

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

METACLUSTERLT, UAB,
Petitioner,

v.

BRIGHT DATA LTD.,
Patent Owner.

IPR2022-00687
Patent 11,190,622 B2

Before KRISTEN L. DROESCH, THOMAS L. GIANNETTI, and
RUSSELL E. CASS, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

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 1–14, 16, 17, 20–24, and 26–32 (“challenged claims”) of U.S. Patent No. 11,190,622 B2 (Ex. 1001, “’622 Patent”) are unpatentable.

A. Procedural History

Metacluster LT, UAB (“Petitioner”) filed a Petition requesting *inter partes* review (“IPR”) of claims 1–14, 16, 17, 20–24, and 26–32 of the ’622 Patent. Paper 1 (“Pet.”). Petitioner filed a Declaration of James Olivier, Ph.D., with its Petition. Ex. 1002. Bright Data Ltd. (“Patent Owner”) timely filed a Preliminary Response. Paper 7. With our authorization, Petitioner filed a Preliminary Reply (Paper 9), and Patent Owner filed a Preliminary Sur-reply (Paper 10) to address discretion to deny institution.

Pursuant to 35 U.S.C. § 314, we instituted trial on October 7, 2022. Paper 11.

After institution of trial, Patent Owner filed a Response (Paper 18, “PO Resp.”), to which Petitioner filed a Reply (Paper 25, “Pet. Reply”), to which Patent Owner filed a Sur-reply (Paper 26, “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 (Ex. 2018) and Dr. Williams’s deposition (Ex. 1021) are included in the record.

Oral argument was held on July 12, 2023. A transcript of the oral argument is included in the record. Paper 36.

B. Related Matters

Petitioner indicates the '622 Patent issued from an application that is a continuation of the patent application that issued as U.S. Patent No. 10,484,511 ("511 Patent"). See Pet. 2. Petitioner also indicates that the '622 Patent shares a common specification with and claims entitlement to the same earlier effective filing date as the '511 Patent and U.S. Patent Nos. 10,257,319, 10,484,510, and 10,637,968 (collectively "related patents"). See *id.* at 2–3. Petitioner further indicates that there are close to 50 patents or patent applications that claim, or which may claim, entitlement to the same earlier effective filing date as the '622 Patent. See *id.* at 5–7; Paper 24, 4–8.

There is currently no litigation involving the '622 Patent. Pet. 3, Paper 24, 2; Paper 29, 1. The parties indicate the '511 Patent or the related patents are or were the subject of the following district court proceedings:

Luminati Networks Ltd. v. UAB Tesonet, No. 2:18-CV-00299 (E.D. Tex.)

Bright Data Ltd. v. Teso LT, UAB, No. 2:19-CV-00395 (E.D. Tex.)

Bright Data Ltd. v. Code200, UAB, No. 2:19-CV-00396 (E.D. Tex.)

Luminati Networks Ltd. v. BI Science (2009) Ltd., No. 2:19-CV-00397 (E.D. Tex.)

Bright Data Ltd. v. NordVPN, No. 2:19-CV-00414 (E.D. Tex.)

Luminati Networks Ltd. v. NetNut, Ltd., No. 2:20-CV-00188 (E.D. Tex.)

Bright Data Ltd. v. NetNut, Ltd., No. 2:21-CV-00225 (E.D. Tex.)

Bright Data Ltd., v. Ninja-Tech, SIA, No. 2:21-CV-00434 (E.D. Tex.)

Metacluster LT, UAB v. Bright Data Ltd., No. 2:22-CV-00011 (E.D. Tex.)

Bright Data Ltd., v. Oxylabs, UAB, No. 2:23-CV-00171 (E.D. Tex.)
Pet. 3; Paper 3, 2–3, Paper 24, 1–2; Paper 29, 4–5.

The parties identify the following *inter partes* review proceedings as involving the related patents and other patents assigned to Patent Owner:

Case No.	Status
IPR2020-00166	Terminated
IPR2020-00167	Terminated
IPR2020-01266	Institution Denied
IPR2020-01358	Institution Denied
IPR2020-01506	Institution Denied
IPR2021-00122	Institution Denied
IPR2021-00249	Institution Denied
IPR2021-00458	Terminated
IPR2021-00465	Terminated
IPR2021-01492	Pending
IPR2021-01493	Pending
IPR2021-01502	Institution Denied
IPR2021-01503	Institution Denied
IPR2022-00103	Pending
IPR2022-00135	Final Written Decision
IPR2022-00138	Final Written Decision
IPR2022-00353	Pending
IPR2022-00861	Terminated
IPR2022-00862	Terminated
IPR2022-00915	Pending
IPR2022-00916	Pending
IPR2022-00936	Pending
IPR2022-01109	Pending
IPR2022-01110	Pending
IPR2023-00038	Pending
IPR2023-00039	Pending
PGR2022-00052	Pending
PGR2022-00061	Pending

Pet. 4–5; Paper 3, 1–2; Paper 24, 3–4; Paper 29, 1–3.

The parties indicate that there are a number of Requests for Reexamination of other patents assigned to Patent Owner, including Reexamination Control Nos. 90/014,624 and 90/014,827 of the '511 Patent. Pet. 8; Paper 3, 2, Paper 24, 8; Paper 29, 3.

C. The '622 Patent (Ex. 1001)

The '622 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 to nearby peers. *See id.* at code (57), 15:12–16:11, Fig. 11.

D. Illustrative Claim

Claim 1 is independent, and claims 2–14, 16, 17, 20–24, and 26–32 depend directly or indirectly therefrom. *See* Ex. 1001, 19:16–22:16.

Claim 1 is illustrative and reproduced below:

1[p] A method for fetching, by a first client device, a first content that comprises a web-page, an audio, or a video content, and is identified by a first Uniform Resource Locator (URL) and stored in a first web server, for fetching, by the first client device, a second content that comprises a web-page, an audio, or a video content, and is identified by a second URL and stored in a second web server, for use with a first server that stores a group of IP addresses, the method by the first server comprising:

- 1[a] receiving, from the first client device, the first URL;
- 1[b] selecting, in response to the receiving of the first URL from the first client device, an IP address from the group;
- 1[c] sending, in response to the selecting, the first URL to the first web server using the selected IP address;
- 1[d] receiving, in response to the sending of the first URL, the first content from the first web server;
- 1[e] receiving, from the first client device, the second URL;
- 1[f] selecting, in response to the receiving of the second URL from the first client device, an additional IP address from the group;
- 1[g] sending, in response to the selecting, the second URL to the second web server using the selected additional IP address; and
- 1[h] receiving, in response to the sending of the second URL, the second content from the second web server.

Ex. 1001, 19:16–41 (Petitioner’s references 1[p] through 1[h] added).

E. Asserted Challenges to Patentability and Asserted Prior Art

Petitioner asserts that claims 1–14, 16, 17, 20–24, and 26–32 would have been unpatentable based on the following grounds (Pet. 10–11):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–7, 10, 14, 16, 17, 20–24, 26–32	103(a) ¹	Kocherlakota ²
8, 9, 11–13	103(a)	Kocherlakota, RFC 1122 ³
1–14, 17, 20–24, 26–32	103(a)	Cohen ⁴

III. ANALYSIS

A. 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 the record, evidence of objective indicia of

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 ‘622 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).

nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art as of October 8, 2009¹—the ’622 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 ’622 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 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. 12 (citing Ex. 1002 ¶¶ 33, 34, 36).

Patent Owner asserts that a person of ordinary skill in the art “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 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, “Patent Owner’s analysis herein does not change under the Board’s preliminary definition of a [person of ordinary skill in the art].” *Id.*

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 ’622 Patent Specification and the asserted prior art, and does not materially differ from Patent Owner’s definition.

C. 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 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 “first server” and “client device” and brief discussions addressing constructions for “selecting, in response to the receiving of the [first/second] URL,” the first server “sending . . . to the [first/second] web server using the selected IP address,” and “using the selected IP address as a source address,” as recited in claim 1. See Pet. 18–21 (citing Ex. 1001, 16:21–22, claims 3–4; Ex. 1002 ¶¶ 54–55; Ex. 1005, 8; Ex. 1010, 3–4, 10–12; Ex. 1011, 5, 11–15; Ex. 1012, 2; Ex. 1013, 2–5, 7–12; Ex. 1014, 6).

Patent Owner asserts that several claim terms and phrases are not disputed. See PO Resp. 9–10. More specifically, Patent Owner asserts the parties agree that the preamble is limiting, agree regarding the meaning of “source address” and agree that the claim phrases “selecting in response to

the receiving of the [first/second] URL” and “sending . . . to the [first/second] web server using the selecting IP address” do not require constructions and would have their plain and ordinary meanings. *See id.* Patent Owner contends that there is a dispute regarding the terms “client device” and “first server.” *Id.* at 9.

As demonstrated in the analysis below, we need only construe the term “first server” and need not construe the term “client device.” *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))).

