UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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OXYLABS LT UAB,
Petitioner,

v.

BRIGHT DATA LTD.,
Patent Owner.

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IPR2024-00126
Patent 11,616,826 B2

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

DROESCH, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Oxylabs, UAB ("Petitioner") filed a Petition requesting *inter partes* review ("IPR") of claims 1–10, 12, 15–19, and 21–25 of U.S. Patent No. 11,616,826 B2 (Ex. 1001, "'826 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 ("Prelim. Resp.").

We have authority to determine whether to institute review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). An *inter partes* review may not be instituted unless it is determined that "the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a).

For the reasons provided below, we determine, based on the record before us, there is a reasonable likelihood Petitioner would prevail in showing at least one of the challenged claims is unpatentable.

B. Real Parties In-Interest

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

C. Related Matters

Petitioner indicates the '826 Patent issued from an application that is a continuation of a chain of patent applications, including patent applications that issued as U.S. Patent Nos. 11,044,341 ("'341 Patent"), 10,469,628,

10,225,374 ("'374 Patent"), and 10,069,936. *See* Pet. 3. Petitioner also indicates that the '826 Patent shares a common specification with and claims entitlement to the same earlier effective filing date as U.S. Patent Nos. 10,484,511 ("'511 Patent"), 11,190,622, 10,257,319 ("'319 Patent"), 10,484,510 ("'510 Patent"), and 10,637,968 ("'968 Patent"). *See id.*

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

The parties also identify numerous proceedings before the Office and the Patent Trial and Appeal Board related to other applications or patents assigned to Patent Owner, some of which have been appealed to the Federal Circuit. *See* Pet. 4–5; Paper 5, 1–5; Paper 6, 1–5.

D. The '826 Patent (Ex. 1001)

The '826 Patent is directed to "increasing network communication speed for users, while lowering network congestion for content owners and ISPs [(Internet Service Providers)]." Ex. 1001, code (57), *see id.* at code (54), 1:23–25. The system utilizes network elements including an acceleration server, clients, agents, and peers. *See id.* at code (57), Fig. 3. Communication requests generated by applications are intercepted by the

client on the same machine. *See id.* at code (57), 13:4–8, Fig. 9, step 354. The IP address of the server in the communication request is transmitted to the acceleration server, which provides a list of agents to use for the IP address. *See id.* at code (57), 13:8–22, Fig. 9, step 356. The communication request is sent to the agents and one or more of the agents respond with a list of peers that have previously seen some or all of the content (after checking whether this data is still valid). *See id.* at code (57), 13:50–61, Fig. 9, step 360, Fig. 10, step 382. "The client then downloads the data from these peers in parts and in parallel, thereby speeding up the Web transfer, releasing congestion from the Web by fetching the information from multiple sources, and relieving traffic from Web servers by offloading the data transfers to nearby peers." *Id.* at code (57), 15:12–16:11, Fig. 11.

E. 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. A method for use with a web server that stores a first content identified by a first content identifier, and for use with a first client device that is addressed over the Internet using first Internet Protocol (IP) address, for use with a list of IP addresses stored in the first server, the method by the first server comprising:
> storing, operating, or using, a server operating system;
> receiving, from the first client device, the first content identifier;
> selecting, an IP address from the list according to a criterion;
> sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier;
> receiving, in response to the sending of the first content

identifier, the first content from the web server; and
    sending the received first content, or a part thereof, to the
first client device.

Ex. 1001, 19:16–33.

F. Asserted Challenges to Patentability and Asserted Prior Art

Petitioner asserts that claims 1–10, 12, 15–19, and 21–25 would have

been unpatentable based on the following grounds (Pet. 8–10):

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

II. ANALYSIS

A. Discretionary Denial of Institution

Institution of *inter partes* review is discretionary. *See Harmonic Inc.*

v. Avid Tech, Inc., 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is

permitted, but never compelled, to institute an IPR proceeding."); 35 U.S.C.

§ 314(a).

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[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284
   (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because the
   '826 Patent claims an effective filing date prior to the effective date of the
   applicable AIA amendment, we refer to the pre-AIA version of § 103.
[2] US 6,785,705 B1, issued Aug. 31, 2004 (Ex. 1003).
[3] Internet Engineering Task Force, Network Working Group, *Requirements
   for Internet Hosts—Communication Layers* (R. Braden ed., Request for
   Comments 1122, October 1989) (Ex. 1006).
[4] US 6,389,462 B1, issued May 14, 2002 (Ex. 1004).

