all of the content (after checking whether this data is still valid). *See id.* at code (57), 13:50–61, Fig. 9, step 360, Fig. 10, step 382. “The client then downloads the data from these peers in parts and in parallel, thereby speeding up the Web transfer, releasing congestion from the Web by fetching the information from multiple sources, and relieving traffic from Web servers by offloading the data transfers from them to nearby peers.” *Id.* at code (57), *see id.* at 15:12–16:11, Fig. 11.

E. Illustrative Claim

Claim 1 is independent, and claims 2–10, 12, 15–19, and 21–25 depend directly or indirectly therefrom. *See* Ex. 1001, 19:16–21:4. Claim 1 is illustrative and reproduced below:

1[p] A method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the first server, the method by the first server comprising:

1[a] storing, operating, or using, a server operating system;

1[b] receiving, from the first client device, the first content identifier;

1[c] selecting, an IP address from the list according to a criterion;

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

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

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

Ex. 1001, 19:16–33 (Petitioner’s references 1[p] through 1[f] added).

F. Asserted Challenges to Patentability and Asserted Prior Art

Petitioner asserts that claims 1–10, 12, 15–19, and 21–25 would have been unpatentable based on the following grounds (Pet. 8–10):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 10, 12, 15–19, 21–25	103(a) ¹	Kocherlakota ²
6–9	103(a)	Kocherlakota, RFC 1122 ³
1–6, 10, 12, 15–19, 21–25	103(a)	Cohen ⁴
6–9	103(a)	Cohen, RFC 1122

II. ANALYSIS

A. Claim Construction

In an *inter partes* review proceeding, the Board applies the same claim construction standard as that applied in federal courts in a civil action under 35 U.S.C. § 282(b), which is generally referred to as the *Phillips* standard. See 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Under the *Phillips* standard, “words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips*, 415 F.3d at 1312. “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

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because the ’826 Patent claims an effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA version of § 103.

² US 6,785,705 B1, issued Aug. 31, 2004 (Ex. 1003).

³ Internet Engineering Task Force, Network Working Group, *Requirements for Internet Hosts—Communication Layers* (R. Braden ed., Request for Comments 1122, October 1989) (Ex. 1006).

⁴ US 6,389,462 B1, issued May 14, 2002 (Ex. 1004).

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).

Extrinsic evidence may be useful, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. *Phillips*, 415 F.3d at 1319.

Petitioner offers claim constructions for the following terms and phrases: “client device,” “first server,” “server operating system,” “selecting, an IP address,” and “sending the selected IP addresses to the first client device.” See Pet. 17–20. Patent Owner offers claim constructions for these same terms. PO Resp. 7–35. Patent Owner further asserts the preamble is limiting, and contends that Petitioner also analyzes the preamble as if it were limiting. See *id.* at 6.

1. “*Selecting, an IP Address from the List According to a Criterion*”
and “*Sending, . . . Using the Selected IP Addresses*”

Petitioner notes the inconsistency in the claim language between the “selecting, an IP address” (limitation 1[c]) and “the selected IP address” (limitation 1[d]). See Pet. 20. According to Petitioner, “[u]nder its plain meaning, a POSITA would have understood sending **the** selected IP addresses to correspond to sending the IP address selected in claim 1.” *Id.* (citing Ex. 1002 ¶ 62). Patent Owner does not dispute this understanding. See PO Resp. 9–10 (citing Ex. 2041 ¶ 67).

Patent Owner contends that “selecting an IP address” means “making a choice in preference to another or others.” See PO Resp. 7 (citing Ex. 2041 ¶ 69), 9 (citing Ex. 2041 ¶ 72). In support of its arguments, Patent Owner cites to two dictionary definitions for “select.” See *id.* (citing Exs. 2017, 2018). Patent Owner further contends that “‘selecting’ involves making a choice and requires some intelligent decision-making.” *Id.* at 7

(citing Ex. 2041 ¶ 69). In support of its argument Patent Owner directs attention to the '826 Patent Specification's disclosure of determining the numerical closeness of the IP addresses in the list relative to the destination web server. *See id.* (citing Ex. 1001, 13:25–29). Patent Owner asserts that Petitioner's expert appears to agree with this understanding of “selecting” as involving making a choice. *See id.* at 7–9 (citing Ex. 1001, 13:25–29, 13:64–14:2, 14:10–13, Fig. 10 (block 386); Ex. 1002 ¶ 64; Ex. 2013, 47:12–15, 48:1–5, 49:1–8, 49:21–50:12; Ex. 2041 ¶ 69); PO Sur-reply 2 (citing Ex. 2013, 50:6–12).

According to Patent Owner, “a POSA would have understood the step of ‘selecting’ requires the first server to make a choice in preference to another or others,” and is “consistent with the relevant prosecution histories of predecessor patents.” *See* PO Resp. 9 (citing Ex. 2041 ¶ 72). In support of its argument, Patent Owner directs attention to the prosecution history of the parent '341 Patent in which, according to Patent Owner, “the patentee explained that the cited reference did not teach a server performs the ‘selecting’ limitation.” *Id.* (citing Ex. 1008, 128); *see* PO Sur-reply 2.

In the Reply, Petitioner contends that there is nothing in claim 1 or the cited portions of the '826 Patent specification that support Patent Owner's proposed interpretation. *See* Pet. Reply 4 (citing Ex. 1001, 13:25–29). Petitioner asserts that the Board rejected a similar argument in IPR2022-00687 challenging the counterpart '622 Patent. *See id.* at 4–5 (citing Ex. 1028, 36). Petitioner asserts that Patent Owner's references to examples of “selecting” in the '826 Patent do not limit “selecting” as recited in claim 1 to some undisclosed narrower interpretation. *See id.* at 5 (citing Dec. on Inst. 26).

In the Sur-reply, Patent Owner contends that Petitioner ignores multiple citations to the '826 Patent Specification with supporting admissions from Petitioner's expert, the prosecution history, and the cited extrinsic evidence. *See* PO Sur-reply 2 (citing Pet. Reply 4–5).

Claim 1 recites “selecting, an IP address from the list according to a criterion.” Ex. 1001, 19:16–33. Claim 1, therefore, only requires that the selection of the IP address from the list be accomplished “according to a criterion,” which is broader than the construction that Patent Owner advocates. Patent Owner's arguments urge the Board to import a limitation of comparison (e.g., preference to another or others) into the claim from an embodiment disclosed in the '826 Patent Specification. *See* PO Resp. 7–8 (citing Ex. 1001, 13:25–29, 13:64–14:2, 14:10–13; Ex. 2041 ¶ 69). For example, the '826 Patent Specification cited by Patent Owner discloses selecting an agent based on the speed of the reply by each agent and whether the agent has the requested information. *See* Ex. 1001, 13:64–14:9. We decline to import a limitation of comparison into the claim because Patent Owner does not direct us to any expressions of manifest exclusion or restriction in the Specification demonstrating an intent to deviate from the ordinary and customary meaning for “selecting . . . according to a criterion.” *See* PO Resp. 7–8 (citing Ex. 1001, 13:25–29, 13:64–14:2; Ex. 2041 ¶ 69); *see Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004). Patent Owner also urges to Board to import a limitation of “some intelligent decision-making” into the claim. Again, we decline to import this limitation into the claim because, apart from Dr. Williams's testimony, Patent Owner does not direct us to any explanation or support for the need to deviate from the ordinary and customary meaning for “selecting . . . according to a criterion,” nor, for that matter, does Patent Owner provide an

explanation of the scope of what requiring “some intelligent decision-making” consists of. See PO Resp. 7 (citing Ex. 2041 ¶ 69). Thus, we decline to import limitations into the claim, as proposed by Patent Owner.

Turning to the extrinsic evidence, in particular the dictionary definitions provided by Patent Owner for “selecting,” we determine that “to choose (as by fitness or excellence) from a number or group,” “pick out” “to make a choice” and “to choose a small number of things or to choose by making careful decisions” are not inconsistent with the ordinary and customary meaning for “selecting, an IP address from the list according to a criterion.” Exs. 2017, 2018. Likewise, we determine that the cross-examination testimony of Petitioner’s witness, Dr. Olivier, that his understanding of “selecting” requires the ability to choose among a set is not inconsistent with the ordinary and customary meaning for “selecting, an IP address from the list according to a criterion.” See Ex. 2013, 49:21–50:12.

After according appropriate weight and consideration to the parties arguments and cited supporting evidence, we decline to adopt Patent Owner’s proposed construction for “selecting, an IP address from the list according to a criterion” that would add a limitation requiring a comparison or some intelligent decision-making. As demonstrated in the analysis below, we need not provide explicit constructions for “selecting, an IP address from the list according to a criterion,” and “sending, . . . using the selected IP address.” 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))).

2. “Client Device” and “First Server”

a. Petitioner’s Assertions

Petitioner asserts that the challenged claims use the same terms “first server” and “client device” as the claims in the ’511 Patent and the related patents. See Pet. 17 (citing Ex. 1010, 3–4; Ex. 1011, 5). Petitioner asserts out that the district court in the Teso litigation and Code200 litigation construed “client device” as “communication device that is ***operating in the role of a client.***” Pet. 18 (citing Ex. 10101, 10–12; Ex. 1011, 13–15).

Petitioner points out that, in the Code200 litigation, “the Court addressed ‘whether one component can *simultaneously* server as more than one of: the client device, the first server[], and the web server,’ and concluded ‘[i]t cannot,’ and construed ‘first server’ as “server that is not the client device or the web server.”’ *Id.* (citing Ex. 1011, 13–15) (emphasis added).

According to Petitioner, “[a]cross three Orders the Court repeatedly confirmed that ‘client’ and ‘server’ refer to the role the device plays, not any hardware characteristics or label.” Pet. 17; see Pet. Reply 5 (similar argument). Petitioner further asserts that the district court also “confirmed 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.* (quoting Ex. 1013, 10).

Petitioner further contends that RFC 2616, referenced in the ’826 Patent as defining HTTP protocol, confirms the role-based constructions are correct. See Pet. 19 (quoting Ex. 1005, 8; citing Ex. 1001, 16:21–22; Ex. 1002 ¶ 58). Petitioner asserts that RFC 2616 “provides further guidance on each of these ‘roles,’ [by] defining a ‘client’ as ‘establish[ing] connections for the purpose of sending requests’ and a ‘server’ [as] ‘accept[ing] connections in order to service requests by sending back

responses.”” *Id.* (citing Ex. 1005, 8; Ex. 1002 ¶ 58). Petitioner also contends that RFC 2616 explains that a proxy “is an ‘intermediary program which **acts as both a server and a client** for the purpose of making requests on behalf of other clients.”” *Id.* (citing Ex. 1005, 8; Ex. 1002 ¶ 59). According to Petitioner, “[t]hese RFC 2616 statements would have carried significant weight with a [person of ordinary skill in the art].” *Id.* (citing Ex. 1002 ¶ 59).

b. Patent Owner’s Assertions

Patent Owner contends that “‘client device’ means ‘consumer computer’ or alternatively, ‘consumer communication device,’” and “‘first server’ means ‘server that is not a client device.’” PO Resp. 13 (citing Ex. 2041 ¶ 80); *see* PO Sur-reply 5. Patent Owner argues that patentee acted as a lexicographer and distinguished “client devices” from “commercial network ‘servers,’” and that prosecution histories confirm that “client devices” and “servers” are different hardware types and that role-based constructions are precluded. PO Resp. 14–20. Patent Owner asserts that its proposed construction is consistent with the claim language, and the ’826 Patent Specification that distinguish servers from client devices as different types of hardware. *See id.* at 21–25. Patent Owner also contends the district court construed “client device” as a communication device, and servers are not a type of communication device. *See id.* at 26–27 (citing Ex. 1010, 12), 29 (citing Ex. 2023, 10, 14).

Patent Owner contends that the claim language distinguishes servers and client devices, and that many prosecution history statements confirm that servers and client devices are different hardware. *See* PO Resp. 14–21, 25; PO Sur-reply 5–8 (argument that prosecution histories support Patent

Owner's hardware-based constructions). Patent Owner further asserts that the Specification repeatedly differentiates client devices and servers as different types of hardware components. *See* PO Resp. 21–23. In particular, Patent Owner contends that “a POSA would have understood that a client device is a consumer computer with specific software.” *Id.* at 21 (citing Ex. 2041 ¶ 161).

Patent Owner contends that a person of ordinary skill in the art “would understand there are differences between client devices and servers, where a ‘server’ is a dedicated, always-on, robust network component capable of a large number of connections” and “a server is a commercial network element, not a consumer device, and not easily portable or moved about by a consumer.” PO Resp. 24 (citing Ex. 2041 ¶¶ 178–179). Patent Owner presents additional arguments regarding the understanding by a person of ordinary skill in the art of specific functions, capabilities, and performance characteristics of a server. *See id.* at 24–25 (citing Ex. 2041 ¶¶ 179–180; Ex. 2035; Ex. 2036, 5, 6; Ex. 2037, 7).