1. Petitioner’s Assertions Addressing “first server”

Petitioner asserts that challenged claims use the same terms “first server” and “client device” as the claims in the ’511 Patent and the related patents. *See* Pet. 18–19 (citing Ex. 1010, 3–4; Ex. 1011, 5). Petitioner points out that the district court in the and *Bright Data Ltd. v. Code200, UAB*, No. 2:19-cv-00396 (E.D. Tex.) (“*Code200* litigation”) construed “first server” as “server that is not the client device or the web server.” Pet. 19 (citing Ex. 1011, 13–15). Petitioner further points out that, in *Bright Data Ltd. v. Teso LT, UAB*, No. 2:19-cv-00395 (E.D. Tex.) (“*Teso* litigation”) and the *Code200* litigation, the district court construed “client device” as “communication device that is operating in the role of a client.” *See id.* (citing Ex. 1010, 10–12; Ex. 1011, 11–13). 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. 19; *see* Pet. Reply 13 (similar argument).

Petitioner further asserts that, in addressing the term “first server,” the district court in the *Code200* litigation addressed whether one component can simultaneously serve as more than one of the client device, the first server, and the web server, and concluded that it cannot. *See* Pet. 19 (citing Ex. 1011, 13–15). Further clarification of the construction for “first server” was requested from the district court. *See id.* (citing Ex. 1012, 2).

According to Petitioner, the district court “declined to formally change the construction, but confirmed ‘Defendants’ understanding of the scope of the construction[], as **represented by the requested clarification[] ... , is correct**’ and ‘already embedded in’ the original construction.” *Id.* (quoting Ex. 1013, 7–11). 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 ’622 Patent as defining HTTP protocol, confirms the role-based constructions are correct. *See* Pet. 20 (quoting Ex. 1005, 8; citing Ex. 1001, 16:21–22; Ex. 1002 ¶ 54). 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). 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 ¶ 55).

2. Patent Owner's Assertions Addressing "first server"

Patent Owner contends that a person of ordinary skill in the art “would understand the term ‘first server’ to mean ‘server that is not a client device.’” PO Resp. 36 (citing Ex. 2041 ¶ 144); see Pet. Sur-reply 10. According to Patent Owner, “[t]his proposed construction is consistent with the claim language, the specification, and the prosecution histories distinguishing servers from client devices.” PO Resp. 36 (citing Ex. 2041 ¶ 144); see PO Sur-reply 10, 12–15. Patent Owner contends the district court construed “client device” as a communication device, and based on that construction, a server is not a client device because it is not a communication device. See PO Resp. 36 (citing Ex. 2041 ¶ 144); see also *id.* at 11–13 (discussion of district court’s construction for “client device”). According to Patent Owner, the district court “repeatedly acknowledged that a server is not a communication device.” *Id.* at 37 (citing Ex. 1010, 12, Ex. 1013, 10); see also *id.* at 13–14 (discussion of district court’s construction for “second server”).

Patent Owner contends that the claim language itself distinguishes servers and client devices, and that there are many prosecution history statements that servers and client devices are different physical elements, and different types of network components. See PO Resp. 36–37 (citing Ex. 2041 ¶ 141); see also *id.* at 23–28 (discussion of prosecution histories), PO Sur-reply 12–15 (argument that prosecution histories support Patent Owner’s constructions). Patent Owner further asserts that a server is structurally different from a client device, because a person of ordinary skill in the art “would understand that a proxy server 6 of Figure 1 is not the same as agent 122 of Figure 3 [of the ’622 Patent].” PO Resp. 37 (citing Ex. 2041

¶ 143); *see* PO Sur-reply 7–9, 15 (similar arguments); *see also* PO Resp. 20–23 (discussion of Figures 1 and 3 of the ’622 Patent).

Patent Owner asserts that a person of ordinary skill in the art “would understand that a server is not a consumer computer,” “consider a server to be a commercial network element rather than a consumer device,” and “understand that, unlike a client device, a server is not portable or moved about by a consumer.” PO Resp. 37 (citing Ex. 2041 ¶ 145). Patent Owner asserts that this understanding is “consistent with the prosecution history statements that a server is typically capable of a large number of connections, unlike a typical client device.” *Id.* at 37–38 (citing Ex. 2041 ¶ 145); *see id.* at 23–28 (discussion of prosecution histories), PO Sur-reply 12–15 (argument that prosecution histories support Patent Owner’s constructions). 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* PO Resp. 38 (citing Ex. 2041 ¶¶ 146–147; 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” in the *Code200* litigation (*see* Ex. 1010, 10–14), *Teso* litigation (*see* Ex. 1011, 11–15) and *Bright Data Ltd. v. NetNut, Ltd.*, No. 2:21-CV-00225 (E.D. Tex.) (*see* Ex. 2023, 10–23), the Alice Orders in the *Code200* litigation (*see* Ex. 2025, 8–10) and *Teso* litigation (*see* Ex. 2024, 6–9), the express claim language, the Figures of the ’622 Patent Specification, and the Applicant’s prosecution history statements. *See* PO Resp. 10–28; *see also* PO Sur-reply 2–3 (similar arguments). More specifically, Patent Owner asserts that Petitioner’s “purely role-based constructions are not appropriate because they fail to

recognize the special meaning of ‘communication device’ in the context of the specification,” “fail to recognize that the ‘first server’ of the ‘622 Patent claims is indeed a server,” “fail to recognize that a server is not a ‘communication device,’” and “fail to distinguish between client devices and servers.” PO Resp. 12 (citing Ex. 2041 ¶ 79), 14 (citing Ex. 2041 ¶ 79), 15 (citing Ex. 2041 ¶ 83), 17 (citing Ex. 2041 ¶ 83). Patent Owner further contends that Petitioner’s “purely role-based constructions are not appropriate because they . . . contradict the Court’s construction for the term ‘client device,’” and “the term ‘first server,’ genericize th[ese] claim term[s],” and “because the Court expressly rejected referring to th[ese] claim term[s] as a generic device operating in a particular role.” *Id.* at 12–13 (citing Ex. 2041 ¶ 79), 14 (citing Ex. 2041 ¶ 79); *see* PO Sur-reply 1–2. According to Patent Owner, Petitioner’s “purely role-based constructions do not account for the express claim language,” and “fail to account for the[] structural differences between proxy servers and proxy client devices” and “contradict the applicant’s prosecution history statements.” PO Resp. 18 (citing Ex. 2041 ¶ 87), 23 (citing Ex. 2041 ¶¶ 104, 105); *see also id.* at 18–19 (discussion of the claim language), 20–23 (discussion of Figures 1 and 3 of the ‘622 Patent), 24–28 (discussion of prosecution histories).

In sum, Patent Owner contends that a person of ordinary skill in the art “would understand there are structural differences between client devices and servers in the context of the specification” and “treating client device and servers as interchangeable, general purpose computers is inconsistent with the disclosure in the ‘622 Patent, the prosecution histories, and the Court’s Orders.” PO Resp. 36, 39 (citing Ex. 2041 ¶¶ 140, 148).

3. Analysis

For the reasons discussed below, we determine that the evidence of record supports the district court’s construction for “first server” as “server that is not the client device or the web server” that we find to apply here in view of the full record. Conversely, we find that the evidence of record does not support Patent Owner’s position that a “first server” is a “server that is not a client device.”

a. 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, 19:23–24; *see* PO Resp. 18 (citing Ex. 2041 ¶87). In steps 1[a], the 1[e] of claim 1, the first server, “receiv[es], from the first client device, the first URL,” and “receiv[es], from the first client device, the second URL.” *See* Ex. 1001, 19:25, 19:33. 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[a] and 1[e] 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. 18–19 (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 understand that the claimed ‘first server’ is a server, not a client device, regardless of the role

being performed at a particular point in time for a particular method step.” PO Resp. 18 (citing Ex. 2041 ¶ 87). 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, “directly contradict the express claim language.” *Id.* (citing Ex. 2041 ¶ 87); *see id.* at 18–19 (citing Ex. 2041 ¶ 88).

Nonetheless, Patent Owner also asserts that, “[b]ased on the claim language, a [person of ordinary skill in the art] would understand that the ‘first server’ is an intermediary which changes roles at different points in time.” PO Resp. 19 (citing Ex. 2041 ¶ 88). More specifically, Patent Owner asserts that during method steps 1[a] and 1[e], the first server is operating in the role of a server, and operating in the role of a client during method steps 1[c], 1[d], 1[g], and 1[h], under the purely role-based constructions. *See id.* at 19 n.7 (citing Ex. 2041 ¶ 88). In steps 1[a], the 1[e] of claim 1, the first server, receives, from the first client device, the first/second URL. *See* Ex. 1001, 19:25, 19:33. In steps 1[c] and 1[g], the first server, sends in response to the selecting, the first/second URL to the first/second web server using the selected/selected additional IP address. *See id.* at 19:29–30, 19:37–39. In steps 1[d] and 1[h], the first server receives, in response to the sending of the first/second URL, the first/second content from the first/second web server. *See id.* at 9:31–32, 19:40–41. Thus, in steps 1[a] and 1[e], the first server operates as a server in receiving a URL from the client device, but in steps 1[c] 1[d], 1[g], and 1[h] the first server operates as a client in sending the first and second URLs and receiving first and second content. *See* PO Resp. 18–19, 40–42. Consistent with these 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 steps 1[a] and 1[e] and operates as a client for steps 1[c], 1[d], 1[g], and 1[h], as recited in claim 1. The language of claim 1 supports the district court’s construction for “first server” and understanding of that construction.