1. Reissue Application

Patent Owner asserts that the Board should deny institution because

Reissue Application No. 18/603,037, which includes a Preliminary

Amendment to the claims of the '826 Patent, is co-pending. *See* Prelim.

Resp. 4. Patent Owner states that although the '826 Patent is in effect during

the pendency of the reissue proceeding, Patent Owner would be required to

surrender the patent upon issuance of a reissued patent. *Id.* Patent Owner

acknowledges that the reissue proceeding is in its early stages. *See id.*

Patent Owner asserts that the Preliminary Amendment narrows the scope of

claim 1, and distinguishes the prior art at issue in this proceeding by

clarifying the scope of the disputed claim terms "client device" and "server."

See Prelim. Resp. 4–5 (citing Ex. 2001, 4, 11).

> Patent Owner presents the following stipulation:

> if the Board exercises its discretion to deny institution in this IPR
> based on the copending reissue proceeding, then (1) Patent
> Owner will not withdraw the reissue application before issuance
> of a reissued patent and (2) Patent Owner will not assert the '826
> Patent in any litigation during the pendency of the reissue
> proceeding.

Id. at 4.

Patent Owner contends that instituting this *inter partes* review based

on the original claims of the '826 Patent would frustrate the Board's

objectives regarding efficiency because the amendments of the Preliminary

Amendment in the reissue proceeding would change the challenged original

claims of the '826 Patent, and any potential additional amendments will

further change and potentially cancel some of the original claims of the '826

Patent. *See* Prelim. Resp. 5. Patent Owner asserts that it would not be an

efficient use of resources to institute this *inter partes* review and burden

three judges in an *inter partes* review compared to completing the reissue proceeding with one examiner. *See id.* at 6. Patent Owner also points out that the Patent Office already reviewed the same references during the prosecution of the '826 Patent and the examiner in the reissue proceeding will re-review the same references and arguments presented in this Petition. *See id.* at 5–6.

We decline to exercise discretion to deny institution of *inter partes* review on the basis of the later-filed reissue application and Patent Owner's proffered stipulation. At this point in time, the progress and ultimate outcome of the reissue application is mere speculation as the reissue application is in the early stages of examination and will have to proceed through examination in much the same way as a patent application under original examination. *See* 35 U.S.C. § 251(c); 37 C.F.R. § 1.176(a); MPEP § 1440. Furthermore, the parties may seek to address any concerns they may have regarding efficiency and duplication of efforts by moving to suspend prosecution in the reissue application. *See* MPEP §§ 1442.01–1442.02.

2. Co-pending Federal Circuit Appeal

Patent Owner asserts that the claim construction issues raised in the Petition are currently on appeal before the Federal Circuit. *See* Prelim. Resp. 7. Patent Owner contends that Petitioner's claim construction is not correct, and further advocates its proposed claim construction for the terms "client device" and "server." *See id.* at 7–8. Patent Owner contends that "[i]t would not be efficient to institute this IPR based on the wrong claim constructions." *Id*. at 7. Patent Owner further contends that "[b]ecause the same claim construction[] issues are on appeal before the Federal Circuit, it

would not be efficient to institute this IPR as opposed to the reissue proceeding." *Id.* at 9.

We decline to exercise discretion to deny institution on the basis of the co-pending appeal before the Federal Circuit because Patent Owner's suggestion of a favorable finding on the claim construction issues is mere speculation.

3. 35 U.S.C. § 325(d) Same or Substantially the Same Prior Art or Arguments Previously Presented to the Office

In evaluating arguments under § 325(d), we use

> [a] two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) ("*Advanced Bionics*"); *see also Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) (listing factors to consider in evaluating the applicability of § 325(d)) ("*Becton, Dickinson*").

As set forth in *Advanced Bionics*, *Becton Dickinson* factors (a), (b), and (d) are considered in the evaluation of whether the same or substantially the same art or arguments were previously presented to the Office. *Advanced Bionics* at 10. *Becton, Dickinson* identifies these factors as (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; and (d) the extent of the

overlap between the arguments made during examination and the manner in which petitioner relies on the prior art. *Becton, Dickinson* at 17–18. "If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office." *Advanced Bionics* at 10. *Becton, Dickinson* identifies these factors as (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (e) whether Petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or argument. *Becton, Dickinson* at 17–18. Patent Owner contends that the Board should exercise discretion to deny institution under § 325(b) on the basis of the '826 Patent prosecution and examiner actions in the reexamination of a related patent, as well as on the basis of the prosecution of parent patents. We address Patent Owner's arguments in the following sections.