Patent Owner contends that Petitioner's “purely role-based constructions” contradict the district court's claim construction orders for “client device” and “second server,” the express claim language, the Figures of the '826 Patent Specification, and the prosecution history statements. *See* PO Resp. 26–32. More specifically, Patent Owner asserts that Petitioner's “purely role-based constructions” are not appropriate because they do not give special meaning to “communication device,” they attempt to remove the requirement that a first server be a server, they do not distinguish a server from a communication device, and they do not recognize that a server is not a communication device. *See id.* at 26–28 (citing Ex. 2041 ¶¶ 79, 83). Patent Owner further contends that Petitioner's purely role-based

constructions contradict the findings by the district court because “[t]he district court expressly rejected genericizing the claim terms.” *Id.* at 26–29; *see also* PO Sur-reply 8 (similar argument). Patent Owner further asserts that Petitioner’s purely role-based constructions contradict the express claim language, the specification, and prosecution history statements. *See* PO Resp. 29–32.

c. Analysis

For the reasons discussed below, we determine that the preponderance of the evidence of record supports Petitioner’s adopted district court’s construction for “first server” as “server that is not the client device or the web server” which we find to apply here in view of the full record. Conversely, there is relatively little evidence of record to support Patent Owner’s construction that a “first server” is a “server that is not a client device.” In other words, the underlying issue is whether a first server may operate in different roles (such as in the role of a client or a server) or requires specific hardware that is distinct from client device hardware, and we find that the role-based construction is supported by the evidence of record.

i. Claim Language

Under *Phillips*, the starting point for our analysis is the language of the claims themselves. *See Phillips*, 415 F.3d at 1314. In claim 1, the steps of the method are performed “by the first server.” Ex. 1001, 19:20–21; *see* PO Resp. 29 (citing Ex. 2041 ¶ 101). In steps 1[b] and 1[f] of claim 1, the first server, “receiv[es], from the first client device, the first content identifier,” and “send[s] the received first content, or part thereof, to the first client device.” *See* Ex. 1001, 19:23–24, 19:32–33. Consistent with the

district court’s claim construction for “first server” as “server that is not the client device or the web server,” which we find applies here, steps 1[b] and 1[f] of claim 1 confirm that the first server is not the first client device.

The parties address the issue that the “first server” acts in differing roles in claim 1. Petitioner asserts that the required functionality recited in claim 1 is consistent with the district court’s determinations on the role-based nature of the term. *See* Pet. 17–18 (citing Ex. 1010, 3–4, 10–12; Ex. 1011, 5, 11–15; Ex. 1012, 2; Ex. 1013, 7–11). In contrast, Patent Owner contends that, because the method steps of claim 1 are performed by the first server, a person of ordinary skill in the art “would have understood that the ‘first server’ is necessarily and consistently a server as the claimed methods are performed.” PO Resp. 29 (citing Ex. 2041 ¶ 101); *see also id.* at 25 (similar argument). Patent Owner asserts that “under the purely role-based constructions, the ‘first server’ would sometimes be operating in the role of a client,” and therefore, “contradict the claim language.” *Id.* at 29–30 (citing Ex. 2041 ¶ 101).

Patent Owner, nonetheless, contends “[b]ecause claim 1 of the ’826 Patent refers to an intermediary server An intermediary necessarily toggles roles at different points in time for different connections.” PO Resp. 25. More specifically, Patent Owner contends that at the point in time of limitation 1[e], under Petitioner’s purely role-based constructions, the first server would be operating in the role of a client not a server, and at the point in time of dependent claim 3, the first server would be operating in the role of a client not a server. *See id.* at 30 (citing Ex. 2041 ¶¶ 102–103).

Consistent with the aforementioned claim limitations, 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. 1013, 10 (emphasis omitted). That is, although the district court determined that a single component could not simultaneously serve more than one function at any particular time, a component could operate in different roles, such as the “first server” that operates as a server for step 1[b] and operates as a client for step 1[e] and in dependent claim 3. The language of claim 1 supports Petitioner’s proposed construction for “first server” and the district court’s understanding of that construction.

In sum, we agree with Petitioner’s district court’s construction for “first server” as “server that is not **the** client device or the web server,” i.e., language permitting the first server to operate in different roles, because it is consistent with the limitations of claim 1. See Ex. 1011, 13–15 (emphasis added); *accord* Ex. 1010, 13–14. Patent Owner’s argument interpreting the term “‘first server’ means ‘server that is not **a** client device” (PO Resp. 13 (emphasis added)) is not supported by the claim language.

We further discuss the construction for “first server” in more detail below with respect to the ’826 Patent Specification, the prosecution histories, and the extrinsic evidence.

ii. ’826 Patent Specification

The district court’s construction for “first server” as a “server that is not the client device or the web server” is supported by the ’826 Patent Specification’s disclosure of the acceleration server which receives an IP address in a resource request from the client device. See Ex. 1001, 12:57–13:36, Fig. 3, Fig. 9, blocks 352–358. The disclosed acceleration server is not the disclosed client device because the acceleration server receives the IP address from the client device, and, therefore, cannot also be

the client device. *See id.* at Ex. 1001, 13:8–15 (client 200 sends IP address to acceleration server 162).

In contrast, Patent Owner asserts that the Figures of the '826 Patent make clear that an intermediary proxy client device is different from an intermediary proxy server. *See* PO Resp. 21 (citing Ex. 2041 ¶¶ 119–120). According to Patent Owner, “[j]ust because proxy server 6 [of Figure 1] operates in the role of a client with respect to the web servers, proxy server 6 does not transform into an actual client device. . . . Proxy server 6 is a server, regardless of the role being performed.” PO Resp. 22 (citing Ex. 2041 ¶ 174). Further according to Patent Owner, “[j]ust because agent 122 operates in the role of a server with respect to client 102, agent 122 does not transform into an actual server. . . . Agent 122 is a client device regardless of the role being performed.” *Id.* (citing Ex. 2041 ¶ 159). Patent Owner also points to the use of different symbols in the figures to distinguish client devices from servers. *See* PO Resp. 23. According to Patent Owner, the '826 Patent Specification “repeatedly differentiates client devices (client[s], peers, and agents) and servers (proxy servers, acceleration servers, and web servers) as different types of hardware components.” *Id.* (citing PO Resp. 4–6); *see also id.* at 14, 21 (similar arguments).

We do not agree with Patent Owner’s suggestion that proxy server 6 of Figure 1 must be a different type of hardware from agent 122 of Figure 3 because Patent Owner’s suggestion overlooks that Figure 1 discloses a prior art example of using a proxy within a network, while Figure 3 discloses an example of a communication network that includes an agent and an acceleration server, as well as peers, all of which are not included in Figure 1. *Compare* Ex. 1001, 2:8–23, 3:66–67, Fig. 1, *with id.* at 4:3–5, 4:41–5:20, Fig. 3. In particular, we note that the '826 Patent Specification

discloses that, with respect to Figure 3, “[d]ue to functionality provided by software stored within each communication device, which may be the same in each communication device, each communication device may serve as a client, peer, or agent, depending upon requirements of the network.”

Ex. 1001, 4:46–50. In other words, the ’826 Patent Specification does not disclose specific hardware for the client, peer, or agent – it is the software that provides the specific functionality. *See id.* Other than Patent Owner’s faulty reasoning, Patent Owner’s witness, Dr. Williams, does not cite additional ’826 Patent Specification disclosures to support his testimony that the ’826 Patent Specification differentiates client devices and servers as different types of hardware components. *See, e.g.,* Ex. 2041 ¶¶ 57–62, 73–76, 81, 106–118, 158–181. Therefore, we give little weight to Dr. Williams’s testimony regarding that the ’826 Patent Specification differentiates client devices and servers as different types of hardware. *See* 37 C.F.R. § 42.65(a) (Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight).

Patent Owner also contends that a person of ordinary skill in the art “would have known that a server is a commercial network element, not a consumer device, and not easily portable or moved about by a consumer.” PO Resp. 24 (citing Ex. 2041 ¶¶ 178–179); *see also id.* at 23 (argument that “client device” means a consumer computer that is typically portable and easily moved; citing Ex. 2041 ¶ 168). Patent Owner contends that a person of ordinary skill in the art

would have understood a server to (a) to remain online with greater availability and maximum up time to receive requests almost all of the time (switching off servers can be catastrophic to a network); (b) to efficiently process multiple requests from multiple client devices at the same time; (c) to generate various

logs associated with the client devices and traffic from/to the client devices; (d) to primarily interface and respond to the client devices, oftentimes without a Graphical User Interface (“GUI”); (e) to have greater fault tolerance and higher reliability with lower failure rates; and/or (f) to provide scalability for increasing resources to serve increasing client demands.

PO Resp. 24–25 (citing Ex. 2041 ¶ 179). Patent Owner relies on Dr. Williams’s testimony that his opinion of the understanding of a person of ordinary skill in the art is based on the claim language, Specification, statements made during prosecution, and by comparison with a client device. See Ex. 2041 ¶¶ 173–181. We discuss the prosecution histories below, but note that Dr. Williams does not identify any disclosures in ’826 Patent Specification that support his testimony of a different hardware components for a server and client device. See, e.g., Ex. 2041 ¶¶ 57–62, 73–76, 81, 106–118, 158–181. Therefore, we give little weight to Dr. Williams’s testimony regarding the server hardware and client device hardware on the basis of the ’826 Patent Specification. See 37 C.F.R. § 42.65(a).

Moreover, RFC 2616, which is cited in the ’826 patent (Ex. 1001, 16:21–22), and which is version 1.1. of “Hypertext Transfer Protocol – HTTP/1.1,” which defines the HTTP protocol used in Internet communications (Ex. 1005, 1, 7), states that a “server” is an application program 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 8). Accordingly, this provides support that a “client device” and “server” refer to the roles they are performing. Patent Owner contends that the software definitions of RFC 2616 “are not appropriate for the disputed claim terms of the ’826

Patent at least because they do not refer to hardware.” PO Resp. 33 (citing Ex. 2041 ¶ 153); *see id.* at 34 (similar argument).

We do not agree with Patent Owner’s arguments because the ’826 Patent Specification addressed above and the prosecution histories addressed below do not support Patent Owner’s arguments drawing a distinction between a first server hardware and a client device hardware.

In summary, we find that the ’826 Patent Specification supports Petitioner’s district court’s construction of “first server” as “server that is not the client device or the web server,” i.e., language that permits the first server to operate in different roles. We also find that the ’826 Patent Specification fails to provide sufficient support for Patent Owner’s construction for “first server” as “server that is not a client device,” i.e., language requiring specific hardware that is distinct from client device hardware.

iii. Prosecution Histories

Patent Owner argues the prosecution histories of the parent ’341 Patent, grandparent ’628 Patent, and great grandparent ’936 Patent support its proposed construction that “first server” means “server that is not a client device.” *See* PO Resp. 15–19 (citing Ex. 1008, 124, 125; Ex. 2003, 4–5; Ex. 2005 ¶¶ 3, 20; Ex. 2028, 123–124, 163, 164, 166–167, 215; Ex. 2041 ¶¶ 123–129, 135–142). Patent Owner contends that during prosecution of the great grandparent ’936 Patent, Applicant “expressly differentiated client devices and servers as having different attributes.” *Id.* at 16 (citing Ex. 2024 ¶¶ 123–129). More specifically, Patent Owner contends that the patentee stated the following: (1) servers are known to be dedicated devices in contrast to client devices, and (2) a client device is a non-server, and are

different types of network components, and the differentiation is known in the art. *See id.* at 16–17 (citing Ex. 2028, 163, 166, 215). Patent Owner also points to arguments concerning the Garcia prior art reference that was used as the basis for rejection. *Id.* at 17. According to Patent Owner, the patentee expressly stated that Garcia’s intermediary server does not correspond to an intermediary client device; Garcia client devices “are typically consumer owned and operated,” and “inherently [re]sources limited . . . in bandwidth and storage capability.” *Id.* (citing Ex. 2028, 163–164, 166–167). Further, according to Patent Owner, “[t]he examiner necessarily accepted the patentee’s arguments that a server cannot be equated to a client device because the examiner abandoned its prior reliance on Garcia’s servers and instead relied on the intermediary peer nodes of Yu.” *Id.* at 18 (citing Ex. 2028, 123–124). Patent Owner concludes that the prosecution history informed the public and a POSA that as used in these patents, a client device is a consumer computer and a server is a dedicated commercial computer that is not a client device. *Id.*

We do not agree with Patent Owner’s arguments. The claims that were under consideration during prosecution of the ’936 Patent are different than the claims at issue here. Although the claims under consideration during prosecution of the ’936 Patent recite a “first server,” the term “client device” was not recited. *See* Ex. 2028, 58–65 (April 9, 2018 amendment), 205–214 (Nov. 30, 2016 amendment), 692–697 (Dec. 23, 2013 preliminary amendment). Instead of reciting “client device,” the claims under consideration recited either “device(s),” and “client(s).” *See* Ex. 2028, 58–65 (April 9, 2018 amendment), 205–214 (Nov. 30, 2016 amendment), 692–697 (Dec. 23, 2013 preliminary amendment). Similarly, the issued claims in the ’936 patent recite “requesting client” and a separate “client”

and have multiple steps that differ from those of the '826 Patent. *See, e.g.*, Ex. 2027, 19:16–52.

Given these differences, we discount the significance of statements made by the patentee during prosecution of the '936 Patent to the assessment of claim construction for the '826 Patent. Moreover, considering the varying terms used in the claims, and the various terms used in the prosecution history statements (e.g., “client” “server,” “client device,” and “server device”), we do not find that the statements regarding “device” or “client” in the claims under consideration during prosecution are sufficient to act as a disclaimer of the scope of the term “first server” used in the claims here. *See* Ex. 2028, 96–97, 163–164, 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.”). Additionally, the examiner’s statements do not reflect an understanding of any disavowal of the scope of any claim terms. *See* Ex. 2028, 44, 77, 172.

Additionally, as discussed above, the '826 Patent’s claim language and Specification support Petitioner’s adoption of the district court construction for “first server.” In contrast, the '936 Patent prosecution is for a great grandparent of the '826 Patent and also involved evolving claim term amendments. *See Telcordia Techs., Inc. v. Cisco Sys., Inc.*, 612 F.3d 1365, 1375 (Fed. Cir. 2010) (“[P]rosecution history comments cannot trump the plain language of the claims and the direct teaching of the specification.”). For this reason, we find the '963 Patent prosecution history to be less pertinent to the construction of the '826 Patent claims than the claim language itself and the '826 Patent Specification. As the Federal Circuit has explained, 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 the great grandparent ’936 Patent with different claims having different claim language from the ’826 Patent claims under review.