In sum, we agree with the district court’s construction for “first server” as “server that is not **the** client device or the web server” because this construction is consistent with the limitations of claim 1. See Ex. 1011, 13–15 (emphasis added); *accord* Ex. 1010, 13–14. Patent Owner’s argument that “the term ‘first server’ to mean ‘server that is not a client device” (PO Resp. 36) is not supported by the limitations of claim 1, which, as acknowledged by Patent Owner (see PO Resp. 19, 19 n.7), describe “the first server” that operates as a server in receiving a first/second URL from the first client device, as well as operates as a client in sending the first/second URL to the first/second web server and receiving first/second content from the first/second web server.

We further discuss the construction for “first server” and the roles of the first server in more detail below with respect to the ’622 Patent Specification, the prosecution histories, and the extrinsic evidence.

b. ’622 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 ’622 Patent

Specification's disclosure of the acceleration server which receives an IP address in a resource request from the client device. *See* Ex. 1001, 12:57–13:31, 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).

In contrast, Patent Owner asserts that Figures 1 and 3 of the '622 Patent inform a person of ordinary skill in the art that a server is not a client device. *See* PO Resp. 20 (citing Ex. 2041 ¶93). According to Patent Owner, “[p]roxy server 6 of Figure 1 (prior art) must be structurally different from agent 122 of Figure 3 (inventive embodiment).” *Id.* (citing Ex. 2041 ¶93); *see id.* (citing Ex. 2041 ¶92). Patent Owner asserts that a person of ordinary skill in the art “would understand that proxy server 6 is a server and not a client device.” *Id.* at 21 (citing Ex. 2041 ¶96) (emphasis omitted). Similarly, Patent Owner contends that person of ordinary skill in the art “would understand that agent 122 is a client device and not a server.” *Id.* at 22 (citing Ex. 2041 ¶100) (emphasis omitted). Patent Owner contends that if a person of ordinary skill in the art were to apply the purely role-based constructions, both proxy server 6 and agent 122 would be operating in the roles of a client and a server, and both proxy server 6 and agent 122 would be operating in the same roles at any given point in time, leaving nothing to distinguish the architectures of Figure 1 and Figure 3. *See id.* at 21–23 (citing Ex. 2041 ¶¶96–97, 101–104).

We do not agree with Patent Owner's argument that proxy server 6 of Figure 1 must be structurally different from agent 122 of Figure 3 because it 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. Other than this faulty reasoning that there would be nothing to distinguish the proxy server 6 of Figure 1 and agent 122 of Figure 3, Patent Owner’s witness, Dr. Williams, does not cite additional disclosures from the ‘622 Patent Specification to support his testimony that the ‘622 Patent Specification informs a person of ordinary skill in the art that a server is not a client device. *See, e.g.*, Ex. 2041 ¶¶ 91–104.

Patent Owner also contends that a person of ordinary skill in the art “would consider a server to be a commercial network element, rather than a consumer device,” and “would understand that . . . a server is not portable or moved about by a consumer.” PO Resp. 37 (citing Ex. 2041 ¶ 145); *see also id.* at 33–34 (argument that “client device” means a consumer computer that is typically portable and easily moved). Patent Owner contends that a person of ordinary skill in the art

would understand 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. 38 (citing Ex. 2041 ¶ 146). Patent Owner relies on the testimony of Dr. Williams who testifies 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 ¶¶ 141, 143–144. We discuss the prosecution histories below, but note that Dr. Williams does not identify any ’622 Patent Specification disclosures that support Dr. Williams’s testimony of the specific structure and nature of a server. See *id.* ¶¶ 145–146. Therefore, we give little weight to Dr. Williams’s testimony regarding the specific structure and nature of a server on the basis of the ’622 Patent Specification. 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).

In summary, we find that the ’622 Patent Specification supports the district court’s construction of “first server” as “server that is not the client device or the web server.” We also find that the ’622 Patent Specification fails to provide sufficient support for Patent Owner’s construction for “first server” as “server that is not a client device.”

c. Prosecution Histories

Patent Owner argues the prosecution histories of the ’622 Patent, its parent ’511 Patent, its grandparent (U.S. Patent No. 10,225,374 (“’374 Patent”), and its great grandparent (U.S. Patent No. 10,069,936 (“’936 patent”)), support the construction that “first server” means “server that is not a client device.” See PO Resp. 36 (citing Ex. 2041 ¶ 144); see also *id.* at 23 (asserting that based on the prosecution history statements, a person of ordinary skill in the art “would understand a ‘client device’ is not a ‘server’ and vice versa,” citing Ex. 2041 ¶ 105), 24–28 (discussion of the prosecution

history statements). More specifically, Patent Owner asserts that prosecution histories include “statements that servers and client devices are different physical elements, . . . are different types of network components,” “that a server is a dedicated network element, unlike a client device” and “is typically capable of a large number of connections, unlike a typical client device.” PO Resp. 36–38 (citing (Ex. 2041 ¶¶ 141, 145).

Patent Owner points to statements in the prosecution history of the great grandparent ’936 Patent concerning the Garcia prior art reference that was used as the basis of a rejection. PO Resp. 24–25. More specifically, Patent Owner asserts that the applicant argued that “the cache server 306 of Garcia ‘is clearly a dedicated device and performs a server functionality . . . and actually teaches away from identifying and using another client device for supporting a content request by a specific client.’” *Id.* at 24 (quoting Ex. 2028, 215 (emphasis omitted)). Patent Owner asserts that the examiner responded that the arguments are moot in view of new grounds of rejection, the applicant repeatedly argued that client devices are different from servers, and the examiner withdrew rejections based on Garcia and issued new rejections based on other references. *See id.* (citing Ex. 2028, 77, 96–97, 163–164, 172). According to Patent Owner, “the examiner recognized a server cannot be equated to a client device regardless of the role being performed at a given moment in time.” *Id.* (citing Ex. 2041 ¶ 109); *see* PO Sur-reply 13 (similar argument). Patent Owner also refers to statements made by the applicant distinguishing Garcia, including that in the Garcia reference client devices “are typically consumer owned and operated,” and “inherently [re]sources limited . . . in bandwidth and storage capability.” *Id.* at 24–25 (quoting Ex. 2028, 163–164) (emphasis omitted). Patent Owner further points out that in the Notice of Allowance, the examiner stated that

“the limitations of the independent claims, within its environment, is allowable subject matter over the prior art.” *Id.* at 25 (quoting Ex. 2028, 44) (emphasis omitted). In the Sur-Reply and responsive to Petitioner’s argument that the prosecution histories do not involve any disclaimer (see Pet. Reply 10), Patent Owner contends that “the ’936 Patent prosecution history statements made by Applicant disclaim servers as a type of ‘client device.’” PO Sur-reply 13, 13 n.6 (citing Ex. 2028, 163).

The claims that were under consideration during prosecution of the ’936 Patent, however were 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 the issued claims have multiple steps that differ from those of the ’622 Patent. See, e.g., Ex. 2027, 19:16–52. Given these differences, we discount the significance of statements made by the applicant during prosecution of the ’936 Patent to the assessment of claim construction for the ’622 Patent. Moreover, considering the varying terms used in the claims, and the various terms used in the applicant’s prosecution history statements (e.g., “client” “server,” “client device,” and “server device”) we do not find that Applicant’s statements regarding a recited “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 ’622 Patent’s claim language and Specification clearly support a role-based interpretation of the term “client device.” In contrast, the ’936 Patent prosecution is for a great grandfather of the ’622 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 ’622 Patent claims than the claim language and Specification of the ’622 Patent itself. 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 a great grandfather application with different claims having different claim language from the patent and claims under review.