The '826 Patent Prosecution

Turning to the first part of the *Advanced Bionics* framework, particularly factor (a), Petitioner asserts that "Kocherlakota, Cohen, and RFC 1122 are among over 500 references submitted in IDSs during prosecution, but none were substantively discussed by the Examiner." Pet. 7 (citing Ex. 1007, 48–51, 104–115). Patent Owner concurs that the first part of the *Advanced Bionics* framework has been satisfied. *See* Prelim. Resp. 9. Because the same art was presented previously during the prosecution of

the '826 Patent, we conclude that the first part of the *Advanced Bionics*
framework is satisfied.

As to the second part of the *Advanced Bionics* framework, Petitioner
contends that "[t]he Examiner did not issue any rejections beyond a double-
patenting rejection over the [parent patents]." Pet. 7 (citing Ex. 1007, 104–
115). Petitioner asserts that, "as set forth [in the Petition], the Examiner
erred by allowing the claims over the Grounds [of unpatentability] in this
Petition, and the lack of analysis during prosecution weighs against
discretionary denial. *Id.* (citing *Advanced Bionics* at 10–11).

Patent Owner disagrees with Petitioner's contention that the Examiner
erred in allowing the claims of the '826 Patent. *See* Prelim. Resp. 9. Patent
Owner points out that "the withdrawal of rejections based on Cohen in the
reexamination proceeding of the related '511 Patent confirms that the
original examiner who reviewed and allowed the claims of the '826 Patent
over Cohen did not err." *Id.* at 11. Patent Owner further points out that the
reexamination of the '511 Patent is currently on appeal before the Board and
asserts that Patent Owner presents arguments as to why Kocherlakota does
not disclose or teach the claims of the '511 Patent. *See id.*

As explained in *Advanced Bionics*, factors (c), (e), and (f) of *Becton,
Dickinson* are used in the assessment of the second part of the *Advanced
Bionics* framework.

> Factor (c) focuses on the record developed by the Office in
> previously reviewing the art or arguments. It informs, therefore,
> the petitioner's showing under factors (e) and (f), which focus on
> the petitioner's evidence of previous Office error regardless of
> the context in which the same or substantially the same art or
> arguments were previously presented. For example, if the record
> of the Office's previous consideration of the art is not well

developed or silent, then a petitioner may show the Office erred
by overlooking something persuasive under factors (e) and (f).

Advanced Bionics at 10.

As recognized in *Advanced Bionics*, a showing of material error varies
depending on the degree to which the previously-presented art was
substantively addressed by the Office. *Advanced Bionics* at 10–11. Turning
to factor (e), as Petitioner notes, the record is silent as to how the Examiner
viewed the Cohen, Kocherlakota, and RFC 1122 references. We recognize
that it is difficult to characterize error in a silent record. In view of the silent
record in the '826 Patent, we find Petitioner's assertion that the Examiner
erred by allowing the claims over the grounds of unpatentability set forth in
the Petition serves as sufficient identification of error under factor (e). *See*
Pet. 7, 21–78. Moreover, as discussed below in detail in Sections II.E.
through II.H. and relevant to factor (f), based on the preliminary record
before us, including Petitioner's evidence, there is a reasonable likelihood
Petitioner would prevail based on the grounds of unpatentability in the
Petition, which further supports the assertion that the Office erred in
allowing the '826 Patent claims.

We also are also not swayed by Patent Owner's contentions that the
Office did not err in the prosecution of the '826 Patent based on examiner
actions in the reexamination of the '511 Patent. Although we appreciate that
the reexamination of the '511 Patent in view of the Cohen and Kocherlakota
references may relate to issues in this proceeding, we do not agree that
withdrawal of rejections based on Cohen in the '511 Patent reexamination
indicates that the Office did not err in allowing the claims of the '826 Patent.
First, Patent Owner's arguments based on the withdrawal of rejections based
on Cohen in the '511 reexamination do not address error in allowing the

claims of the '826 Patent over Kocherlakota alone, the combination of Kocherlakota and RFC 1122, and the combination of Cohen and RFC 1122. As noted by Patent Owner, the reexamination of the '511 Patent is still pending and on appeal before the Board, therefore, a final determination of unpatentability or allowance has not occurred. Thus, prosecution may be reopened, claims may be amended, and/or new rejections based on Cohen may be issued. Finally, as noted by Patent Owner, the rejections based on Kocherlakota remain pending and on appeal before the Board in the '511 Patent reexamination which undercuts Patent Owner's contentions that the Office did not err in allowing the claims of the '826 Patent.