Patent Owner also presents arguments based on the prosecution histories of the parent ’341 Patent and grandparent ’628 Patent to the ’826 Patent. *See* PO Resp. 26–27. Patent Owner asserts that during prosecution of the ’628 Patent, “the patentee expressly differentiated client devices and servers as different hardware.” *Id.* at 18 (citing Ex. 2003, 4–5; Ex. 2041 ¶¶ 135–138). According to Patent Owner, during prosecution of the ’341 Patent, “the patentee distinguished client devices and servers as different types of hardware components, and further distinguished the different architectures of the Yu and Barth references.” *Id.* at 19 (citing Ex. 1008, 124, 125; Ex. 2041 ¶¶ 139–142). In response, Petitioner asserts that nothing in the prosecution history makes any clear disavowal of the term “client device” as meaning a consumer computer having specific hardware that is distinct from the hardware of a server. *See* Pet. Reply 7 (citing Ex. 1008, 124–127; Ex. 2003, 2–5).

Based on our review of the prosecution histories of the ’341 Patent and ’628 Patent, we find that the prosecution statements do not rise to the level of differentiating or distinguishing client devices and servers as different hardware. *See* Ex. 1008, 124, 125; Ex. 2003, 4–5. For example,

the following statements were presented during the '341 Patent Prosecution:

(1) “the Yu invention is directed to using peer-to-peer direct communication, the Barth invention is focused on fetching information from additional servers;” and (2) “[t]he Yu reference . . . is focused on reducing a load of a server by accessing client peer devices rather than the server storing the required content.” Ex. 1008, 124–125. Contrary to Patent Owner’s arguments, we do not discern any distinction between hardware of a client device and a server based on the passages from the '341 Patent prosecution history cited by Patent Owner. As another example, the following statement was presented during the '628 Patent Prosecution: “[t]he Yu reference is directed to peer-to-peer communication and thus does not teach any content receiving from the first server.” Ex. 2003, 4. Again, contrary to Patent Owner’s arguments, we do not discern any distinction between client device hardware and server hardware based on passages from the '628 Patent prosecution history cited by Patent Owner.

In sum, we find that the prosecution history statements are not inconsistent with Petitioner’s district court’s construction for “first server” as a “server that is not the client device or the web server.” We also find that Applicant’s prosecution history statements do not provide sufficient support for Patent Owner’s construction for “first server” as “server that is not a client device.”

Patent Owner also points to claim construction statements made in the preliminary responses filed in IPR2020-01266 and IPR2020-01358. *See* PO Resp. 20 (citing Ex. 2050, 24–28, 31⁵; Ex. 2041 ¶¶ 150, 152). According to

⁵ Patent Owner incorrectly refers to the document’s page numbers 18–22, and 25, not the page numbers of Exhibit 2050.

Patent Owner, “the patentee expressly stated that the term ‘client device’ means consumer computer” and “made clear that a ‘client device’ is not a server and that a ‘second server’ is not a client device.” *Id.* (citing Ex. 2050, 24–28, 31⁶). Patent Owner asserts that “[t]hese statements by the patentee constitute clear and unmistakable disclaimer as to the scope of the terms client device and server in the common specification.” *Id.* (citing Ex. 2041 ¶¶ 150, 152).

In response to Patent Owner’s contentions regarding the preliminary response statements in IPR2020-01266 and IPR2020-01358, Petitioner asserts that “a patentee cannot change the scope of related patent claims by making an argument that was never accepted, or even considered by the Board.” Pet. Reply 8. Petitioner asserts that the Board rejected this same proposed construction when finding all claims of the ’622 Patent unpatentable. *See id.* (citing Ex. 1028, 13, 19–26). According to Petitioner, Patent Owner “cannot now circumvent the Board’s rejection of this proposed construction simply because P[atent] O[wner] advanced this same construction in another IPR where it was never considered.” *Id.*

In response to Petitioner’s Reply arguments, Patent Owner contends that Patent Owner disclaimed any scope of client device beyond consumer computer hardware and disclaimed any scope of server beyond server hardware. *See* PO Sur-reply 5 (citing *Aylus Networks, Inc.*, 856 F.3d 1353, 1359–1361 (Fed. Cir. 2017)). Patent Owner contends that the public was on notice of Patent Owner’s hardware constructions for these terms before the ’826 Patent issued, based on preliminary responses and responses filed in

⁶ Patent Owner incorrectly refers to the document’s page numbers 18–22, and 25, not the page numbers of Exhibit 2050.

IPR2024-00126
Patent 11,616,826 B2

IPR2020-01266, IPR2020-01358, IPR2022-00103, IPR2022-00135, IPR2022-00138, IPR2022-00353, IPR2022-00915, IPR2022-00916, IPR2021-01492, IPR2021-01496, and IPR2022-00687. Patent Owner asserts that in IPR2022-00687, the Board did not consider prosecution history disclaimer in IPR2020-01266 and IPR2020-01358. *See id.* at 5–6. Patent Owner contends that even though those two IPRs were denied institution, the Federal Circuit has made clear that a patentee’s statements during prosecution, whether relied upon or not, are relevant to claim interpretation. *See id.* at 6 (citing *Microsoft Corp. v. Multi-Tech Sys.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004)). Patent Owner asserts that the disclaimer in IPR2022-00687 is relevant to the ’826 Patent. *See id.* at 8 (citing *CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376 (Fed. Cir. 2022)).

“[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during *prosecution* be both clear and unmistakable.” *Omega Eng’g. Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–1326 (Fed. Cir. 2003) (emphasis added). Where “the alleged disavowal is ambiguous, or even amenable to multiple reasonable interpretations, [the Federal Circuit] ha[s] declined to find prosecution disclaimer.” *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1045 (Fed. Cir. 2016) (internal quotation marks and citation omitted). We have reviewed the preliminary response filed in IPR2020-01266, and do not find that Patent Owner’s arguments made therein act as a disclaimer of any scope of “server” beyond server hardware because Patent Owner’s arguments were made in the context of a contested proceeding and were never accepted or even considered by the Board. *See* Ex. 2050, 24–28, 31; Pet. Reply 8; PO Resp. 20; PO Sur-reply 5–6. Moreover, even if we were to accept Patent Owner’s argument that some disclaimer occurred, we do not discern any

potential disclaimer of the scope of “server” that would create a distinction between the hardware of a client device and hardware of a server. We note that Patent Owner’s proposed construction in IPR2020-01266 for “second server” is nearly identical to the constructions proposed by the plaintiffs in the district court proceedings and adopted by the district court — server that is not the client device. *Compare* Ex. 2050, 29–30, *with* Ex. 1010, 13, 16, 23–24, *and* Ex. 1011, 13, *and* Ex. 1013, 8. In addition, Patent Owner’s arguments asserting the relevance of prosecution history disclaimer in IPR2022-00687 are conclusory and undeveloped. *See* PO Sur-reply 6–7 (addressing an express disclaimer in the 687 IPR), 8 (arguing the disclaimer in the 687 IPR is relevant), 12 (arguing the disclaimer in the 687 IPR is relevant).

Patent Owner further asserts that in Reissue Application No. 18/523,800 (“Reissue Application”), filed after issuance of the ’826 Patent and concerning the related ’622 Patent that was the subject of IPR2022-00687, Patent Owner provided express lexicography and disclaimer, which is relevant to the ’826 Patent. *See id.* at 7–8 (citing Ex. 2048, 13–14; *Microsoft Corp.*, 357 F.3d at 1350). In the Reissue Application, Patent Owner stated as follows:

Applicant expressly notes for purposes of clear lexicography that the current claims recite the terms “client device” and “first server”. To be clear, Applicant understand[s] “client device” to mean “consumer computer.” *See, e.g.*, specification at col. 2, ll. 44-46. Applicant understands “first server” to be a server, which is a type of hardware component as understood by persons skill in the art, and which is different from a client device, a router, or a switch.

PO Sur-reply 7–8; Ex. 2048, 13–14.

We note that Patent Owner’s arguments in the Reissue Application have not yet been considered by the Examiner and, appear to leave open the meaning, for instance, of a “first server” to be a “server” “as would be understood by “persons [of] skill in the art.” Further, in *Microsoft*, the Federal Circuit considered statements regarding claim construction made during prosecution of a related patent which occurred after this issuance of a patent. *Microsoft*, 357 F.3d at 1347–50. However, an important issue in *Microsoft* is that the patents had a common specification and the later statements made during prosecution reinforced the Court’s initial findings concerning the construction of the term based, in large part, on the specification that was common to both patents. *See id.* That is not the case here. Instead, here, as discussed in Section II.A.2. c.ii., Patent Owner does not direct us to any disclosures in the ’826 Patent Specification limiting the first server to a specific type of hardware.

Accordingly, we find that statements made in the Reissue Application are not binding and we decline to adopt them in view the ’826 Patent Specification, which lacks any disclosure that the first server requires a specific type of hardware component, as discussed above.

iv. Conclusion

We have considered the parties’ respective positions, as well as the language of claim 1, the ’826 Patent Specification, and the prosecution histories. The language of claim 1, the ’826 Patent Specification, and the prosecution histories of IPR2020-01266 and IPR2020-01358 support Petitioner’s district court’s construction for “first server” as “server that is not the client device or the web server,” i.e., language that permits the first server to operate in different roles. Accordingly, we construe “first server”

as “server that is not the client device or the web server” consistent with the district court’s construction.

3. “*Server Operating System*”

Petitioner contends that “a server operating system” should be construed as an operating system capable of operating in the role of a server. *See* Pet. 19 (citing Ex. 1002 ¶ 60). Petitioner’s construction is based on the district court’s claim construction in the Code200 litigation of “first server” as “a communication device that is operating in the role of a server,” (Ex. 1011, 13–15; Ex. 1013, 2, 7–11) and based on the term “server operating system” not being used in the ’826 Patent Specification. *See id.* (citing Pet. 17–19). Petitioner asserts that the plain and ordinary meaning of a server operating system would have been understood to be a general-purpose server operating system such as, UNIX, LINUX, WINDOWS, etc. *See* Pet. 20 (quoting Ex. 1022, 8:53–55; citing Ex. 1002 ¶ 61).

Patent Owner disagrees and asserts that “server operating system” “means an operating system that runs on a server, a type of hardware.” PO Resp. 10 (emphasis added) (citing Ex. 1002 ¶ 73). According to Patent Owner, “[a] POSA would have understood that an operating system is the software that manages the hardware and controls the operation of programs” and “would have understood that a server operating system runs on **server** hardware.” *Id.* (citing Ex. 2041 ¶¶ 73, 76); *see id.* at 11 (citing Ex. 2041 ¶ 746. According to Patent Owner,

[a] POSA would have understood that a server operating system is different from a client operating system at least because a server operating system (a) is optimized for concurrent network connections, as opposed to a client operating system that prioritizes interactions with the user; (b) typically has more robust administration tools; (c) typically uses a command line

interface as opposed to a graphical user interface; (d) typically provides more fine-grained permissions and/or advanced security settings for multiple users/inputs (e.g., lockout services for certain connections, whitelist IP, etc.); and/or (e) manages redundant hard drives and/or multiple processors.

PO Resp. 10 (citing Ex. 2041 ¶ 73). Patent Owner further asserts that, “[i]n the context of the ’826 Patent, a POSA would have understood that a server uses a server operating system, while a client device uses a client operating system, because client devices and servers are different types of hardware.” *Id.* at 11 (citing Ex. 2041 ¶ 74). Patent Owner contends that Petitioner’s proposed construction is incorrect because: (1) it does not acknowledge that a server operating system is used by a server, a type of hardware; and (2) does not distinguish a server operating system from a client operating system. *See* PO Resp. 11–12 (citing Ex. 2013, 17:8–22, 18:1–21, 38:16–39:7, 39:11–40:22, 41:1–16, 42:17–43:7; Ex. 2041 ¶¶ 75–78).

Patent Owner further contends that Petitioner’s reliance on Exhibit 1022 shows that a server operating system runs on server hardware and supports Patent Owner’s construction. *See* PO Resp. 12–13 (citing Ex. 1002 ¶ 61; Ex. 1022, 7:1–19, 8:28–30, 8:51–56, 9:36–51; Ex. 2041 ¶ 79). Patent Owner further asserts that a generic reference to UNIX, Linux or Microsoft Windows NT operating system does not show that the operating system is a server operating system specifically because a person of ordinary skill in the art would have known that UNIX, Linux or Microsoft Windows NT offered various types of operating systems. *See id.* at 13 (citing Ex. 2041 ¶ 80).

In Reply, Petitioner asserts that Patent Owner’s proposed construction is duplicative of the hardware construction proposed for “first server” and is incorrect for the same reasons. *See* Pet. Reply 10 (citing Ex. 1029, 8:16–20;

PO Resp. 10; Pet. Reply 5–10). Petitioner further contends that Exhibit 1022 contradicts Patent Owner’s hardware theory because it expressly notes that clients are not limited to specific hardware and can include any device capable of sending information to or receiving information from a network including personal computers, multiprocessor systems, network PCs, mainframe computers, and the like. *See id.* at 11 (citing Ex. 1022, 6:65–7:3). In the Sur-reply, Patent Owner asserts that Petitioner does not explain how the disclosure of Exhibit 1022 directed to “clients 128” supports Petitioner’s construction for “server operating system.” *See* PO Sur-reply 14.

We agree with Petitioner that Patent Owner’s arguments addressing a “server operating system” are largely duplicative of Patent Owner’s arguments addressing the construction of “first server” as hardware that is distinct from client hardware. For the same reasons as those explained above addressing in Section II.A.2., we do not agree with Patent Owner’s arguments and decline to adopt Patent Owner’s proposed construction. Moreover, as demonstrated in the analysis below, we need not provide an explicit construction for “server operating system” to resolve the controversy. *See Realtime Data*, 912 F.3d at 1375.