Patent Owner also presents arguments based on the prosecution histories of the '374 Patent and the '511 Patent which are the grandparent and parent to the '622 Patent respectively. *See* PO Resp. 26–27. Patent Owner points out that “[t]he applicant stated that ‘the claimed invention clearly defines a unique information delivery structure that involves not only content delivery, but also exchange of various identifiers of networked devices.’” *Id.* at 26 (quoting Ex. 2029, 12⁵), 27 (citing Ex. 1008, 240). According to Patent Owner, the applicant “distinguished the claimed invention from the cited primary reference which disclosed peer-to-peer direct communication.” *Id.* at 26 (citing Ex. 2029, 14), 27 (citing Ex. 1008, 243). On this basis, Patent Owner contends that a person of ordinary skill in the art “would understand that traditional peer-to-peer systems typically consist of client devices and is therefore not the same as the specific architecture in which the claimed methods of the ‘374 Patent” and “the ‘511 Patent operate.” *Id.* at 26 (citing Ex. 2041 ¶ 116), 27 (citing Ex. 2041 ¶ 120). Patent Owner further cites the examiner’s statement in the Notice of Allowance that “the limitations of the independent claims, within its environment, is allowable subject matter over the prior art, in light of the specification.” Ex. 1008, 38; Ex. 2029, 6; *see* PO Resp. 26, 27.

Patent Owner’s arguments based on the prosecution histories of the '374 Patent and '511 Patent concern patent eligibility, not claim construction. Based on our review of the prosecution histories of the '374 Patent and '511 Patent, we find that the applicant’s statements addressed specific issues relating to patent eligibility, such as whether the claim recited the use of generic computers and functions for purpose of eligibility under

⁵ Patent Owner cites page 11, but the quoted text appears at page 12.

35 U.S.C. § 101, and find that the applicant made no statements indicating disclaimer of the scope of the claim term “first server.” See Ex. 1008, 239–245; Ex. 2029, 11–16.

Patent Owner additionally refers to the prosecution history of the grandparent ’374 Patent, parent ’511 Patent, and the ’622 Patent and the examiner’s statements that the “environment” of the claimed methods supported patentability. See PO Resp. 26 (citing Ex. 2029, 6), 27 (citing Ex. 1008, 38; Ex. 2041 ¶ 121), 28 (citing Ex. 1007, 43; Ex. 2041 ¶ 122). We, however, fail to appreciate any disavowal of claim scope for the term “first server” by Applicant in the prosecution of the ’622 Patent, the parent ’511 Patent, and the grandparent ’374 Patent, nor does the examiner provide any indication of any disclaimer of claim scope.

In sum, we find that the prosecution history statements are not inconsistent with the 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.”

d. Extrinsic Evidence

Patent Owner cites extrinsic evidence to support its proposed construction for “a first server.” See PO Resp. 38. Patent Owner points to “a definition of a server as ‘a computer or device on a network that manages network resources. Servers are often dedicated, meaning that they perform no other tasks besides their server tasks.’” *Id.* (quoting Ex. 2035, 2; citing Ex. 2041 ¶ 147). Patent Owner also provides quotations and citations to

additional evidence describing servers. *See id.* (quoting Ex. 2036, 5, 6; citing Ex. 2037, 7; Ex. 2041 ¶ 147).

We have considered Patent Owner’s proffered extrinsic evidence. When considered in the context of the claim language itself, the ’622 Patent Specification, and the prosecution history, the extrinsic evidence is not inconsistent with the district court’s construction for “first server” as a “server that is not the client device or the web server.” On the other hand, Patent Owner’s extrinsic evidence, when considered in the context of the claim language itself, the ’622 Patent Specification, and the prosecution history, does not sufficiently support Patent Owner’s construction for “first server” as “server that is not a client device.” Moreover, we note that Patent Owner’s cited definition states that servers are “*often* dedicated.” *See* Ex. 2035, 2. This definition, however, does not state that servers are *always* dedicated and *always* perform no other tasks besides their server tasks. *See id.*

4. Conclusion

Based on evidence of record, we adopt the district court’s construction for “first server” as “server that is not the client device or the web server” and decline to adopt Patent Owner’s proposed construction for “first server.”

D. Challenge to Claims 1–7, 10, 14, 16, 17, 20–24, and 26–32 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.

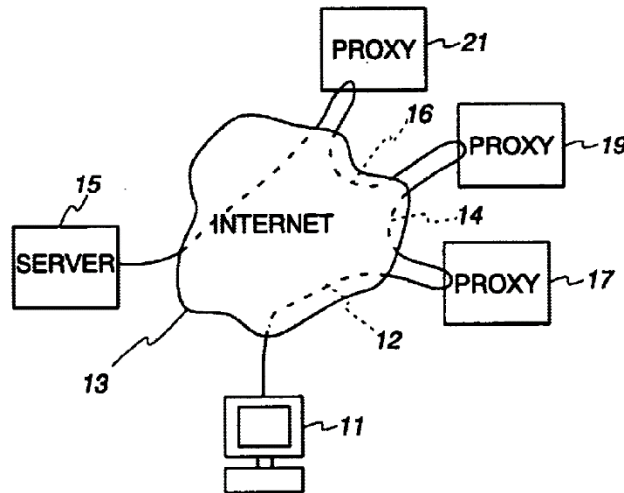


Figure 1 depicts client computer 11 connected to web server 15 through chained proxies 17, 19, 21. *See* Ex. 1003, 2:39–40, 2:54–3:9. Client computer 11 sends a URL to first proxy server 17, a session is established between client computer 11 and first proxy server 17, and first proxy server 17 returns 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.

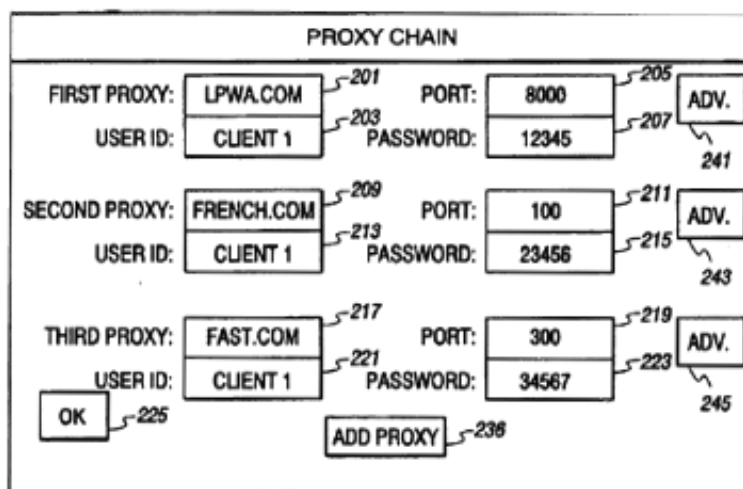


Figure 2 depicts an applet window that presents a number of information lines into which the client can enter identities of up to three proxy servers, port numbers, user names, etc. *See* Ex. 1003, 2:41–42, 3:28–36. Applet window includes advanced feature buttons 241, 243, 245 for each proxy. *See id.*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

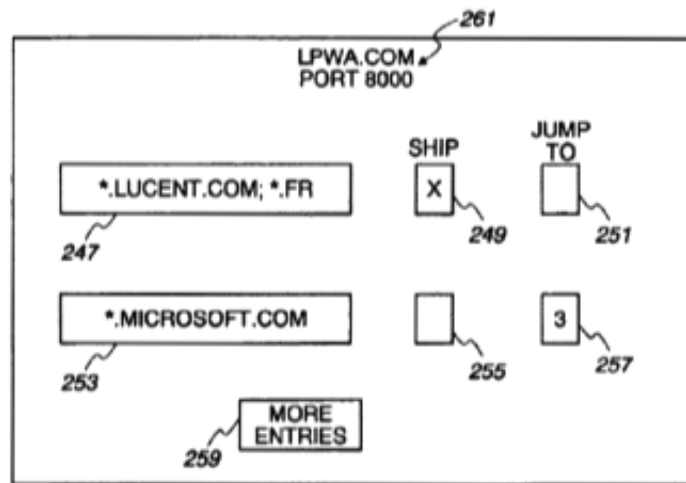


Figure 7 depicts advanced feature window for the first proxy when advanced feature button 241 is clicked. *See* Ex. 1003, 4:63–5:5. Text window 247 is used to enter URLs for which first proxy 17 is to be skipped or a “jump to” command is to be entered. *See id.* at 5:8–10. URLs are typed into text window 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.

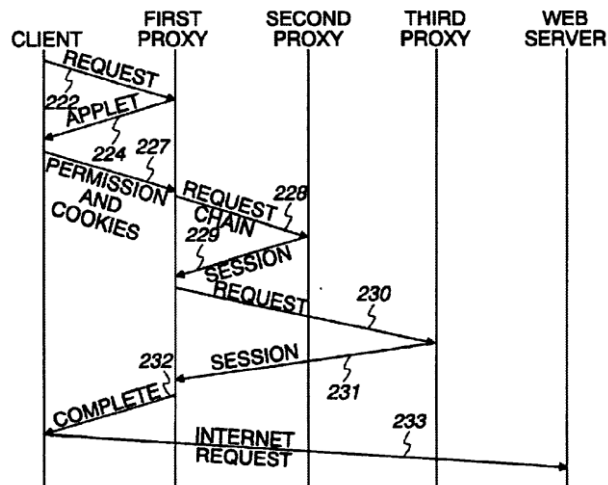


Figure 6 depicts a message sequence among clients, web proxies, and a web server to establish and use chained proxies to access the internet. *See* Ex. 1003, 2:50, 4:36–38. Request 222 for proxy use is sent from client computer 11 to first proxy 17. *See id.* at 4:39–40. First proxy 17 returns an applet 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 a message 229 to first proxy 17 signifying session establishment. *See id.* at 4:45–48. First proxy 17 sends a message 230 to third proxy 21 requesting a session with third proxy 21 which returns a 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

1[p] Preamble

The preamble of claim 1 recites: :

A method for fetching, by a first client device, a first content that comprises a web-page, an audio, or a video content, and is identified by a first Uniform Resource Locator (URL) and stored in a first web server, for fetching, by the first client device, a second content that comprises a web-page, an audio, or a video content, and is identified by a second URL and stored in a second web server, for use with a first server that stores a group of IP addresses.