Accordingly, we conclude that same art was presented previously during the '826 Patent prosecution and, under the second part of the *Advanced Bionics* framework, Petitioner has demonstrated that the Office erred in allowing the '826 Patent claims over the grounds of unpatentability in the Petition. Therefore, we conclude that the circumstances before us do not warrant the exercise of discretion to deny institution under § 325(d) on the basis of the same prior art presented previously to the Office during prosecution of the '826 Patent.

Prosecution of Parent Patents

Turning to the first part of the *Advanced Bionics* framework, Petitioner contends that the grounds of unpatentability in the Petition are not cumulative of the examination of the parent patents. *See* Pet. 7. Patent Owner disagrees and asserts that the arguments made by the Applicant and accepted by the Examiner during prosecution of the parent patents are directly relevant to the arguments made in the Preliminary Response over the Kocherlakota reference. *See* Prelim. Resp. 11. More specifically, Patent

Owner asserts that during prosecution of the parent '341 Patent, "[A]pplicant explained that Yu discloses a peer-to-peer system using intermediary client devices, while Barth is fetching information from additional servers." *Id.* at 11–12 (citing Ex. 1008, 124). According to Patent Owner, "Applicant clearly distinguished client devices and servers as different types of hardware components, and further distinguished the different architectures of the Yu and Barth references." *Id.* at 12 (quoting Ex. 1008, 125; citing Ex. 1008, 124). Patent Owner further contends that "[A]pplicant also explained that neither [Yu nor Barth] reference teaches a server performs the 'selecting' step." *Id.* (quoting Ex. 1008, 128; citing Ex. 2005 ¶ 35). Patent Owner contends that similar arguments were made over the combination of Yu and Barth during prosecution of the grandparent '628 Patent and over the combination of Yu and Kageyama during prosecution of the great-grandparent '374 Patent. *See id.* at 12–13 (citing Ex. 2003, 6; Ex. 2004, 7). Patent Owner asserts that the same examiner reviewed and allowed these patents. *See id.* at 11. Patent Owner contends that "[l]ike the Yu reference, the Kocherlakota reference at issue in this IPR does not disclose the 'selecting' is made in the alleged first server as required by claim 1." *Id.* at 13. According to Patent Owner,

> In Yu, the requesting client device receives a list of peer client devices and selects one of the peers to retrieve the requested content therefrom. . . . In Kocherlakota, the requesting client computer 11 will store session and permission information associated with each proxy server and the user of client computer 11 will enter the information into an applet that identifies which proxy servers and which features of the proxy servers are to be used for a particular URL.

Id. (citing Ex. 1003, 3:10–33, 3:66–4:4, 4:9–11, Fig. 2; Ex. 2005 ¶ 35). Patent Owner asserts, "the same arguments as to which component performs

the 'selecting' step were already evaluated and considered by the examiner during prosecution of the parent patents." *Id.*

Petitioner asserts that the Petition's grounds of unpatentability are not cumulative of the examination of the parent patents because the grounds do not rely on Yu or Barth and each of Kocherlakota and Cohen disclose the mapped "first content" and performing the "selecting" step. *See* Pet. 8 (citing Ex. 1008, 124–138). Petitioner further contends that the fact that the central reexamination unit has determined that each of Kocherlakota and Cohen raise a substantial new question of patentability in the reexamination of the '511 Patent confirm that the Petition's grounds of unpatentability are not cumulative over prior examination. *See id.*