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art as of October 8, 2009[□]—the ’826 Patent’s earliest claimed priority date—would have had at least a bachelor’s degree in computer science or related field (or equivalent experience), and at least two years’ experience working with and programming networked computer systems. . . . The prior art and the ’826 Patent also evidence this level of ordinary skill. Here, the background technology described in Section VII [of the Petition] and the prior art described in Section IX [of the Petition]

demonstrate that a [person or of ordinary skill in the art] would have been familiar with the underlying principles of Web, Internet, network communication, data transfer, and content sharing across networks, including the HTTP and TCP/IP protocols.

Pet. 10 (internal footnote omitted) (citing Ex 1002 ¶¶ 33, 34, 36).

Patent Owner asserts that a person of ordinary skill in the art (“POSA”) “would, as of 10/8/2009, 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. 2041 ¶ 25). According to Patent Owner, “Petitioner’s definition of a POSA is not materially different, but a POSA would have had at least a Bachelor’s degree in a relevant field, rather than purely experience. . . . Patent Owner’s analysis herein does not change under either definition of a POSA.” *Id.* (citing Dec. on Inst. 18; Ex. 2041 ¶ 26).

We adopt Petitioner’s definition of a person of ordinary skill in the art because it is consistent with the level of skill reflected by the ’826 Patent Specification and the asserted prior art, and does not materially differ from Patent Owner’s definition. Accordingly, the obviousness analysis below would not differ under either proposed definition.

C. Principles of Law

A 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 the 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 skill in the art; and (4) if in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

D. Challenge to Claims 1–5, 10, 12, 15–19, and 21–25 over Kocherlakota
1. Overview of Kocherlakota (Ex. 1003)

Kocherlakota is directed to the contemporaneous use of multiple web proxy servers by internet clients. See Ex. 1003, 1:6–9.

Figure 1 of Kocherlakota is reproduced below.

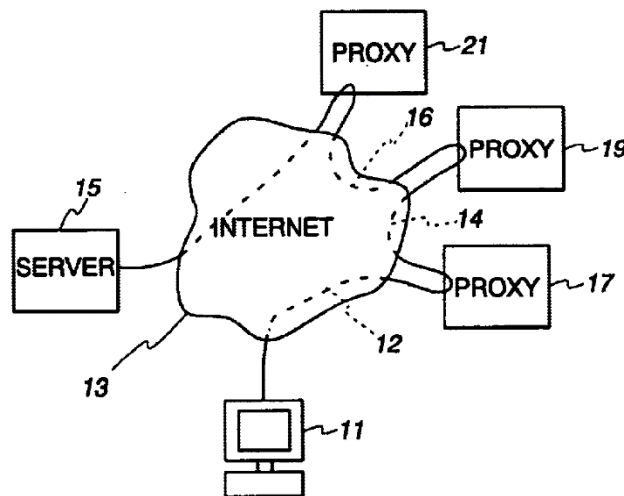


Figure 1 depicts client computer 11 connected to web server 15 through chained proxies 17, 19, 21. See Ex. 1003, 2:39–40, 2:54–3:9. Client computer 11 sends a URL to first proxy server 17, a session is established between client computer 11 and first proxy server 17, and first proxy server 17 returns an applet to client computer 11 where it is executed. See *id.* at 3:10–26; Fig. 3, steps 101, 103. The applet presents a window on client computer 11. See *id.* at 3:26–28, Fig. 3, step 103.

Figure 2 of Kocherlakota is reproduced below.

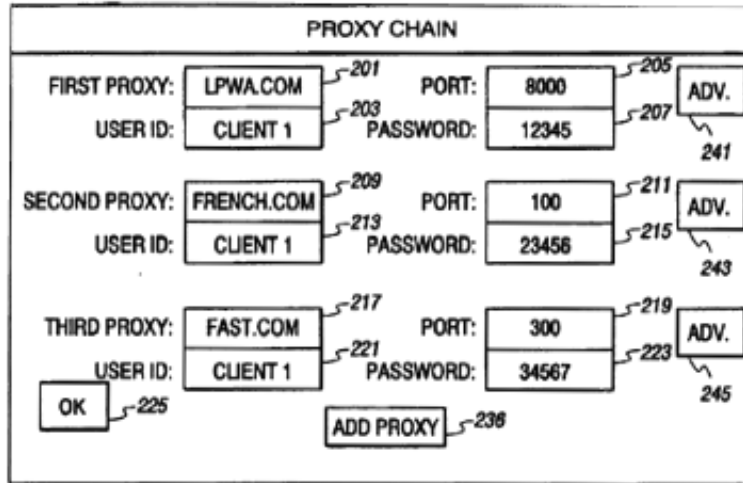


Figure 2 depicts an applet window that presents a number of information lines into which the client can enter identities of up to three proxy servers, port numbers, user names, etc. See Ex. 1003, 2:41–42, 3:28–36. Applet window includes advanced feature buttons 241, 243, 245 for each proxy. See *id.* at 4:55–63. Clicking an advanced feature button causes the applet to present an advanced feature window. See *id.* at 4:63–66.

Figure 7 of Kocherlakota is reproduced below.

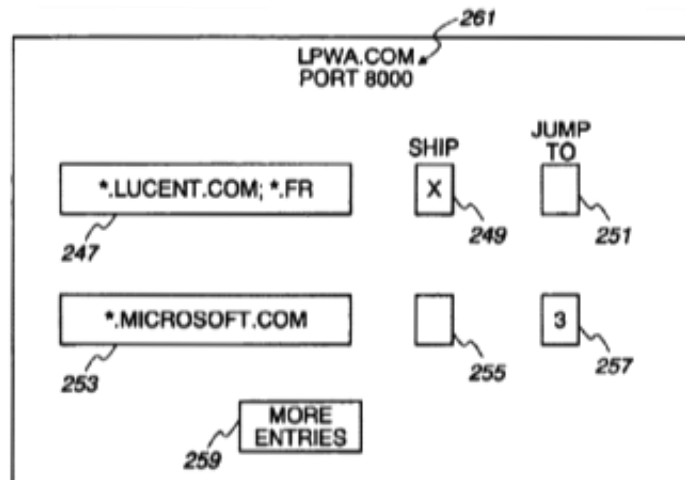


Figure 7 depicts advanced feature window for the first proxy when advanced feature button 241 is clicked. See Ex. 1003, 4:63–5:5. Text window 247 is

used to enter URLs for which first proxy 17 is to be skipped or a “jump to” command is to be entered. *See id.* at 5:8–10. URLs are typed into text window 247 and either the skip box 249 is checked or a “jump to” number is entered in text box 251. *See id.* at 5:11–13. Text windows 253 and 257 and check box 255 provide the same set of advanced features for another URL. *See id.* at 5:13–15. The advanced features allow the user to define which proxy servers are employed for predetermined URLs. *See id.* at 5:24–26.

Figure 6 of Kocherlakota is reproduced below.

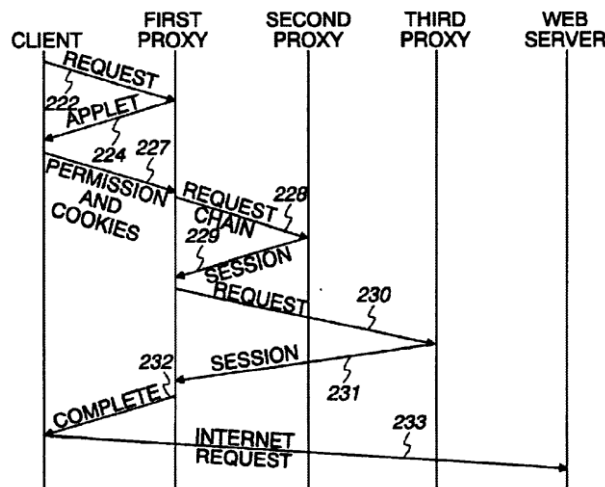


Figure 6 depicts a message sequence among clients, web proxies, and a web server to establish and use chained proxies to access the internet. *See* Ex. 1003, 2:50, 4:36–38. Request 222 for proxy use is sent from client computer 11 to first proxy 17. *See id.* at 4:39–40. First proxy 17 returns applet 224 to client computer 11 that is used identify further proxies and permission data of those proxies. *See id.* at 4:40–43. Proxy identities and permission data are sent 227 from client computer 11 to first proxy 17 which parses the message and begins to establish sessions with additional proxies. *See id.* at 4:43–45. Request 228 is sent to from first proxy 17 to second proxy 19 which returns message 229 to first proxy 17 signifying session establishment. *See id.* at 4:45–48. First proxy 17 sends message 230 to

third proxy 21 requesting a session with third proxy 21 which returns session message 231 to first proxy 17. *See id.* at 4:48–51. First proxy 17 signifies 232 to client computer 11 that the chain is complete. *See id.* at 4:51–52. Client computer 11 may access web server 15 via the chain of proxies as represented by message 233. *See id.* at 4:52–54.

2. Analysis of Claim 1

a. 1[p] Preamble

Petitioner contends that Kocherlakota teaches:

A method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the first server.

Ex. 1001, 19:16–21; *see* Pet. 27 (citing Ex. 1002 ¶ 98). More specifically, Petitioner asserts:

Kocherlakota discloses a method for use with web server 15 that stores a web page (the claimed “first content”) that is identified by a URL (the claimed “first content identifier”) and a client computer 11 (the claimed “first client device”) that is addressed over the Internet using an IP address (the claimed “first IP address”). . . . The client computer 11 can retrieve a web page through proxy 17 (the claimed “first server”), which stores a list of IP address associated with other devices.

Pet. 27 (citing Ex. 1002 ¶¶ 98, 99, 103); *see* Pet. 28 (asserting that a person of ordinary skill in the art would understand that client 11 is addressed over the Internet using an IP address, citing Ex. 1002 ¶ 103). Petitioner asserts that proxy 17 selects different proxies (e.g., proxy 19 or proxy 21) for routing. *See* Pet. 25 (citing Ex. 1002 ¶ 81). Petitioner further contends that, “in order to establish sessions with proxies 19 and 21, proxy 17 must store a list of IP addresses associated with proxies 19 and 21.” *Id.* (citing Ex. 1002

¶ 103; Ex. 1003, 2:30–32; Pet. 21–27). More particularly, Petitioner asserts that,

[a] POSITA would understand that the session setup and maintenance, as well as subsequent routing of URLs through the proxy chains to web servers, necessarily requires, or at a minimum, renders obvious, proxy 17 storing a list of IP addresses for proxies 19 and 21 and client computer 11. . . . A POSITA would understand that devices on the Internet are addressed by IP address. . . . Thus, in order for proxy 17 to establish and maintain sessions with proxies 19 and 21, proxy 17 would have to store the IP address corresponding to the domain name (e.g., “french.com,” “fast.com”) the user enters for proxies 19 and 21. . . .

Further, a POSITA would understand that proxy 17 must also subsequently store those IP addresses so that “[a]fter the establishment of proxy sessions the client can surf the web through the established chain of proxy servers,” which necessarily requires storing for re-use the IP addresses of proxies 19 and 21 to be used for routing over the established proxy chain.

Pet. 25–26 (citing Ex. 1002 ¶¶ 82–83; Ex. 1003, 2:30–32, 4:43–54).

Petitioner contends that client computer 11 meets the construction of “first client device” because it is a device that communicates over the Internet and is operating in the role of a client by establishing a connection with proxy 17 to make requests. See Pet. 27–28 (citing Ex. 1002 ¶ 100; Ex. 1003, 1:43–45, 2:4–7, 2:30–32, 2:54–58, 4:29–31; Pet. 17–19).

Petitioner further asserts that proxy server 17 meets the construction of “first server” because it is a device that is operating in the role of a server by accepting a connection from client computer 11 to service requests (URLs) by sending content from web server in response and because it is not the same physical device as client computer 11. See Pet. 28 (citing Ex. 1002 ¶ 101; Ex. 1003, 5:3–24; Pet. 17–19).

Patent Owner contends that Petitioner fails to establish that proxy server 17 stores a list of IP addresses. *See* PO Resp. 37–38. According to Patent Owner, “[u]pon reviewing Kocherlakota, a POSA would have understood that information about the proxies would be stored at client computer 11, not proxy server 17.” *Id.* at 36 (citing Ex. 2041 ¶ 224); *see also* PO Sur-reply 15 (similar argument). In support of its argument, Patent Owner directs attention to Kocherlakota’s description of the client visiting each proxy directly and establishing any necessary relationship before use of the multiple proxies, and disclosure that it is likely that each proxy server will have session information in the nature of a cookie stored in the client computer. *See* PO Resp. 36–37 (citing Ex. 1003, 3:12–20). Patent Owner further contends that “[a] POSA would have understood that the applet information and relevant session information is sent from client computer 11 to proxy server 17.” *Id.* at 37 (citing Ex. 2041 ¶ 225); *see id.* at 37–38 (citing Ex. 1003 3:21–24, 3:37–48, 3:61–65, 4:1–8, 4:18–21); *see also* PO Sur-reply 15 (similar argument).

According to Patent Owner “[a]ll relevant information is stored in and sent from client computer 11 to proxy server 17 in order to establish the sessions and form the proxy chain.” PO Resp. 38 (citing Ex. 2041 ¶ 226); *see also* PO Sur-reply 15 (similar argument). Patent Owner asserts that “a POSA would have understood that when client computer 11 establishes a session with the proxy servers, each server will generate a cookie and store that cookie on the client computer.” PO Resp. 38 (citing Ex. 1003, 1:55–57; Ex. 2041 ¶ 226); *see also* PO Sur-reply 15 (similar argument). According to Patent Owner, “[o]nce the sessions are established, the sessions are maintained for a particular communication.” PO Resp. 38 (citing Ex. 1003, 1:55–57, Fig. 5 (step 125); Ex. 2041 ¶ 228). Patent Owner asserts that

“[t]here is nothing in Kocherlakota to suggest that proxy server 17 must also subsequently store those IP addresses for re-use.” *Id.* According to Patent Owner, “[i]nstead, the client would send new information to proxy server 17 for a new proxy chain.” *Id.* (citing Ex. 2041 ¶ 228). According to Patent Owner, “it is clear that client computer 11 stores information about the proxy servers, not proxy server 17.” *Id.* (citing Ex. 2041 ¶ 229).