Ex. 1001, 19:16–23. Petitioner contends that, to the extent the preamble is limiting, Kocherlakota discloses or teaches the preamble. *See* Pet. 28 (emphasis omitted) (citing Ex. 1002 ¶91). More specifically, Petitioner asserts:

Kocherlakota discloses a method for fetching by a client computer 11 (the claimed “first client device”) a web page (the claimed “first content”) identified by a first URL through proxy 17 (the claimed “first server”) as well as a different web page (the claimed “second content”) identified by a second URL through proxy 17.

Id. (citing Ex. 1002 ¶92). Petitioner contends that “[t]he first URL is a URL that by applying the logic shown in FIGs. 2 and 7, proxy 17 selects proxy 19” and “[t]he second URL is a URL that, by applying the logic shown in FIGs. 2 and 7, proxy 17 selects proxy 21.” *Id.* at 28–29 (citing Ex. 1002 ¶¶ 94–95). Petitioner explains, “[f]or example, upon receiving www.uspto.gov, proxy 17 would determine that this URL does not match the criteria in text windows 247 or 253 of FIG. 7 and therefore route in accordance with the established proxy chain of FIG. 2, selecting proxy 19.” *Id.* (citing Ex. 1002 ¶94). Petitioner also explains, “[a]s another example, upon receiving www.lucent.com, proxy 17 would select proxy 19 because

the web page corresponding to this URL matches the criteria in text window 247 and the ‘skip’ command 249 was selected.” *Id.* at 29 (citing Ex. 1002 ¶¶ 94, 104). Petitioner further explains, “[f]or example, upon receiving www.microsoft.com, proxy 17 would select proxy 21 because the web page corresponding to this URL matches the criteria in text window 253 and the ‘jump to’ command 257 with ‘3’ was entered.” *Id.* (citing Ex. 1002 ¶ 95; Ex. 1003, 4:29–31, 5:18–24). Petitioner further contends that, “in order to establish sessions with proxies 19 and 21, proxy 17 must store a group of IP addresses associated with proxies 19 and 21 (the claimed ‘group of IP addresses’).” *Id.* at 30 (citing Ex. 1002 ¶ 96; Ex. 1003, 2:30–32).

Petitioner asserts that Kocherlakota’s “[c]lient computer 11 meets the construction of ‘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.” Pet. 29 (quoting Ex. 1003, 2:54–58; 4:29–31; citing Pet. 18–20; Ex. 1002 ¶ 97; Ex. 1003 1:43–45, 2:4–7, 2:30–32). According to Petitioner, Kocherlakota’s

Proxy 17 meets the construction of “first server” because it is a device operating in the role of a server by accepting a connection from client computer 11 to service requests (URL’s) by sending back responses (content from the web server) and because it is not the same physical device as client computer 11 (the claimed “first client device”).

Pet. 29–30 (citing Pet. 18–20; Ex. 1002 ¶ 98; Ex. 1003, 5:3–24).

Patent Owner contends that Petitioner’s reliance on the disclosure of the RFC 2616 for the purely role-based constructions is misplaced because “RFC 2616 explains that ‘our use of these terms [server and client] refers only to the role being performed by the program **for a particular connection.**’” PO Resp. 29 (quoting Ex. 1005, 8); *see id.* at 28–30; PO Sur-

reply 4. Patent Owner contends that “Petitioner ignores the different roles being performed at different points in time for different connections in order to improperly map the prior art onto the claims.” PO Resp. 29 (citing Ex. 2041 ¶ 160) (emphasis omitted). According to Patent Owner, “[i]f applied consistently with the teachings of RFC 2616, the role-based constructions must be analyzed at a particular point in time for a particular connection.” *Id.* (quoting Ex. 2018, 126:7–16; citing Ex. 2041 ¶ 161); see PO Sur-reply 4–6 (similar arguments).

Patent Owner argues that “Kocherlakota does not disclose a ‘first server’ as recited in the preamble of claim 1 under the purely role-based constructions.” PO Resp. 39 (citing Ex. 2041 ¶ 177). According to Patent Owner, “[t]here is no way for a [person of ordinary skill in the art] to determine whether [Kocherlakota’s] proxy server 17 is a client device or a server under the purely role-based constructions because . . . proxy server 17 operates in different roles at different points in time.” *Id.* (citing Ex. 2041 ¶ 177). Patent Owner contends that a person of ordinary skill in the art “would understand [that] the ‘first server’ is necessarily and consistently a server during the performance of method claim 1.” *Id.* (citing Ex. 2041 ¶ 177); see also PO Sur-reply 6 (“the ‘first server’ must consistently meet the construction of ‘first server’ during the performance of claim 1.”)

We do not agree with Patent Owner’s arguments. As explained by Petitioner, Patent Owner’s arguments improperly add an “at that point in time” qualifier to the limitations of claim 1 based on RFC 2616. See Pet. Reply 1–4, 14–15. 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 III.A, “first server” is construed 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). For the same reasons, we also do not agree with the similar Sur-reply arguments addressing the roles being performed for a particular connection recited in each limitation of claim 1.

Having considered both parties’ arguments and the evidence, we are persuaded that that the preamble is satisfied by the teachings of Kocherlakota. Based on the entire record, we determine Petitioner shows by a preponderance of the evidence that Kocherlakota discloses or teaches the preamble recitations. *See* Pet. 28–30.

*1[a] the method by the first server comprising:
receiving from the first client device, the first URL*

Petitioner contends that Kocherlakota discloses “the method by the first server comprising: receiving from the first client device, the first URL.” *See* Pet. 30 (citing Ex. 1002 ¶ 99). 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 URL.’” *Id.* at 30–31 (reproducing Ex. 1003, Fig. 6 (with annotations); quoting Ex. 1003, 2:4–7; citing Ex. 1002 ¶ 100; Ex. 1003, 4:52–54).

Patent Owner does not address Petitioner’s showing for this limitation of claim 1. *See* PO Resp. 39–51. 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.

1[b] the method by the first server comprising: . . . selecting, in response to the receiving of the first URL from the first client device, an IP address from the group

Petitioner asserts that Kocherlakota discloses “the method by the first server comprising: . . . selecting, in response to the receiving of the first URL from the first client device, an IP address from the group.” *See* Pet. 31 (citing Ex. 1002 ¶ 102). According to Petitioner, “upon receiving the URL, proxy 17 (the claimed ‘first server’) selects the IP address of either proxy 19 or 21 from the group 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 occurs in response to the receiving of the first URL because the selection of the URL is based on analysis of the URL. *See id.* (citing Ex. 1002 ¶ 103; Pet. 20–21). 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, 21. *See id.* (citing Ex. 1002 ¶ 104; 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.” *Id.* 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.* at 31–32 (citing Ex. 1002 ¶ 105; 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.* at 32 (citing Ex. 1002 ¶ 105; 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 selection in response to receiving the first URL from the first client device. *See* PO Resp. 42–49. Patent Owner asserts that, upon receiving the applet Kocherlakota’s proxy server 17 analyzes the applet information and contacts the named proxy servers to form the proxy chain. *See id.* at 43 (citing Ex. 1003, 2:63–3:3, 3:10–20, 3:24–33, 3:66–4:4, 4:9–11, 4:32–35; Ex. 2041 ¶ 193); PO Sur-reply 19 (citing Ex. 1003, 3:66–4:4). Patent Owner contends that the selection of proxies in the chain cannot be performed in response to the proxy server 17 receiving the internet request comprising the first/second URL because the selection of which proxies and proxy features to be used for a particular URL occurs when the client enters information or proxy identities in the applet before the internet request is received by the proxy server. *See* PO Resp. 43–46 (reproducing Ex. 1003, Fig. 6 (with Petitioner’s added annotations), Fig. 7; citing Ex. 1003, 3:26–37, 4:29–35, 4:63–5:26, Fig. 2; Ex. 2018, 57:14–20, 58:12–18, 68:5–24; 69:12–22; Ex. 2041 ¶¶ 194–198); *see also id.* at 48 (similar argument, citing Ex. 2041 ¶¶ 206–207); PO Sur-reply 18–20 (similar argument, citing PO Resp. 43–46). Patent Owner further contends that Kocherlakota’s proxy server 17 merely applies the applet and does not perform the “selecting” steps, in particular, because Kocherlakota does not include a disclosure or

teaching of any intelligent selection by proxy server 17. *See* PO Resp. 48 (citing Ex. 2041 ¶¶ 205–206). According to Patent Owner, “the disclosure of the ’622 Patent shows that the ‘selecting’ of an IP address requires some intelligent decision-making by the first server to determine, for example, the numerical closeness of the possible proxy IP addresses relative to the destination web server.” *Id.* at 49 (citing Ex. 1001, 13:25–29; Ex. 2041 ¶ 207); *see* PO Sur-reply 20 (similar argument, citing Ex. 1001, 13:8–29).