In Reply, Petitioner asserts that, although “Kocherlakota describes that session information can be stored in the client computer when the client and a proxy establish a relationship,” “storing information in the client computer does not preclude that same information to be stored in a different computer (e.g., proxy server 17).” Pet. Reply 13 (citing Ex. 1003, 3:10–20). Petitioner points out that “Kocherlakota explains that establishing a session with proxy server 17 ‘causes the applet to access the session information (cookie) associated with each named proxy server and **returns** the cookies and **all entered information to the first proxy** [17] in step 107 (FIG. 3).” *Id.* (citing Ex. 1003, 3:61–4:2). According to Petitioner “[n]othing in P[atent] O[wner]’s arguments rebut the fact that proxy 17 would store the IP addresses of the proxies in the established chain so that ‘[a]fter the establishment of proxy sessions the client can surf the web through the established chain of proxy servers,’ as explained in the Petition.” *Id.* at 14 (citing Pet. 25–27; Ex. 1002 ¶¶ 83–84).

We do not agree with Patent Owner’s arguments. Patent Owner’s arguments focus on Kocherlakota’s disclosure of storing session information and permission information at client computer 11, but do not address Petitioner’s assertions that in Kocherlakota session setup and maintenance, and subsequent routing of URLs through the proxy chains to web servers following session setup, necessarily requires or at least renders obvious

Kocherlakota's proxy 18 storing a list of IP addresses for proxies 19, and 21, and client computer 11. See Pet. 25–26 (citing Ex. 1002 ¶¶ 82–84; Ex. 1003, 2:30–32, 3:21–22, 4:43–54; Ex. 1015, 17; Ex. 1016, 57).

Petitioner's arguments are supported by Dr. Olivier's testimony that: (1) "[i]f these [IP] addresses were not stored, then proxy 17 would have no way of creating message[s] to send to the intended receivers over the Internet" (Ex. 1002 ¶ 82); (2) "in order for proxy 17 to establish and maintain sessions with proxies 19 and 21, proxy 17 would . . . store the IP address corresponding to the domain name of the other proxy servers (e.g., 'french.com', 'fast.com') . . . , otherwise proxy 17 could not establish a session with these proxies over the Internet" (Ex. 1002 ¶ 83); and (3) "to establish and maintain sessions with client computer 11 over the Internet, proxy 17 must store the IP address of client computer 11, which would be received as the 'sending address' when client computer 11 contacts proxy 17" (Ex. 1002 ¶ 83). Petitioner's arguments are further supported by Kocherlakota's disclosures that: (1) client 11 sends the identities of further proxies and permission data to first proxy 17 which parses the message and begins to establish sessions with additional proxies (e.g., proxies 19, 21); (2) following session establishment with additional proxies, first proxy 17 signifies to client 11 that the proxy chain is complete; and (3) after the proxy chain is complete, client 11 may access web server 15 via the chain of proxies. See Ex. 1003, 2:25–32, 4:43–54, Fig. 6.

In addition, we find misplaced Patent Owner's argument that in Kocherlakota "there is no DNS resolution performed by proxy server 17 to establish the proxy chain as alleged by Petitioner." PO Resp. 38 (citing Ex. 2041 ¶ 226); *see also* PO Sur-reply 16 (similar argument). Contrary to Patent Owner's argument, Petitioner does not assert that proxy server 17

performs DNS resolution. *See* Pet. 25–26. Instead, Petitioner notes that using DNS resolution processes to obtain an IP address corresponding to a URL were well-known. *See* Pet. 26 n.11 (citing Ex. 1002 ¶ 84; Ex. 1001, 13:15–18; Ex. 1005, 45, 94–95).

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of the preamble of claim 1 is disclosed, taught, or would have been obvious based on the teachings of Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses, teaches, or renders obvious the subject matter of the preamble recitation of claim 1. *See* Pet. 25–28.

b. 1[a] the method by the first server comprising: storing, operating, or using a server operating system;

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: storing, operating, or using a server operating system.” *See* Pet. 29 (citing Ex. 1002 ¶¶ 104–106). Petitioner asserts that a person of ordinary skill in the art “would understand that computers, such as proxy 17, use an operating system and it would be, at a minimum, obvious to use a server operating system to ‘provide services’ to clients.” Pet. 29 (citing Ex. 1002 ¶ 105); *see* Pet. Reply 15 (similar argument (citing Ex. 1002 ¶¶ 104–106)).

Patent Owner asserts that Petitioner’s expert admits that Kocherlakota is silent on what operating system is used by Kocherlakota’s proxies. *See* PO Resp. 39 (citing Ex. 2013, 72:5–9). According to Patent Owner, “Petitioner’s expert testified that the operating system used by Kocherlakota’s proxies is immaterial to the teachings of Kocherlakota.” *Id.*

(citing Ex. 2013, 73:4–9). Patent Owner contends that Petitioner fails to meet its burden. *See id.*

In the Reply, Petitioner contends that Patent Owner does not dispute that “computers, such as proxy 17, use an operating system.” Pet. Reply 14 (citing Ex. 1002 ¶ 105; Ex. 1005, 71; Ex. 1016, 14). Petitioner asserts that Patent Owner “takes issue with Dr. Olivier’s testimony that the specific operating system (e.g., UNIX, LINUX, Microsoft Windows, etc.) is immaterial to Kocherlakota’s operation.” *Id.* (citing PO Resp. 39). Petitioner asserts that the claims do not require a specific operating system, and that the use of any known operating system would meet the claim limitation. *See id.* at 14–15 (citing Ex. 1002_¶¶ 61, 105–106; Ex. 1029, 24:2–7).

In the Sur-reply, Patent Owner contends that the claims require a server operating system, and Petitioner does not distinguish a server operating system from a client operating system. *See* PO Sur-reply 16 (citing PO Sur-reply 13–14). According to Patent Owner, “Petitioner fails to establish, or even argue, that Kocherlakota’s proxy 17 is server hardware under P[atent]O[wner]’s constructions.” *Id.*

We do not agree with Patent Owner’s arguments. As explained by Petitioner, claim 1 does not recite or require a specific operating system for the server operating system. In addition, as explained above in Section II.A.3., we decline to adopt Patent Owner’s proposed construction for “server operating system” that runs on server hardware and is distinct from a client operating system.

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of this limitation is disclosed taught, or would have been obvious based on the teachings of

Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses, teaches, or renders obvious the subject matter of this limitation of claim 1. *See* Pet. 29.

*c. 1[b] the method by the first server comprising: . . .
receiving, from the first client device, the first content identifier;*

Petitioner contends that Kocherlakota discloses or renders obvious “receiving, from the first client device, the first content identifier.” *See* Pet. 30–31 (citing Ex. 1002 ¶¶ 106–108). According to Petitioner, “[a]s shown in FIG. 6, proxy 17 (the claimed ‘first server’) receives from client computer 11 (the claimed ‘first client device’) a URL (e.g., www.uspto.gov or www.lucent.com) as the claimed ‘first content identifier.’” Pet. 30 (reproducing Ex. 1003, Fig. 6 (with annotations); quoting Ex. 1003, 2:4–7; citing Ex. 1002 ¶¶ 107–108; Ex. 1003, 4:52–54).

Patent Owner does not address Petitioner’s showing for this limitation of claim 1. *See* PO Resp. 35–41. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches this limitation of claim 1. *See* Pet. 30–31.

*d. 1[c] the method by the first server comprising: . . . selecting,
an IP address from the list according to a criterion;*

Petitioner asserts that Kocherlakota discloses or renders obvious “selecting, an IP address from the list according to a criterion” (selecting limitation). *See* Pet. 31 (citing Ex. 1002 ¶ 110). According to Petitioner, “proxy 17 (the claimed ‘first server’) selects the IP address of either proxy 19 or 21 from the list of those IP addresses to route the URL through

the proxy chain.” *Id.* (citing Ex. 1002 ¶ 103; Ex. 1003, 5:10–23). Petitioner contends that the selection is according to a criterion because the selection of the URL is based on analysis of the URL. *See id.* (citing Ex. 1002 ¶¶ 112–113). Petitioner asserts that proxy 17 performs each of the selecting steps by applying the criteria shown in Figure 7. *See id.* As an example, Petitioner explains that when proxy 17 receives a URL not matching the criteria in either text window 247 or 253 (e.g., www.uspto.gov), proxy 17 will not “skip” or “jump to” any server in the proxy chain because the URL does not match the criteria and will select the IP address of the next proxy in the chain so that the request passes via the chained proxies 17, 19, and 21. *See* Pet. 31–32 (citing Ex. 1002 ¶ 112; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7). According to Petitioner, “[p]roxy 17 will thus select the IP address of proxy 19 as the address used to forward the URL.” Pet. 32 (citing Ex. 1002 ¶ 112). Petitioner further explains that when proxy 17 receives a URL matching the criteria in text window 247 (e.g., www.lucent.com), but not matching the criteria of text window 253, proxy 17 will “skip” the function of proxy 17, but will not “jump” over any proxy server in the proxy chain because the URL does not match the “jump” criteria. *See id.* (citing Ex. 1002 ¶ 113; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7). According to Petitioner, proxy 17 “will therefore select the IP address of proxy 19 so that the request passes ‘via the chained proxies 17, 19, and 21.’” *Id.* (citing Ex. 1002 ¶ 113; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7).

Patent Owner contends that Kocherlakota does not teach this limitation because proxy server 17 does not perform any “selecting” of proxy servers 19/21. *See* PO Resp. 39 (citing Ex. 2041 ¶ 231); PO Sur-reply 17. According to Patent Owner, “[p]roxy server 17 is not choosing proxy server 19 in favor of proxy server 21. . . . There is only one option

and as such, there is no choice.” PO Resp. 39 (citing Ex. 2041 ¶ 231; PO Resp. 7–10); *see* PO Sur-reply 17 (citing Ex. 2013, 50:6–12). Patent Owner asserts that proxy server 17 does not select a proxy server, but merely applies an applet where the selection has been pre-defined—proxy server 17 does not make a choice as there is only one pre-defined option. *See id.* at 40–41 (citing Ex. 2041 ¶¶ 233–234, 237–244, 246–248); *see also* PO Sur-reply 17 (similar argument). According to Patent Owner, “a POSA would have understood that the selection of which proxies and which features of the proxies are to be used for a particular URL is NOT performed by proxy server 17. . . . Rather, the user of the client computer 11 makes the selection in the applet.” PO Resp. 41 (citing Ex. 2041 ¶ 249); *see* PO Sur-reply 17 (similar argument). Patent Owner further asserts that “there is no disclosure in Kocherlakota regarding any intelligent selection by proxy server 17.” PO Resp. 41 (citing Ex. 2041 ¶ 249); *see* PO Sur-reply 17.

In the Reply, Petitioner contends that Patent Owner’s arguments are incorrect because that Kocherlakota only discloses defining the ***criteria*** for performing selection in advance, but that those criteria require a specific URL as an input. *See* Pet. Reply 17 (citing Ex. 1002 ¶ 113; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7). Petitioner also asserts that the claim language does not preclude selecting based on predefined logic. *See id.* (citing Dec. on Inst. 26; Ex. 1028, 36). According to Patent Owner, “[t]o operate as Kocherlakota describes, proxy 17 must analyze the URL, apply any routing rules, and select an IP address to route the URL from multiple potential (*i.e.*, stored) IP addresses, such as proxies 19 and 21.” *Id.* (citing Ex. 1002 ¶ 81).

We do not agree with Patent Owner’s arguments. As explained above in Section II.A.2., we do not adopt Patent Owner’s proposed construction for “selecting an IP address.” Patent Owner’s arguments also are not

commensurate in scope with the limitations of claim 1 because they are premised on a requirement that the selection of the IP address cannot be predefined based on information previously entered into an applet. The limitations of claim 1 do not preclude the first server from making a selection on the basis of a predefined correlation of a specific IP address corresponding to a specific criterion. Similarly, the scope of claim 1 does not preclude the first server from using an applet or other software for assisting the first server in making a selection of an IP address from the list. Patent Owner's arguments are also premised on a requirement of "intelligent decision-making" in the selection of an IP address from the list, which is not recited or required by claim 1. Claim 1 merely requires "by the first server . . . selecting, an IP address from the list according to a criterion." Ex. 1001, 19:20–26.

Having considered both parties' arguments and the cited supporting evidence, we are persuaded that the subject matter of this limitation is disclosed or taught by Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches this limitation of claim 1. See Pet. 31–32.

e. 1[d] the method by the first server comprising: . . . sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier;

Petitioner contends that Kocherlakota discloses or renders obvious "sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier." See Pet. 32–33 (citing Ex. 1002 ¶ 115). According to Petitioner, "upon receiving the URL (the claimed 'first content identifier'), proxy 17 forwards the URL through the proxy chain—using the selected IP address of either proxy 19 or 21 from the

list of those IP addresses.” Pet. 32 (citing Ex. 1002 ¶ 116; Pet. 19–20). With reference to Figure 6, Petitioner further contends that “[p]roxy 17 forwards the URL to proxy 19 (in response to receiving the URL) in order for the URL to be further forwarded by proxy 19 to proxy 21 and proxy 21 to the web server hosting the first URL (the claimed ‘first web server’).” Pet. 33 (reproducing Ex. 1003, Fig. 6 (with annotations); citing Ex. 1002 ¶ 116; Ex. 1003, 2:30–32, 4:52–54). Petitioner asserts that a person of ordinary skill in the art “would understand that when proxy 17 sends the URL to the first web server through to proxy 19, as an intermediary, proxy 17 uses the IP address associated with proxy 19 (the claimed ‘selected IP address’) as the destination IP address.” *Id.* (citing Ex. 1002 ¶ 117).

Patent Owner argues that Kocherlakota does not disclose or render obvious a “first server as recited in the preamble of claim 1, limitation 1[f] or limitation 1[e] under Petitioner’s purely role-based constructions. See PO Resp. 35. According to Patent Owner, “[f]or the analysis of limitation 1d, Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection between proxy server 17 and proxy server 19/21.” *Id.* at 36 (citing Pet. 32; Ex. 2041 ¶¶ 215–218). Patent Owner asserts that “[w]hen proxy server 17 sends a request, proxy server 17 is operating in the role of a client, not a server.” *Id.* (citing Ex. 2041 ¶ 217). According to Patent Owner, “under the purely role-based constructions, proxy server 17 cannot be a server during performance of this method step.” *Id.*

We do not agree with Patent Owner’s arguments because the arguments improperly add an “at that point in time” qualifier to the limitations of claim 1, similar to the definitions in RFC 2616. See PO Resp. 34. The plain language of claim 1 does not recite or require the first

server to operate in a role of a server for each point in time recited in the limitations of claim 1. The plain language of claim 1 also does not preclude the first server from operating in a role of a client for some of the limitations of claim 1. As explained above in Section II.A.2., we construe “first server” as “server that is not **the** client device or the web server,” and the district court clarified 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. 1013, 10 (emphasis omitted).

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that that Kocherlakota discloses or teaches this limitation of claim 1. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches this limitation of claim 1. *See* Pet. 32–33.

f. 1[e] the method by the first server comprising: . . . receiving, in response to the sending of the first content identifier, the first content from the web server; and 1[f] sending the received first content, or a part thereof, to the first client device.

Petitioner contends that Kocherlakota discloses or renders obvious “receiving, in response to the sending of the first content identifier, the first content from the web server; and sending the received first content, or a part thereof, to the first client device,” as recited in claim 1. *See* Pet. 34 (citing Ex. 1002 ¶ 118), 35 (citing Ex. 1002 ¶ 122). Petitioner asserts that proxy 17 forwards the first content identifier (i.e., URL) along the proxy chain to be forwarded to the web server corresponding to the first content identifier. *See* Pet. 34. According to Petitioner, a person of ordinary skill in the art “would understand that the function of a proxy in the proxy chain is both to send

URLs to web servers, as well as receive responses and return them.” *Id.* (citing Ex. 1002 ¶ 119). Petitioner asserts that Kocherlakota describes client computer 11 obtaining access to web server 15 via three web proxies 17, 19 and 21, and proxy 19 providing translations of identified files from the web server. *See id.* (citing Ex. 1002 ¶ 119; Ex. 1003, 1:12–17, 1:28–31, 3:9–11, 4:29–35). Petitioner also contends that Kocherlakota describes web server 15 as a data file provider and that after the establishment of the proxy sessions, the client can surf the web through the established chain of proxy servers. *See id.* (quoting Ex. 1003, 2:58–61; citing Ex. 1002 ¶ 120; Ex. 1003, 2:30–32). Petitioner further asserts that proxy 17 receives the web page corresponding to the first content identifier in response to sending of the first URL (i.e., first content identifier) on the basis that web server returns the web page corresponding to the first URL to proxy 21, proxy 21 forwards the web page to proxy 19, and proxy 19 forwards the web page to proxy 17. *See Pet. 35* (citing Ex. 1002 ¶ 121; Ex. 1003, 2:30–32, 2:58–61, 4:29–35). Petitioner further contends that “[i]n accordance with its function as a proxy and providing client computer 11 ‘access to web server 15,’ proxy 17 sends the received first content to client computer 11 (the claimed ‘first client device’).” *Id.* (citing Ex. 1002 ¶ 122).

Patent Owner argues that Kocherlakota does not disclose a “first server” as recited in the limitation 1[e] under Petitioner’s purely role-based constructions. *See PO Resp. 35*. According to Patent Owner, during limitation 1[e], “proxy server 17 is operating in the role of a server, not a client. Therefore, proxy server 17 would meet both of Petitioner’s constructions for ‘client device’ and ‘server.’” *Id.* Patent Owner contends that “[w]hen proxy server 17 receives a response, proxy server 17 is operating in the role of a client, not a server.” *Id.* at 36 (citing Ex. 2041

¶¶ 219–222). According to Patent Owner, “Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular connection between proxy server 17 and proxy server 19/21.” *Id.* at 36 (citing Pet. 32; Ex. 2041 ¶¶ 215–222).

For the same reasons explained immediately above addressing limitation 1[d], we do not agree with Patent Owner’s arguments.

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that that Kocherlakota discloses or teaches this limitation of claim 1. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches this limitation of claim 1. *See* Pet. 34–35.

g. Summary

For all of the foregoing reasons, based on the entire record, Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches the subject matter of claim 1.

3. Analysis of Dependent Claims 2–4, 10, 12, 15–17, and 21–25

Claims 2–4, 10, 12, 15–17, and 21–25 directly or indirectly depend from claim 1. *See* Ex. 1001, 19:34–21:5. We have reviewed Petitioner’s contentions and cited supporting evidence addressing how Kocherlakota discloses or suggests each of the limitations recited in claims 2–4, 10, 12, 15–17, and 21–25. *See* Pet. 36–47 (citations omitted).

Patent Owner contends that Petitioner provides no analysis of these components under Patent Owner’s proposed constructions for client device and first server. *See* PO Resp. 43 (citing Ex. 2041 ¶ 266). Patent Owner argues that a person of ordinary skill in the art “would have understood that proxies 17, 19, [and] 21 are server hardware components” and “[t]here is no

teaching in Kocherlakota that would suggest proxy servers 17, 19, and 21 are ‘client devices’ under Patent Owner’s constructions.” PO Resp. 44 (citing Ex. 2041 ¶¶ 266–267). In support, Patent Owner directs attention to Exhibit 1023 for stating that HTTP proxy servers are intermediary servers that act as platforms for HTTP services and controls. *See id.* (citing Ex. 1023, 16). According to Patent Owner, “Petitioner’s expert agreed there is no disclosure in Kocherlakota that suggests implementing proxies 17, 19, or 21 on something other than a proxy server.” *Id.* (citing Ex. 2006, 86:7–11). We do not agree with Patent Owner’s arguments because, as explained above in Section II.A.2., we do not adopt Patent Owner’s proposed claim construction for “first server” as “server that is not a client device.”

Patent Owner also argues the Kocherlakota does not teach or disclose the limitations of the dependent claims because proxy servers 17, 19, 21 are operating in different roles at different points in time. *See* PO Resp. 42 (citing Ex. 2006, 82:23–84:1). Patent Owner asserts that Petitioner’s expert confirmed that proxy servers 17, 19, 21 perform both client and server roles. *See id.* (citing Ex. 2013, 73:16–74:14). Patent Owner contends that Petitioner does not consistently analyze the proxy servers of Kocherlakota. *See id.* (citing Ex. 2041 ¶ 258). According to Patent Owner, “[i]f Petitioner were to consistently analyze the proxy servers of Kocherlakota, then they would have to all be servers, or they would have to all be client devices.” *Id.* (citing Ex. 2041 ¶¶ 259–262). Patent Owner contends that Petitioner’s expert cross examination testimony contradicts the district court’s claim construction because the district court did not use the same construction for both “client” and “first server,” and also contradicts the intrinsic record of the ’826 Patent. *See id.* at 43 (citing Ex. 2006, 84:14–85:1).

Patent Owner further asserts that Petitioner ignores the role being performed at a particular point in time or a particular connection. *See* PO Resp. 43 (citing Ex. 2041 ¶ 264). Patent Owner contends that, for example, during claim 4, proxy server 19 is operating in the role of a server, not a client, and therefore does not meet Petitioner’s construction for client device. *See id.* According to Patent Owner, “Petitioner fails to establish that proxy servers 19, 21 are client devices, as opposed to servers.” *Id.* (citing Ex. 2041 ¶ 265).

For similar same reasons as those explained above addressing limitations 1[d] and 1[e], namely that the plain language of the dependent claim 4 does not recite or require the claimed second client device to operate in a role of a client for each point in time recited in the limitations of the dependent claims, we do not agree with Patent Owner’s arguments. The plain language of claim 1 and the dependent claims also does not preclude the claimed second client device from operating in a role of a server for some of the limitations of the dependent claims.

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of claims 2–4, 10, 12, 15–17, and 21–25 is disclosed or taught by Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches the limitations of dependent claims 2–4, 10, 12, 15–17, and 21–25. *See* Pet. 36–42, 45–47.

4. Analysis of Dependent Claims 5

Claim 5 depends from claim 2 and further recites “by the first server: communicating with the second client device; and storing an IP address of the second client device in the list in response to the communicating.”

Ex. 1001, 19:47–51. Petitioner asserts that Kocherlakota discloses or renders obvious this limitation, in particular that proxy 17 (i.e., first server) establishes and maintains sessions (i.e., communicates) with each of proxies 19 and 21 (i.e., second client device). *See* Pet. 38 (citing Ex. 1003 4:43–54; Ex. 1002 ¶ 129). According to Petitioner, “a POSITA would understand that the session setup and maintenance, as well as subsequent routing of URLs through the proxy chains to web servers, necessarily requires, or at a minimum[,] renders obvious, proxy 17 storing a list of IP addresses of proxies 19 and 21.” *Id.* at 39 (citing Ex. 1002 ¶ 130; Pet. 21–26). Petitioner further explains, “[w]here, for example, proxy 17 stores the IP addresses of proxies 19 and 21 to track an ongoing session, that storing is in response to the communicating with proxies 19 and 21 during session setup.” *Id.* (citing Ex. 1002 ¶ 130).

Patent Owner contends that Petitioner fails to establish that proxy server 17 stores the IP address of proxy server 19 or proxy server 21 for the same reasons as those addressing the preamble of claim 1. *See* PO Resp. 44 (citing PO Resp. 36–39; Ex. 2041 ¶ 270). For the same reasons as those explained above in Section II.D.2.a., addressing the preamble of claim 1, we do not agree with Patent Owner’s arguments.

Patent Owner further contends that Petitioner fails to establish that proxy server 17 stores the IP address of proxy servers 19 and 21 in response to the communicating as required by claim 5. *See* PO Resp. 44 (citing Ex. 2041 ¶ 271). According to Patent Owner,

Petitioner previously argued that proxy server 17 must store a list of IP addresses associated with proxy servers 19/21 in order to establish sessions with proxy servers 19/21. . . . Therefore, it is inconsistent to argue that proxy server 17 would store the IP address of proxy server 19/21 **after** establishing a session.

Id. at 44–45 (citing Ex. 2041 ¶ 271).

We do not agree with Patent Owner’s argument because it does not address Petitioner’s assertions that in Kocherlakota session setup and maintenance, as well as subsequent routing of URLs through the proxy chains to web servers following session setup, necessarily requires or at least renders obvious Kocherlakota’s proxy 18 storing a list of IP addresses for proxies 19, and 21, and client computer 11. *See* Pet. 25–26 (citing Ex. 1002 ¶¶ 82–84; Ex. 1003, 2:30–32, 3:21–22, 4:43–54; Ex. 1015, 17; Ex. 1016, 57).

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of claim 5 is disclosed, taught, or would have been obvious based on the teachings of Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses, teaches, or renders obvious the subject matter of claim 5. *See* Pet. 25–26, 38–39.

5. Analysis of Dependent Claim 18

Claim 18 depends from claim 1 and further recites “selecting, by the first server, multiple client devices from the plurality of client devices by selecting the IP addresses of the multiple client devices from the list; and sending, by the first server, the selected IP addresses in response to the selecting.” Ex. 1001, 20:38–48. Petitioner asserts that Kocherlakota discloses or renders obvious this limitation, in particular that proxy 17 (i.e., first server) is utilized with other proxies 19 and 21 (i.e., second client device) that are addressable over the internet using the IP address selected from the list of IP addresses stored in proxy 17. *See* Pet. 43 (citing Ex. 1002 ¶ 143). Petitioner largely relies on its analysis of limitations 1[c] and 1[d] to

address the limitations of claim 18. *See* Pet. 43–44 (citing Ex. 1002 ¶¶ 47, 117, 143–144, Pet. 21–26; Ex. 1015, 17; Ex. 1016, 57).

Patent Owner contends that proxy server 17 does not select multiple IP addresses from the list because in the, default, skip, or jump pathways, proxy server 17 selects either proxy server 19 or proxy server 21, but not both. *See* PO Resp. 45 (citing Ex. 1002 ¶ 273; Ex. 2013, 76:5–16).

In the Reply, Petitioner asserts that Patent Owner “appears to be arguing that Kocherlakota does not disclose selecting multiple IP addresses *simultaneously*.” Pet. Reply 18. Patent Owner asserts that Patent Owner concedes that proxy server 17 selects proxy server 19 in the default and skip pathways and selects proxy server 21 in the jump pathway, and therefore, selects the IP address of proxy server 19 and proxy server 21 which is multiple IP addresses. *See id.* (citing PO Resp. 45).

In the Sur-reply, Patent Owner contends that Petitioner relies on a new theory in the Reply because the Reply relies on processing two separate URLs and the Petition relied on a single URL. *See* PO Sur-reply 19 (citing Pet. 43–44; Pet. Reply 18).

We do not agree with Patent Owner’s argument because it not commensurate in scope with the claim limitations. We agree with Petitioner that Patent Owner’s argument is premised incorrectly on selecting the IP addresses of the multiple client devices from the list simultaneously. Claim 18 does not recite or require selecting IP addresses of the multiple client devices from the list at the same time or simultaneously. *See* Ex. 1001, 20:38–48. We also do not agree that Petitioner presents a new theory in the Reply because Patent Owner does not explain sufficiently how the Reply relies on processing two separate URLs.