We do not agree with Patent Owner’s arguments because they are not commensurate in scope with the limitations of claim 1. Patent Owner’s arguments are premised on a requirement of a contemporaneous “intelligent decision-making” selection of an IP address from the group of IP addresses when the URL is received, which is not recited or required by claim 1. Patent Owner’s arguments are also premised on a requirement that the selection of the IP address from the group cannot be predefined based on information previously entered into an applet. The limitations of claim 1 do not preclude the use of an applet with a predefined selection of an IP address based on the receipt of a particular URL. Claim 1 merely requires that the act of selecting of an IP address from the group occurs in response to the receipt of the URL from the client device.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of limitation [1b] 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.

*1[c] the method by the first server comprising: . . .
sending, in response to the selecting, the first URL
to the first web server using the selected IP address*

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . sending, in response to the selecting, the first URL to the first web server using the selected IP address.”

See Pet. 32 (citing Ex. 1002 ¶ 106). According to Petitioner,

proxy 17 (the claimed “first server”) . . . , in response to the selecting, forwards the URL to proxy 19 . . . in order for the URL to be further forwarded by proxy 19 to proxy 21 and [by] proxy 21 to the web server hosting the first URL (the claimed “first web server”) as shown in FIG. 6.

Id. at 32–33 (reproducing Ex. 1003, Fig. 6 (with annotations); citing Ex. 1002 ¶¶ 107–108; Ex. 1003, 2:30–32, 4:29–31, 4:52–54, 5:10–23, Fig. 7). Petitioner further contends that “[p]roxy 17 sending to an intermediary, proxy 19, for eventual sending to the web server meets the claim language ‘sending . . . to the first web server’ because this language includes sending to intermediaries for forwarding to the web server.” *Id.* at 33 (citing Ex. 1002 ¶ 108; Pet. 21). 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 proxy 19, proxy 17 uses the IP address associated with proxy 19 (i.e., the selected IP address) as the destination IP address. See *id.* (citing Ex. 1002 ¶ 108; Pet. 21).

Patent Owner contends that when Kocherlakota’s proxy server 17 sends the first URL to the first web server, proxy server 17 is operating in the role of a client not a server, and cannot be a server during performance of this method step. See PO Resp. 40 (citing Ex. 2041 ¶ 180); Ex. 2018, 26:1–12, 26:19–27:5, 27:19–28:4); PO Sur-reply 4–6 (similar argument). According to Patent Owner “Petitioner fails to apply the purely role-based

constructions at the particular point in time, for the particular transaction, recited in limitation 1c.” PO Resp. 40 (citing Ex. 2041 ¶ 178–179); *see* PO Sur-reply 4–6 (similar argument).

We do not agree with Patent Owner’s argument because, as explained by Petitioner, the arguments improperly add an “at that point in time” qualifier to the limitations of claim 1. *See* Pet. Reply 1–4, 14–15.

The plain language of claim 1 does not recite or require the first server to operate in a role of a server for limitation of claim 1. Likewise, the plain language of claim 1 does not preclude the first server from operating in a role of a client for some of the limitations of claim 1. For the same reason, we also do not agree with the similar Sur-reply argument that the first server would operate in the role of the server for a particular connection recited in each limitation of claim 1.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of limitation [1c] 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. 32–34.

1[d] the method by the first server comprising: . . . receiving, in response to the sending of the first URL, the content from the first web server

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . receiving, in response to the sending of the first URL, the first content from the first web server.” *See* Pet. 34 (citing Ex. 1002 ¶ 109). Petitioner asserts that proxy 17 forwards the first URL along the proxy chain to be forwarded to the web server corresponding to the first URL. *See id.* 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 ¶ 110). 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 ¶ 110; 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.* at 34–35 (quoting Ex. 1003, 2:58–61; citing Ex. 1002 ¶¶ 111–112; Ex. 1003, 2:30–32). Petitioner further asserts that proxy 17 receives the web page corresponding to the first URL in response to sending of the first URL on the basis that web server corresponding to the first URL 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 id.* at 35 (citing Ex. 1002 ¶ 112; Ex. 1003, 2:30–32, 2:58–61, 4:29–35).

Patent Owner contends that when proxy server 17 receives a response from the first web server, proxy server 17 is operating in the role of a client, not a server, and cannot be a server during performance of this method step. *See* PO Resp. 41 (citing Ex. 2041 ¶ 184; Ex. 2018, 30:21–32:2); PO Sur-reply 4–6 (similar argument). According to Patent Owner “Petitioner fails to apply the purely role-based constructions at the particular point in time, for the particular transaction, recited in limitation 1d.” *Id.* (citing Ex. 2041 ¶¶ 182–183); *see* PO Sur-reply 4–6 (similar argument).

Patent Owner’s arguments addressing limitation 1[d] are nearly identical to arguments addressing limitation 1[c]. *Compare* PO Resp. 41,

with id. at 40. For the same reasons as those explained above addressing the preamble and limitation 1[c], we do not agree with Patent Owner’s arguments.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of limitation [1d] is taught or suggested by Kocherlakota. Based on the entire record, we determine Petitioner shows sufficiently that Kocherlakota discloses or teaches this limitation of claim 1. *See* Pet. 34–35.

*1[e] the method by the first server comprising: . . .
receiving from the first client device, the second URL*

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . receiving from the first client device, the second URL.” *See* Pet. 35 (citing Ex. 1002 ¶ 113). According to Petitioner, “[a]s shown in FIG. 6, proxy 17 (the claimed ‘first server’) received from client computer 11 (the claimed ‘first client device’) a URL (the claimed ‘first URL’).” *Id.* (reproducing Ex. 1003, Fig. 6 (with annotations); citing Ex. 1003, 2:4–7, 4:52–54). Petitioner asserts “[t]he second URL, for example www.microsoft.com, matches the criteria of text window 253.” *Id.* at 36 (citing Ex. 1002 ¶ 114; Ex. 1003, Fig. 7).

Patent Owner does not address Petitioner’s showing for this limitation of claim 1. *See* PO Resp. 39–51. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

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. 35–36.

*1[f] the method by the first server comprising: . . .
selecting, in response to the receiving of the second URL from
the first client device, an additional IP address from the group*

Petitioner asserts that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . selecting, in response to the receiving of the second URL from the first client device, an additional IP address from the group.” *See* Pet. 36 (citing Ex. 1002 ¶ 116). According to Petitioner, “upon receiving the second URL, proxy 17 (the claimed ‘first server’) selects the IP address of proxy 21 from the group of IP addresses.” *Id.* (citing Ex. 1002 ¶ 116; Ex. 1003, 5:10–23). Petitioner explains,

[W]hen proxy 17 receives from the client computer 11 a URL matching the criteria of text window 253 such as www.microsoft.com, proxy 17 “will skip the second proxy and jump to the third proxy because the number 3 is entered into the jump to box 257” and will therefore select the IP address of proxy 21 (the claimed “additional IP address from the group”).

Id. (quoting Ex. 1002 ¶ 115; citing Ex. 1003, 5:21–26, Figs. 6–7).

According to Petitioner, proxy 17 “will thus select the IP address of proxy 21 as the address used to forward the URL.” *Id.* Petitioner again contends that the selection is in response to the receiving of the first URL because the selection of the URL is based on analysis of the URL. *See id.* (citing Ex. 1002 ¶ 116; Pet. 20–21).

Patent Owner presents the same arguments for this limitation as limitation 1[b]. *See* PO Resp. 42–49; PO Sur-reply 18–20. For the same reasons explained above addressing limitation 1[b], we do not agree with Patent Owner’s arguments.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of limitation [1f] 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. 36.