Having considered both parties' arguments and the cited supporting evidence, we are persuaded that the subject matter of claim 18 is disclosed, taught, or suggested by Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses, teaches, or suggests the limitations of dependent claim 18. *See* Pet. 43–44.

6. Analysis of Dependent Claim 19

Claim 19 depends from claim 1 and further recites “sending of the selected IP addresses to the first client device.” Ex. 1001, 20:49–50. Petitioner asserts that Kocherlakota discloses or renders obvious this limitation, in particular that proxy 17 (i.e., first server) signifies via a message to client 11 that the session is complete. *See* Pet. 44 (citing Ex. 1003, 4:49–53. According to Petitioner,

It would have been obvious for proxy 17 (the claimed “first server”) to send the IP address of the proxies in the chain to client 11 (the claimed “first client device”) in this message 232. . . . Sending these IP address[es] would have been advantageous so that the first client could verify which chain was set up and that the chain was set up correctly. . . . Such a modification would have represented a straightforward modification and a POSITA would have implemented with a reasonable expectation of success.

Pet. 44–45 (citing Ex. 1002 ¶ 145).

Patent Owner contends that Petitioner is relying on the establishment of the proxy chain, which occurs before any request is received by proxy server 17 and before, according to Petitioner, any alleged selection has been performed by proxy server 17. *See* PO Resp. 46 (citing Ex. 2041 ¶ 275). According to Patent Owner, “proxy server 17 could not send the **selected** IP

address to client computer 11 before, . . . any alleged selection has been performed based on analysis of the URL.” *Id.* (citing Ex. 2041 ¶ 275).

In the Reply, Petitioner asserts that claim 19 does not require the IP address to be sent after it is selected. *See* Pet. Reply 19. Petitioner asserts that there is no temporal limitation to the claim. *See id.* Patent Owner asserts that sending occurs after the selecting. *See* PO Sur-reply 4–5, 19.

Putting aside the parties’ dispute directed to whether the sending must occur after selection, we do not agree with Patent Owner’s argument. Contrary to Patent Owner’s argument, Petitioner relies on Kocherlakota’s disclosure of first proxy 17 sending a message to client 11 following the establishment of sessions between first proxy 17 and additional proxies 19 and/or 21, which involves the selection of an IP address of additional proxies 19 and/or 21. *See* Ex. 1003, 4:36–53, Fig. 6.

Patent Owner also argues that “Petitioner fails to show that a POSA would have been motivated to modify proxy server 17 to send the **selected** IP address of either proxy server 19 or proxy server 21 to client computer 11 after analysis of the URL.” PO Resp. 46 (citing Ex. 2041 ¶ 276). Petitioner asserts that Patent Owner does not appear to dispute the motivation, which Patent Owner, in turn, disputes. *See* Pet. Reply 18–19 (citing PO Resp. 46); PO Sur-reply 19.

We do not agree with Patent Owner’s conclusory argument because it does not meaningfully address Petitioner’s contention that “[s]ending these IP address[es] [of the proxies in the chain] would have been advantageous so that the first client could verify which chain was set up and that the chain was set up correctly.” Pet. 45 (citing Ex. 1002 ¶ 145).

Patent Owner further contends that client computer 11 stores the information about the proxies. *See* PO Resp. 46 (citing Ex. 2041 ¶ 277; PO

Resp. 36). According to Patent Owner, “[p]roxy server 17 does not select which proxies are to form the proxy chain or which features of which proxies are to be used.” *Id.* at 46–47 (citing Ex. 2041 ¶ 277).

We do not agree with Patent Owner’s arguments for the same reasons as those explained above in Sections II.D.2.a. and II.D.2.d, addressing storing a list IP addresses in the first client as recited in the preamble of claim 1 and the first client selecting an IP address from the list, as recited in limitation 1[d].

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of claim 19 is disclosed, taught, or would have been obvious based on the teachings of Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses, teaches, or suggests the limitations of claim 19. *See* Pet. 43–45.

7. Objective Indicia of Nonobviousness

We next consider Patent Owner’s evidence of objective indicia of nonobviousness before reaching our conclusion regarding the obviousness as to the subject matter of claims 1–5, 10, 12, 15–19 and 21–25. *See WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1328 (Fed. Cir. 2016). Patent Owner contends that it “offers a data center proxy service that practices at least the challenged claims” which “advertise enterprise-grade scaling,” “offer over 770,000+ Datacenter IPs in 98 countries,” “have a 99.99% success rate and are rated as #1,” and “generated revenue of \$22,136,000 in the year 2021.” PO Resp. 58(citing Ex. 2041 ¶ 343), 65 (citing Ex. 2039, 1–2, Ex. 2041 ¶¶ 349–351). Patent Owner further asserts “there is nexus between [its] data center proxy service and at least challenged claims 1, 10, 12, 15–

17, [and] 21–25.” PO Resp. 59 (citing Ex. 2041 ¶¶ 147–169). Petitioner disagrees and asserts that the Board’s findings from IPR2022-00687 should be left undisturbed, in particular, the findings that Patent Owner fails to show that the purported commercial success of its product is the direct result of the claimed invention’s unique characteristics, and Patent Owner’s evidence of commercial success is lacking. *See* Pet. Reply 23 (citing Ex. 1028, 53).

a. Legal Standards

Objective indicia of nonobviousness includes 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. 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).

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) (emphasis omitted)). In other words, a presumption of 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.*

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. Analysis of Nexus

Patent Owner asserts that its “data center proxy services advertise enterprise-grade scaling,” “offer over 770,000+ Datacenter IPS in 98 countries,” “have a 99.99% success rate and are rated as #1,” and “generated revenue of \$22,136,000 in the year of 2021.” PO Resp. 65 (citing Ex. 2039, 1–2, 5; Ex. 2041 ¶¶ 349–351). Patent Owner contends it “offers a data center proxy service that practices at least [the] challenged claims.” *Id.* at 58 (citing Ex. 2041 ¶ 343). In support of this contention, Patent Owner points to its network diagram and asserts that it shows the data center proxy service includes data center servers and a static residential server. *See id.* (reproducing Ex. 2045 (network diagram); citing Ex. 2041 ¶ 345). Patent Owner asserts that “the customer ↔ SuperProxy ↔ web server architecture corresponds to the first client device ↔ first server ↔ web server architecture of the claims of the ‘826 Patent.” *Id.* (citing Ex. 2041 ¶ 345).

According to Patent Owner, the network diagram shows: (1) “[c]ustomers of [Patent Owner]’s data center proxy service may request content stored on a web server identified by, for example, a URL;” (2) “The customer may use a client device to send a content request to the SuperProxy, which stores a group of IP addresses and selects an IP address to be used for the request;” (3) “The SuperProxy sends the request to the target web server via the data center server or static residential server hosting the selected IP address;” and (4) “The target web server receives the request and sends the requested content back to the customer’s client device via the SuperProxy.” PO Resp. 58–59 (citing Ex. 2041 ¶ 344). Patent Owner further asserts that “there is nexus between [Patent Owner]’s data center proxy service and at least challenged claims 1, 10, 12, 15–17, [and] 21–25 of the ‘826 Patent,” and directs attention to claim charts and

source code to support its contention. *Id.* at 59; *see id.* at 59–64 (providing charts for claims 1, 10, 12, 15–17, and 21–25; citing Ex. 2040; Ex. 2041 ¶¶ 147–169).

In Reply, Petitioner contends that Patent Owner “fails to do anything differently here [(compared to IPR2022-00687)] to justify a finding of nexus or commercial success.” Pet. Reply 23 (citing PO Resp. 58–65; Ex. 1026, 75–86; Ex. 2041 ¶¶ 343–351; Ex. 1030 ¶¶ 265–272); *see id.* at 22.

Patent Owner and Dr. Williams’s testimony do not direct us to a disclosure in the network diagram of a Superproxy storing IP addresses and selecting an IP address. *See* PO Resp. 58; Ex. 2041 ¶ 344. On a very basic level, the network diagram (Ex. 2045) consists of various labeled blocks, including at least one Superproxy, located between customers and the web, as well as various arrows between the labeled blocks, customers, and the web. *See* Ex. 2045; Ex. 2041 ¶ 344. At best, the network diagram discloses databases connected to a Superproxy, but provides no disclosure of the type of information that is stored in a database, and, therefore, no disclosure of the Superproxy selecting an IP address. *See* Ex. 2045; Ex. 2041 ¶ 344.

Upon reviewing Patent Owner’s claim charts and the source code cited therein, we find that the cited source code does not provide a sufficient underlying factual basis to support, for example, Patent Owner’s assertions that a Superproxy stores a list of IP addresses and selects an IP address from the list. *See* PO Resp. 59–63; Ex. 2041 ¶ 346. In the claim charts addressing limitation 1[c], Patent Owner directs attention to source code disclosures of a Tunnel object that calls a `choose_local_ip` function, a `setup_ip_pool` function that calls a `get_local_ips` function, a `run` function that calls the `setup_ip_pool` function and then calls a `check_source_ip_function`. *See* PO Resp. 60–62 (citing Ex. 2041 ¶ 346; Ex. 2040, 425–710, 755–774,

776–811, 813–826, 828–844, 1085–1231). Although the aforementioned functions are disclosed in the source code citations (*see* Ex. 2040, 425–710, 755–774, 776–811, 813–826, 828–844, 1085–1231), Patent Owner does not assert, nor direct us to source code disclosures to support, that a Superproxy executes the aforementioned cited source code functions. *See* PO Resp. 60–62. Patent Owner’s citation to its advertising (Ex. 2039) fares no better for providing a sufficient underlying factual basis to support Patent Owner’s contention that a Superproxy stores a list of IP addresses. *See* PO Resp. 59 (addressing preamble of claim 1).

In sum, because Dr. Williams’s testimony is not supported by a sufficient factual basis, we do not credit Dr. Williams’s testimony that Patent Owner’s data center proxy service practices the challenged claims and that there is a nexus between the data center proxy service and claims 1, 10, 12, 15–17, and 21–25. Accordingly, there is no presumption of nexus.

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.

Patent Owner asserts that

It is the novel use of a “first server” that stores a group of IP addresses and selects an IP address from the group as recited in, for example, claim 1 that provides an extremely scalable solution that solves the problems identified in the prior art in the background section of the specification.

PO Resp. 64 (citing Ex. 2041 ¶ 347). Patent Owner further contends that the novel use of the first server “also solves problems regarding blocking/spoofing by a web server.” *Id.* (citing Ex. 2041 ¶ 347); *see id.* at 64–65 (providing examples of a server selecting a proxy IP address based

on response time and hiding multiple requests from the same customer, citing Ex. 2041 ¶ 348). According to Patent Owner, (1) “[i]t is the ability to support the selection of proxy IP addresses that creates the value in these services” and (2) “[i]t is valuable for the first server to be able to select from different possible proxy IP addresses for different requests.” *Id.* at 64–65 (citing Ex. 2041 ¶¶ 347–348).

Dr. Williams’s cited supporting testimony is not supported by an underlying factual basis and, therefore, we give little weight to Dr. Williams’s testimony that certain characteristics that create or provide value. *See* PO Resp. 64–65; Ex. 2041 ¶¶ 347–348; *see* 37 C.F.R. § 42.65(a). Accordingly, Patent Owner fails to show that the purported commercial success of its product is the “direct result” of the claimed invention’s unique characteristics.

c. Commercial Success

In any event, even if Patent Owner established nexus, which we do not find, Patent Owner’s evidence of commercial success is lacking. For example, Patent Owner relies on the testimony of Dr. Williams to support its assertion of \$22,136,000 revenue in the year 2021. *See* PO Resp. 65 (citing Ex. 2041 ¶ 351). Dr. Williams does not provide an underlying factual basis for this testimony, and, therefore, it is entitled to little weight. *See* Ex. 2041 ¶ 351; 37 C.F.R. § 42.65(a). In addition, Patent Owner fails to explain or otherwise allege that its advertising of “enterprise-grade scaling,” “770,000+ Datacenter IPs” “99.99% success rate” and “#1” rating constitutes evidence of commercial success. *See* PO Resp. 65; Ex. 2039, 1–2, 5; Ex. 2041 ¶¶ 349–350.

d. Conclusion

For the reasons explained above, we conclude that Patent Owner’s evidence purportedly showing commercial success is insufficient because it does not show nexus with the claimed invention. Thus, the objective indicia of nonobviousness is insufficient to outweigh Petitioner’s evidence of obviousness of the subject matter of challenged claims 1, 10, 12, 15–17, and 21–25 on the basis of Kocherlakota. Accordingly, Petitioner has demonstrated by a preponderance of the evidence that the subject matter of claims 1–5, 10, 12, 15–19, and 21–25 would have been obvious over Kocherlakota.

8. Summary

After considering the parties’ arguments, the entire record, and weighing the objective indicia of nonobviousness, we determine that Petitioner’s showing of obviousness is strong and outweighs the minimally weighted evidence of commercial success. Accordingly, based on the entire record, Petitioner has established by a preponderance of the evidence that claims 1–5, 10, 12, 15–19, and 21–25 are unpatentable under 35 U.S.C. § 103 over Kocherlakota.

E. Challenge to Claims 6–9 over Kocherlakota and RFC 1122

1. Overview of RFC 1122 (Ex. 1006)

RFC 1122 is titled “Requirements for Internet Hosts – Communication Layers.” Ex. 1006, 1. RFC 1122 discusses specific issues with transmission control protocol (TCP), including TCP Keep-Alives. *See id.* at 101–102. “A ‘keep-alive’ mechanism periodically probes the other end of a connection when the connection is otherwise idle, even when there is no data to be sent.” *Id.* at 102. RFC 1122 discloses that the TCP

specification does not include the keep-alive mechanism due to some disadvantages, but some TCP implementations have included a keep-alive mechanism. *See id.* RFC 1122 further discloses that “[a] TCP keep-alive mechanism should only be invoked in server applications that might otherwise hang indefinitely and consume resources unnecessarily if a client crashes or aborts a connection during a network failure.” *Id.*

2. Analysis

Claim 6 depends from claim 1, and recites “sending, by the first server, a ‘keep alive’ message to the second client device; and waiting . . . for a response to the ‘keep alive’ message from the second client device.” Ex. 1001, 19:52–57. Claim 7 depends from claim 6, and recites “receiving, by the first server, the response to the ‘keep alive’ message from the second client device; and responsive to the receiving of the response, adding the IP address of the second client device to the list.” *Id.* at 19:58–62. Claim 8 depends from claim 6 and recites “responsive to not receiving, by the first server, a response to the ‘keep alive’ message from the second client device, removing the IP address of the second client device from the list.” *Id.* at 19:63–67. Claim 9 depends from claim 6 and recites “the sending of the ‘keep alive’ message comprises periodically sending by the first server the ‘keep alive’ message to the second client device.” *Id.* at 20:1–4.

Petitioner asserts that the subject matter of dependent claims 6–9 would have been obvious to a person of ordinary skill in the art based on the teachings of Kocherlakota and RFC 1122. *See* Pet. 47–53 (citing Ex. 1002 ¶¶ 152–162). As to claim 6, Petitioner asserts that, based on the teachings of Kocherlakota as modified by RFC 1122, “proxy 17 (the claimed ‘first server’) sends keep alive messages to proxies 19 and 21 (the claimed

‘second client devices’) and waits for response[s] from each.” Pet. 50 (citing Ex. 1002 ¶¶ 157–158). Regarding claim 7, Petitioner asserts that, based on the teachings of Kocherlakota as modified by RFC 1122, “[i]f the proxies 19 and/or 21 (the claimed ‘second client device’) are live, then proxy 17 will receive the acknowledgment (the claimed ‘response to the ‘keep alive’ message’) and determine the connection is available.” Pet. 51 (citing Ex. 1002 ¶ 159). As to claim 8, Petitioner asserts that “it would have been obvious to remove the IP address of a non-responsive client device from the list of IP addresses of device under active session.” Pet. 52–53 (citing Ex. 1002 ¶ 161); see Pet. 51–52 (citing Ex. 1002 ¶ 159). Regarding claim 9, Petitioner asserts that, based on the combined teachings of Kocherlakota and RFC 1122, proxy 17 periodically sends “keep alive” messages to proxies 19 and 21. See Pet. 49–50 (citing Ex. 1002 ¶ 155), 53 (citing Ex. 1002 ¶ 162).

Petitioner asserts that that it would have been obvious to a person of ordinary skill in the art “to use the TCP keep-alive functionality of RFC 1122 when maintaining [the] TCP sessions [] disclosed by Kocherlakota.” Pet. 48 (citing Ex. 1002 ¶ 152). According to Petitioner, a person of ordinary skill in the art “would have recognized the benefits of Kocherlakota’s proxy servers exchanging TCP keep-alives with each other.” *Id.* (citing Ex. 1002 ¶¶ 152–153). Petitioner asserts that TCP keep-alives help detect when a client crashes or aborts a connection during a network failure and prevents server applications from indefinite hanging and unnecessary resource consumption. See *id.* (quoting Ex. 1006, 102; citing Ex. 1002 ¶ 153). Petitioner asserts that, in Kocherlakota’s system, following the establishment of sessions between proxy 17 and the client computer 11, proxy 19 and/or proxy 21, one of client computer 11, proxy 19, or proxy 21

could crash. *See id.* (citing Ex. 1002 ¶ 153; Pet. 21–27, 47–48). According to Petitioner, “[w]ithout TCP keep-alives, client computer 11, proxy 19, or proxy 21 would unnecessarily expend resources keeping the TCP connection open.” Pet. 48–49 (citing Ex. 1002 ¶ 153). Petitioner further asserts that a person of ordinary skill in the art “would have known that TCP keep-alives could also prevent periods of inactivity between client devices from causing the TCP connection between them to terminate.” *Id.* at 49 (citing Ex. 1002 ¶ 153).

Petitioner further contends that a person of ordinary skill in the art would have known that TCP keep-alives could also prevent periods of inactivity between client devices from causing the TCP connection between them to terminate. *See* Pet. 49 (citing Ex. 1002 ¶ 153). Petitioner acknowledges that RFC 1122 identifies potential disadvantages of TCP keep-alives, but Petitioner asserts that a person of ordinary skill in the art “would have recognized that these disadvantages are outweighed” by the aforementioned benefits. *Id.* (citing Ex. 1002 ¶ 154; *Winner Int’l Royalty Co. v. Wang*, 202 F.3d 1340, 1349 & 1349 n.8 (Fed. Cir. 2000)).

In the Response, Patent Owner contends that “the HTTP Definitive Guide [(Ex. 1023)] states that ‘keep-alive connections should not be established with a proxy server that isn’t guaranteed to support the Connection header.’” PO Resp. 47 (citing Ex. 1023, 114). According to Patent Owner, “Petitioner’s expert admitted that he did not analyze this concept in forming his opinions.” *Id.* (citing Ex. 2013, 25:14–26:14). Patent Owner asserts that “[t]here is no disclosure in Kocherlakota that the proxy servers 17, 19, or 21 are guaranteed to support the Connection header.” *Id.* (citing Ex. 2041 ¶ 283). Patent Owner contends that Petition provides no motivation to modify Kocherlakota’s proxy servers to guarantee support of

connection header. *See id.* (citing Ex. 2041 ¶ 283). According to Patent Owner, “a POSA would not be motivated to use keep-alive connections with the proxies of Kocherlakota in view of this disclosure in the HTTP Definitive Guide.” *Id.* (citing Ex. 2041 ¶ 283).

In the Reply, Petitioner contends that “[t]here is no evidence that Kocherlakota’s servers 17, 19, or 21 would **not** support the Connection header or that a POSITA implementing the TCP keep-alive functionality of RFC 1122 would not be able to guarantee support of the connection header.” Pet. Reply 19. According to Petitioner, Patent Owner “and its expert do[] not even allege proxy servers 17, 19, or 21 would **not** support the Connection header.” *Id.* at 19–20 (citing PO Resp. 47–48). Petitioner asserts that Patent Owner’s “hypothetical scenario—where a proxy server is not guaranteed to support the connection header—is not applicable to the proposed modification.” *Id.* at 20.

We do not agree with Patent Owner’s arguments because they are incorrectly premised on a motivation to use keep-alive connections conditioned on proxies being guaranteed to support a Connection header. As explained above, Petitioner provides several rationales (e.g., prevent server applications from hanging indefinitely and consuming resources unnecessarily, preventing periods of inactivity from causing connection termination) why a person of ordinary skill in the art would have modified the teachings of Kocherlakota to include the use of keep-alive functions. *See* Pet. 48–49. Patent Owner’s arguments do not address the rationales presented by Petitioner. *See* PO Resp. 47. In any event, contrary to Patent Owner’s arguments, the HTTP Definitive Guide (Ex. 1023) acknowledges that it “is not always possible in practice” to establish keep-alive connections

with a proxy server that is guaranteed to support the Connection header.
Ex. 1023, 114.

Based on Petitioner’s citations to Kocherlakota, RFC 1122, and Dr. Olivier’s testimony (Ex. 1002), we are persuaded Petitioner sets forth sufficient articulated reasoning with rational underpinning to support the conclusion that it would have been obvious to one of ordinary skill in the art “to use the TCP keep-alive functionality of RFC 1122 when maintaining the TCP sessions . . . disclosed by Kocherlakota.” Pet. 48 (citing Ex. 1002 ¶ 152); see Pet. 48–49 (citing Ex. 1002 ¶¶ 152–154; Ex. 1006, 102), *KSR*, 550 U.S. at 418.

Patent Owner separately addresses dependent claim 7. See PO Resp. 47–48. According to Patent Owner,

Kocherlakota is silent as to what happens if one of the proxy servers in the proxy chain goes offline or becomes unavailable. . . . There is no disclosure in Kocherlakota of proxy server 17 sending keep-alive messages to the proxies 19/21 and there is no disclosure in Kocherlakota of proxy server 17 modifying the information in the applet if one of the proxies 19/21 goes offline or becomes unavailable. . . . Petitioner fails to explain how a POSA would have removed proxy 19/21 from the list and/or how a POSA would have removed proxy 19/21 from the established proxy chain. . . . Additionally, Petitioner fails to explain how a POSA would have added proxy 19/21 back into the proxy chain. . . . Furthermore, Petitioner fails to explain how a POSA would have configured proxy server 17 to update the applet information based on removal/addition of proxy 19/21.

PO Resp. 47–48 (citing Ex. 2041 ¶¶ 284–286).

We do not agree with Patent Owner’s arguments because the arguments address neither the limitations of dependent claim 7 nor Petitioner’s assertions addressing claim 7. See Ex. 1001, 19:58–62;

Pet. 51–52. Specifically, claim 7 does not recite limitations directed to a client device going offline or becoming unavailable, and Petitioner makes no assertions with respect to claim 7 regarding Kocherlakota’s proxies going offline or becoming unavailable. *See* Ex. 1001, 19:58–62; Pet. 51–52. Moreover, we agree with Petitioner that Patent Owner’s arguments address the teachings of Kocherlakota alone rather than addressing the combined teachings of Kocherlakota and RFC 1122. *See* Pet. Reply 20; *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually.”).

Having considered both parties’ arguments and the cited supporting evidence, we are persuaded that the subject matter of claims 6–9 would have been obvious over the combined teachings of Kocherlakota and RFC 1122. *See* Pet. 48–53. Therefore, based on the entire record, Petitioner has by a preponderance of the evidence that claims 6–9 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and RFC 1122.

F. Challenges to Claims 1–6, 10, 12, 15–19, and 21–25 over Cohen and Claims 6–9 over Cohen and RFC 1122

Petitioner also challenges the patentability of claims 1–6, 10, 12, 15–19, and 21–25 under 35 U.S.C. § 103 over Cohen, as well as claims 6–9 under 35 U.S.C. § 103 over Cohen and RFC 1122. *See* Pet. 53–78. We need not determine the merits of this challenge because, as explained above, Petitioner has shown by a preponderance of the evidence that claims 1–5, 10, 12, 15–19, and 21–25 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and claims 6–9 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and RFC 1122. *See SAS Inst. Inc. v. Iancu*, 584 U.S. 371 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Beloit Corp. v. Valmet Oy*,

742 F.2d 1421, 1423 (Fed. Cir. 1984) (finding an administrative agency is at liberty to reach a decision based on a single dispositive issue because doing so “can not only save the parties, the [agency], and [the reviewing] court unnecessary cost and effort,” but can “greatly ease the burden on [an agency] faced with a . . . proceeding involving numerous complex issues and required by statute to reach its conclusion within rigid time limits”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. MOTION TO SEAL AND PROTECTIVE ORDER

Patent Owner filed a Motion to Seal and to Enter the Joint Protective Order (Paper 15, “Motion” or “Mot.”), which seeks to seal Exhibits 2040, 2041, 2045, and corresponding portions of the Patent Owner Response, and to enter the Joint Protective Order (Ex. 2052). Mot. 1. Patent Owner asserts that Exhibit 2040 contains highly sensitive source code, Exhibit 2045 is a highly sensitive technical network diagram of Patent Owner’s commercial services, Exhibit 2041 is an expert declaration that references some of the sensitive information in the exhibits, and portions of the Patent Owner Response incorporate some of the sensitive information. *See id.* at 2–6. Patent Owner argues that it would be significantly harmed by the public disclosure of its highly sensitive information, it has submitted public versions of the expert declaration and Patent Owner Response, and Patent Owner’s interest in protecting its highly sensitive information outweighs the public’s interest in a complete file history. *See id.* at 3–5. This Motion is

unopposed. *See id.* at 6. We have reviewed the exhibits at issue, including the portions of the Patent Owner Response referencing those exhibits, as well as 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 (Paper 15) and the corresponding request to enter the Protective Order (Ex. 2052).

IV. CONCLUSION

For the foregoing reasons, and after having analyzed the entire record and assigning appropriate weight to the cited supporting evidence, Petitioner has established by a preponderance of the evidence that claims 1–10, 12, 15–19, and 21–25 of the '826 Patent are unpatentable.⁷ The Motion to Seal and request to enter the Protective Order are granted.

⁷ Should Patent Owner pursue amendment of the challenged claims in a reissue or reexamination proceeding, we direct 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 files a reissue application or a request for reexamination, Patent Owner is reminded 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).

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–5, 10, 12, 15–19, 21–25	103(a)	Kocherlakota	1–5, 10, 12, 15–19, 21–25	
6–9	103(a)	Kocherlakota, RFC 1122	6–9	
1–5, 10, 12, 15–19, 21–25	103(a)	Cohen ⁸		
6–9	103(a)	Cohen, RFC 1122 ⁹		
Overall Outcome			1–10, 12, 15– 19, 21–25	

V. ORDER

Accordingly, it is

ORDERED that, Petitioner has shown by a preponderance of the evidence that claims 1–10, 12, 15–19, and 21–25 of the '826 Patent are unpatentable;

FURTHER ORDERED that the Motion to Seal (Patent Owner's Response (Paper 13), Ex. 2040, Ex. 2041, and Ex. 2045 is granted;

FURTHER ORDERED that the request to enter the Protective Order (Ex. 2052) is granted;

⁸ As explained above in Section II.F, because Petitioner shows all of the claims are unpatentable on the basis of Kocherlakota or the combination of Kocherlakota and RFC 1122, we need not reach this patentability challenge on the basis of Cohen.

⁹ As explained above in Section II.F, because Petitioner shows all of the claims are unpatentable on the basis of Kocherlakota or the combination of Kocherlakota and RFC 1122, we need not reach this patentability challenge on the basis of Cohen and RFC 1122.

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, 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.

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