1[g] sending, in response to the selecting, the second URL to the second web server using the selected additional IP address

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . sending, in response to the selecting, the second URL to the second web server using the selected additional IP address.” *See* Pet. 36 (citing Ex. 1002 ¶ 117). According to Petitioner, “proxy 17 selects the IP address of proxy 21 as the address used to forward the URL to proxy 21 . . . in order for the URL to be further forwarded to the web server hosting the second first URL (the claimed ‘second web server’).” *Id.* at 36–37 (citing Ex. 1002 ¶ 117; Ex. 1003, 2:30–32, 4:52–54). Petitioner further contends that “[p]roxy 17 sending to an intermediary, proxy 21, for sending to the web server meets the claim language . . . because this language includes sending to intermediaries to forward to the web server.” *Id.* (citing Ex. 1002 ¶ 117; Pet. 21). Petitioner further asserts that a person of ordinary skill in the art would understand that when proxy 17 sends the URL to proxy 21, the IP packets sent from proxy 17 to proxy 21 include the IP address of proxy 21 (i.e., the selected additional IP address) as the destination IP address. *See id.* (citing Ex. 1002 ¶ 117; Pet. 21).

Patent Owner presents the same arguments for this limitation as limitation 1[c]. *See* PO Resp. 41 (citing Ex. 2041 ¶¶ 186–187); *see* PO Sur-reply 4–6 (similar argument). For the reasons explained above addressing the preamble and limitation 1[c], we do not agree with Patent Owner’s arguments.

Having considered both parties' arguments and the evidence, we are persuaded that the subject matter of limitation [1g] 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. 36–37.

*1[h] the method by the first server comprising: . . .
receiving, in response to the sending of the second URL,
the second content from the second web server*

Petitioner contends that Kocherlakota discloses or renders obvious “the method by the first server comprising: . . . receiving, in response to the sending of the second URL, the second content from the second web server.” *See* Pet. 37 (citing Ex. 1002 ¶ 118). Petitioner asserts that a person of ordinary skill in the art “would understand that the web server will provide a web page corresponding to the received URL, which will be forwarded back through the proxy chain to proxy 17.” *Id.* (citing Ex. 1002 ¶ 118; Ex. 1003, 1:28–31, 2:30–32, 2:58–61, 3:9–11, 4:29–35).

Patent Owner presents the same arguments for this limitation as limitation 1[d]. *See* PO Resp. 42 (citing Ex. 2041 ¶¶ 188–189); *see* PO Sur-reply 4–6 (similar argument). For the reasons explained above addressing the preamble, limitation 1[c], and limitation 1[d], we do not agree with Patent Owner's arguments.

Having considered both parties' arguments and the evidence, we are persuaded that the subject matter of limitation [1h] 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. 37–38.

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 2–7, 10, 14, 16, 17, 20–24, and 26–32

Claims 2–7, 10, 14, 16, 17, 20–24, and 26–32 directly or indirectly depend from claim 1. *See* Ex. 1001, 19:16–22:16. We have reviewed Petitioner’s contentions and cited supporting evidence addressing how Kocherlakota discloses or suggests each of the limitations recited in claims 2–7, 10, 14, 16, 17, 20–24, and 26–32. *See* Pet. 38–51 (citations omitted).

Patent Owner argues that a person of ordinary skill in the art “would understand that proxy servers 17, 19, and 21 are servers, not client devices and “[t]here is no teaching in Kocherlakota that would suggest proxy servers 17, 19, and 21 are ‘client devices’ under Patent Owner’s proposed constructions.” PO Resp. 51–52 (citing Ex. 1003, code (57); Ex. 2041 ¶¶ 216, 217); *see id.* at 52 (argument that proxy servers 17, 19, 21 are not consumer communication devices). According to Patent Owner, “in the context of the ‘622 Patent, it is improper for Petitioner to identify proxy server 17 as a ‘server’ and another identical proxy server 19/21 as a ‘client device.’” *Id.* at 50 (citing Ex. 2041 ¶ 212). Patent Owner contends that Petitioner provides no analysis of these components under Patent Owner’s proposed constructions. *See id.* at 51–52 (citing Ex. 2041 ¶¶ 216, 217).

We do not agree with Patent Owner’s arguments because, as explained above in Section III.A., 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. 50 (citing Ex. 2018, 82:23–84:1; Ex. 2041 ¶ 211). Patent Owner contends that Petitioner’s analysis does not apply the purely role-based constructions at a particular point in time. *See id.* at 51 (citing Ex. 2041 ¶ 215). Patent Owner asserts that a person ordinary skill in the art “would be unable to determine whether, for example, proxy server 19 is a client device or a server under the purely role-based constructions.” *Id.* (citing Ex. 2041 ¶ 215); *see id.* at 50 (similar argument, citing Ex. 2041 ¶ 211), 52 (similar argument, citing Ex. 2041 ¶ 217).

For the same reasons as those explained above addressing the preamble of claim 1 and limitations 1[c], 1[d], 1[g], and 1[h], we do not agree with Patent Owner’s arguments.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of claims 2–7, 10, 14, 16, 17, 20–24, and 26–32 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 2–7, 10, 14, 16, 17, 20–24, and 26–32. *See* Pet. 38–51.

4. Objective Indicia of Nonobviousness

We next consider Patent Owner’s evidence of objective indicia on nonobviousness before reaching our conclusion regarding the obviousness as to the subject matter of claims 1–7, 10, 14, 16, 17, 20–24, and 26–32. *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 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. 64 (citing Ex. 2041 ¶¶ 265–266), 75 (citing Ex. 2041 ¶ 271); see PO Sur-reply 26. Patent Owner further asserts there is a nexus between [its] data center proxy service and at least claims 1, 14, 17, 20–24 and 27–32. PO Resp. 65 (citing Ex. 2041 ¶ 267). Petitioner disagrees and contends that Patent Owner cannot show a nexus to any of the challenged claims. See Pet. Reply 22–24.

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 argues that nonobviousness is supported by the commercial success of its data center proxy services. *See* PO Resp. 75 (citing Ex. 2041 ¶¶ 270–271). According to Patent Owner, 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.” *Id.* (citing Ex. 2039, 1–2, 5; Ex. 2041 ¶¶ 270–271)). Patent Owner contends it “offers a data center proxy service that practices the challenged claims.” *Id.* at 64 (citing Ex. 2041 ¶¶ 265–266). 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 ¶ 266). According to Patent Owner, the network diagram shows: (1) “customers 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.” *Id.* (citing Ex. 2041 ¶ 266). Patent Owner further asserts that “there is a nexus between [Patent Owner]’s data center proxy service and at least claims 1, 14, 17, 20–24, and 27–32,” and points to claim charts and Patent Owner’s source code to support its contention. *Id.* at 65–74 (citing Ex. 2040; Ex. 2041 ¶¶ 118–145); *see* PO Sur-reply 26.

Petitioner responds that Patent Owner does not and can cannot establish a nexus. *See* Pet. Reply 22. Petitioner contends that Dr. Williams did not apply the District Court’s or the Board’s constructions in analyzing Patent Owner’s data center proxy services. *See id.* at 22–23 (quoting Ex. 1021, 25:1–25:9); *accord* PO Sur-reply 26 (Dr. Williams explained how the data center proxy service practices claims 1, 14, 17, 20–24, and 27–32 under Patent Owner’s proposed constructions, citing Ex. 2041 ¶ 265; Ex. 1021, 25:7–21).

As discussed above in Section III.A., we do not adopt Patent Owner’s proposed construction limiting “first server” to “server that is not a client device.” At most, Patent Owner presents evidence that the challenged claims broadly cover the products relied on for commercial success, which is insufficient to show a nexus. *See Fox Factory*, 944 F.3d at 1377 (holding that a presumption of nexus cannot be established by simply showing that “the patent claims broadly cover the product that is the subject of the evidence of secondary considerations”).

Petitioner also argues that “P[atent Owner]’s and Dr. Williams’ purported mapping of [Patent Owner]’s data center services is conclusory and woefully inadequate.” Pet. Reply 23; *see id.* at 24. According to Petitioner, Patent Owner’s Response “cites only Dr. Williams for the proposition that ‘Bright Data offers a data center proxy service that practices the challenged claims[]’ . . . [b]ut Dr. Williams does not actually corroborate this assertion.” *Id.* at 23 (quoting PO Resp. 64; citing Ex. 2041 ¶¶ 265–266). Petitioner asserts that Dr. Williams “stat[es] only that ‘I understand that Bright Data offers a data center proxy service,’ without any explanation of a basis for that understanding.” *Id.* (citing Ex. 2041 ¶ 265). According to Petitioner, Dr. Williams does not “label the diagram or

otherwise corroborate his editorial description of that diagram to the actual diagram itself.” *Id.* (citing Ex. 2041 ¶ 266). Petitioner also contends that Dr. Williams does not testify or explain how the source code of Exhibit 2040 relates to the purported network diagram of Exhibit 2045. *See id.*

Petitioner asserts that in mapping limitations 1[a] and 1[b], Dr Williams turns to the source code itself without explaining how that purported source code relates to the network diagram or which components of the network diagram actually perform the function. *See* Pet. Reply 24 (citing Ex. 2041 ¶ 267; PO Resp. 65–67). Petitioner further asserts that for claim limitations 1[c], 1[d], 1[e], 1[f], and 1[h], “Dr. Williams fails to cite—much less explain—any particular evidence in his purported mapping.” *Id.* (citing Ex. 2041 ¶ 267; PO Resp. 67–69). Petitioner also points out that enterprise-grade scaling, 770,000+ Datacenter IPs in 98 countries, 99.99% success rate, rating as #1, and revenue, “are connected by only the barest assertion to the purported ‘first server[] as recited in the claimed methods’ rather than the claimed method itself.” *Id.* at 24–25 (citing PO Resp. 75).

We agree with Petitioner’s arguments regarding the deficiencies of the evidence presented by Patent Owner to show nexus and that the data center proxy services practices the claimed invention. In particular, we agree that Dr. Williams’s testimony is not supported sufficiently by an underlying factual basis. 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. 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. 2041 ¶ 266. 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. 64; Ex. 2041 ¶ 266. 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. 2041 ¶ 266.

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 group of IP addresses and selects an IP address. *See* Pet. 65–67; Ex. 2041 ¶ 267. In the claim charts addressing limitation 1[b], 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. 66–67 (citing Ex. 2041 ¶ 267; Ex. 2040, 425–710, 755–774, 776–811, 828–844, 1085–1231). Although the aforementioned functions are disclosed in the source code citations (*see* Ex. 2040, 425–710, 755–774, 776–811, 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. 66–67. Patent Owner's citation to its advertising (Ex. 2039) fares no better for providing a sufficient underlying factual basis to support the contention that a Superproxy stores a group of IP addresses. *See* PO Resp. 65 (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, 14, 17, 20–24, and 27–32. 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. 74 (citing Ex. 2041 ¶ 268). 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 ¶ 268); *see id.* (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 ¶ 268). 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.* (citing Ex. 2041 ¶ 269).

In response, Petitioner contends that “P[atent Owner]’s explanation of features that purportedly ‘creates the value of these services’ is supported by nothing more than Dr. Williams’ unsupported and conclusory characterizations.” Pet. Reply 24 (citing PO Resp. 74; Ex. 2041 ¶¶ 268–269).

We agree that Dr. Williams’s cited supporting testimony is not supported by an underlying factual basis. *See* Pet. Reply 74; PO Resp. 74; Ex. 2041 ¶¶ 268–269. We give little weight to Dr. Williams’s testimony that certain characteristics that create or provide value. *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. 75 (citing Ex. 2041 ¶ 271). Dr. Williams’s does not provide an underlying factual basis for this testimony, and, therefore, it is entitled to little weight. *See* Ex. 2041 ¶ 272; 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. 75; PO Sur-reply 26; Ex. 2041 ¶ 270; Ex. 2039, 1–2, 5.

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 challenged claims 1, 14, 17, 20–24, and 27–32 on the basis of Kocherlakota. Accordingly, Petitioner has demonstrated by a

preponderance of the evidence that the subject matter of claims 1–7, 10, 14, 16, 17, 20–24, and 26–32 would have been obvious over Kocherlakota.

5. 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 1–7, 10, 14, 16, 17, 20–24, and 26–32 are unpatentable under 35 U.S.C. § 103 over Kocherlakota.

E. Challenge to Claims 8, 9, and 11–13 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 8 depends from dependent claim 6, and recites “receiving a ‘keep-alive’ message, by the first server, from each of the client devices that are identified over the Internet using by the stored IP addresses.” Ex. 1001, 19:66–20:2. Claim 9 depends from claim 2, and recites “each of the IP addresses in the group is associated with a respective client device that is identified over the Internet using a respective IP address and is currently online.” *Id.* at 20:3–6. Claim 11 depends from claim 1 and recites “by the first server: sending, a ‘keep alive’ message to each of the client devices that are identified over the Internet using by the stored IP addresses; and waiting for a response to the ‘keep alive’ message from each of the client devices.” *Id.* at 20:12–18. Claim 12 depends from claim 11 and recites “responsive to not receiving, by the first server, a response to the ‘keep alive’ message from a client device, removing the IP address of the non-responsive third client device from group of IP addresses.” *Id.* at 20:20–24. Claim 13 depends from claim 11 and recites “the sending of the ‘keep alive’ message comprises periodically sending by the first server the ‘keep alive’ message to at least part of the client devices.” *Id.* at 20:25–28.

Petitioner asserts that the subject matter of dependent claims 8, 9, and 11–13 would have been obvious to a person of ordinary skill in the art based on the teachings of Kocherlakota and RFC 1122. *See* Pet. 51, 54–56 (citing Ex. 1002 ¶¶ 156–160). As to claim 8, Petitioner asserts that, based on the teachings of Kocherlakota as modified by RFC 1122, “proxy 17 (the claimed ‘first server’) receives ‘keep alive’ messages from each proxy 19 and 21 (the claimed ‘client devices’).” *Id.* at 54 (citing Ex. 1002 ¶ 156). Regarding claim 9, Petitioner contends that, based on the teachings of Kocherlakota as modified by RFC 1122, a person of ordinary skill in the art

“would understand that proxy 17 stores the IP addresses of proxies 19 and 21 to establish and maintain sessions with proxies 19 and 21 . . . proxy 17 determines based upon receipt of ‘an acknowledgement [from proxies 19 and 21] . . . confirming that the connection is still live.’” *Id.* at 55 (citing Ex. 1002 ¶¶ 154, 157; Ex. 1006, 102). As to claims 11 and 13, 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 and waits for response from each. *See id.* (citing Ex. 1002 ¶ 158), 56 (citing Ex. 1002 ¶ 160). Regarding claim 12, Petitioner asserts that “it would have been obvious to remove the IP address of a non-responsive client device from the group of IP addresses of devices under active session.” *Id.* at 56 (citing Ex. 1002 ¶ 159).

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. 52 (citing Ex. 1002 ¶ 151); *see KSR*, 550 U.S. at 418. 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 ¶¶ 151–152). 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.* at 52–53 (quoting Ex. 1006, 102; citing Ex. 1002 ¶ 152). 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.* at 53 (citing Ex. 1002 ¶ 152; Pet. 22–28, 52). 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.” *Id.* (citing Ex. 1002 ¶ 152).

Petitioner further contends that a person or 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. Pet. 53 (citing Ex. 1002 ¶ 152). Petitioner acknowledges that RFC 1122 identifies potential disadvantages of TCP keep-alives, but Petitioner asserts that a person or ordinary skill in the art “would have recognized that these disadvantages are outweighed” by the aforementioned benefits. *Id.* (citing Ex. 1002 ¶ 153; *Winner Int’l Royalty Co. v. Wang*, 202 F.3d 1340, 1349 & 1349 n.8 (Fed. Cir. 2000)).

Patent Owner argues that “proxy servers 19 and 21 are servers, not client devices under Patent Owner’s proposed constructions.” PO Resp. 52 (citing Ex. 2041 ¶ 217). Patent Owner asserts that a person ordinary skill in the art “would be unable to determine whether proxy servers 19 and 21 are client devices or servers under the purely role-based constructions.” *Id.* (citing Ex. 2041 ¶ 217). According to Patent Owner “RFC 1122 does not cure these deficiencies.” *Id.*

For the same reasons as those addressing claim 1 above in Section III.D.2, we do not agree with Patent Owner’s arguments.

Having considered both parties’ arguments and the evidence, we are persuaded that the subject matter of claims 8, 9, and 11–13 would have been obvious over the combined teachings of Kocherlakota and RFC 1122. *See* Pet. 51–56. Therefore, based on the entire record, Petitioner has established

by a preponderance of the evidence that claims 8, 9 and 11–13 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and RFC 1122.

F. Challenge to Claims 1–14, 17, 20–24, and 26–32 over Cohen

Petitioner also challenges the patentability of claim 1–14, 17, 20–24, and 26–32 under 35 U.S.C. § 103 over Cohen. *See* Pet. 57–80. We need not determine the merits of this challenge because, as explained above, Petitioner has shown by a preponderance of the evidence that claims 1–7, 10, 14, 16, 17, 20–24, and 26–32 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and claims 8, 9, and 11–13 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and RFC 1122. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (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”).

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 1–14, 16, 17, 20–24, and 26–32 of the '622 Patent are unpatentable.⁶

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–7, 10, 14, 16, 17, 20–24, 26–32	103(a)	Kocherlakota	1–7, 10, 14, 16, 17, 20–24, 26–32	
8, 9, 11–13	103(a)	Kocherlakota, RFC 1122	8, 9, 11–13	
1–14, 17, 20–24, 26–32	103(a)	Cohen ⁷		
Overall Outcome			1–14, 16, 17, 20–24, 26–32	

⁶ 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).

⁷ As explained above in Section III.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.

V. ORDER

Accordingly, it is

ORDERED that, Petitioner has shown by a preponderance of the evidence that claims 1–14, 16, 17, 20–24, and 26–32 of the '622 Patent are unpatentable;

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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