Applying the first part of the *Advanced Bionics* framework, *Becton Dickinson* factors (a), (b), and (d) are considered in the evaluation of whether the same or substantially the same art or arguments were previously presented to the Office. *Advanced Bionics* at 10. Patent Owner's arguments focus on the similarities or overlap between its argument that Yu does not disclose "selecting, by the first server" as recited in dependent claim 6 of the '341 Patent (*see* Ex. 1008, 128) and its Preliminary Response argument (*see id.* at 17) that Kocherlakota does not disclose a first server performing the selecting step, which is premised on a requirement that the first server perform a decision and cannot include the assistance of an applet having a predefined selection. *See* Prelim. Resp. 11–13. Patent Owner's arguments do not otherwise address the similarities and material differences between Yu and Kocherlakota, and the cumulative nature of Kocherlakota compared to Yu, as guided by factors (a) and (b), of the first part of the *Advanced Bionics* framework. *See id.* Patent Owner further does not identify any overlap in arguments presented during prosecution of the parent patents and

arguments presented in the Petition, as guided by factor (d). *See id.* Finally, Patent Owner's arguments do not address the Cohen and RFC 1122 references, which constitute grounds of unpatentability in the Petition apart from the grounds of unpatentability based on Kocherlakota. *See id.*

Accordingly, under the first part of the *Advanced Bionics* framework, we conclude that the same or substantially the same art or arguments were not presented previously to the Office during prosecution of the parent patents (i.e., the '341 Patent, '628 Patent, and '374 Patent). Therefore, we conclude that the circumstances before us do not warrant the exercise of discretion to deny institution under § 325(d) on the basis of art or arguments presented during the prosecution of the parent patents (i.e., the '341 Patent, '628 Patent, and '374 Patent).

Summary

The circumstances before us do not warrant the exercise of discretion to deny institution under § 325(d) on the basis of art or arguments presented during prosecution of the '826 Patent and the parent patents.

B. 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* at 1312.

Petitioner offers claim constructions for the following terms and phrases: "client device," "first server," "server operating system," "selecting,

Pet. 17–19). Petitioner asserts that the plain and ordinary meaning of a server operating system would have been understood to be a general-purpose server operating system such as, UNIX, LINUX, WINDOWS, etc. *See* Pet. 20 (quoting Ex. 1022, 8:53–55; citing Ex. 1002 ¶ 61).

Patent Owner disagrees and asserts that a person of ordinary skill in the art "would have understood that the term 'server operating system' has its plain an ordinary meaning" and "that a server operating system runs on a server, a type of hardware." Prelim. Resp. 21. Patent Owner further contends that "[a]n operating system is the software that manages the hardware and controls the operation of programs." *Id.* (quoting Ex. 1001, 6:33–37; Ex. 2011; Ex. 2012).

For the purpose of institution, we decline to adopt Patent Owner's construction for "server operating system." We do not agree with Patent Owner's arguments that a server operating system is limited to running on server hardware because it is attorney argument and is not supported sufficiently by the evidence of record. *See* Ex. 1001, 6:33–37; Ex. 2011; Ex. 2012; *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (unsworn attorney argument is not evidence). At this stage of the proceeding, we agree that a server operating system is role-based. For the purpose of institution, we adopt Petitioner's construction for "server operating system" as an operating system capable of operating in the role of a server.

As demonstrated in the analysis below, at this stage of the proceeding, we need not explicitly construe "selecting, an IP address," "sending the selected IP addresses to the first client device," and any additional claim terms and phrases. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe

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))).

C. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art

as of October 8, 2009[] —the '826 Patent's earliest claimed priority date—would have had at least a bachelor's degree in computer science or related field (or equivalent experience), and at least two years' experience working with and programming networked computer systems. . . . The prior art and the '826 Patent also evidence this level of ordinary skill. Here, the background technology described in Section VII [of the Petition] and the prior art described in Section IX [of the Petition] demonstrate that a [person or of ordinary skill in the art] would have been familiar with the underlying principles of Web, Internet, network communication, data transfer, and content sharing across networks, including the HTTP and TCP/IP protocols.

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

Patent Owner does not dispute Petitioner's proposed definition of a person of ordinary skill in the art for the purpose of institution. *See* Prelim. Resp. 15 n.10.

For the purpose of institution, we adopt Petitioner's definition of a person of ordinary skill in the art because it is consistent with the level of skill reflected by the '826 Patent Specification and the asserted prior art.

D. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter

pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) if in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).[5]

E. Challenge to Claims 1–5, 10, 12, 15–19, and 21–25 over Kocherlakota

1. Overview of Kocherlakota (Ex. 1003)

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

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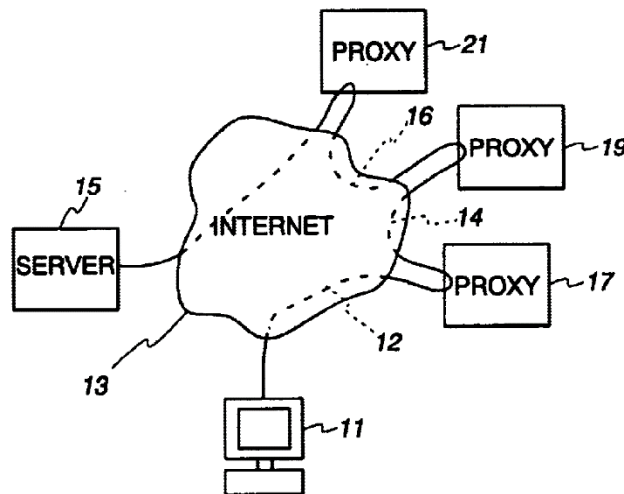
Figure 1 depicts client computer 11 connected to web server 15 through chained proxies 17, 19, 21. *See* Ex. 1003, 2:39–40, 2:54–3:9. Client computer 11 sends a URL to first proxy server 17, a session is established between client computer 11 and first proxy server 17, and first proxy server 17 returns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

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[5] At this stage, the parties do not present evidence or arguments related to secondary considerations.

id. at 3:10–26; Fig. 3, steps 101, 103. The applet presents a window on client computer 11. *See id.* at 3:26–28, Fig. 3, step 103.

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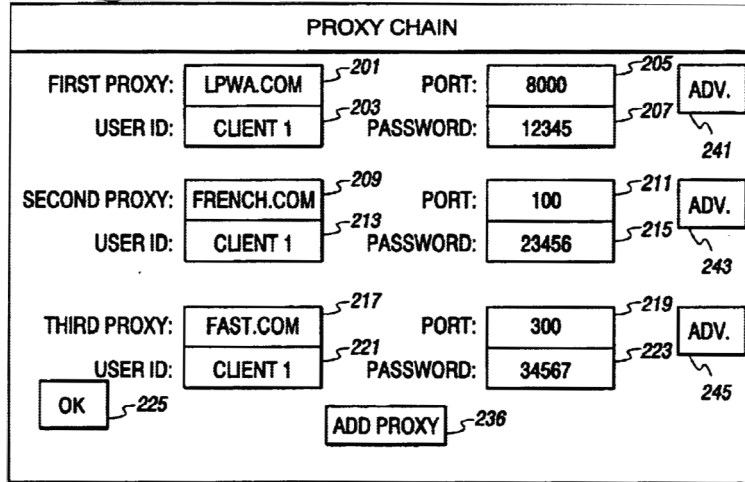
Figure 2 depicts an applet window that presents a number of information lines into which the client can enter identities of up to three proxy servers, port numbers, user names, etc. *See* Ex. 1003, 2:41–42, 3:28–36. Applet window includes advanced feature buttons 241, 243, 245 for each proxy. *See id.*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

Figure 7 of Kocherlakota is reproduced below.

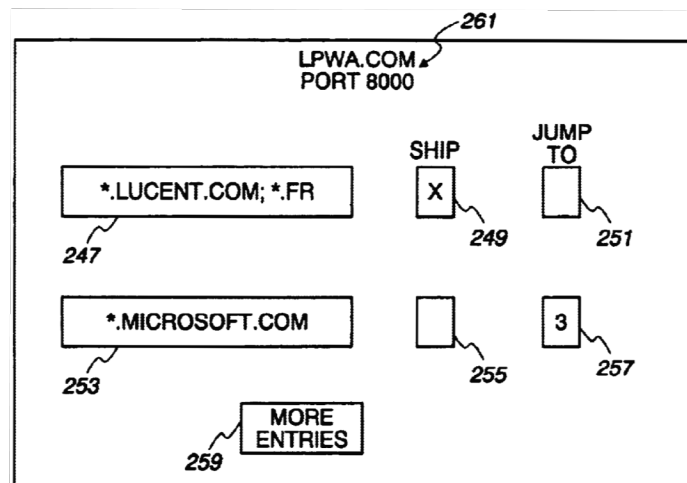Figure 7 depicts advanced feature window for the first proxy when advanced feature button 241 is clicked. *See* Ex. 1003, 4:63–5:5. Text window 247 is used to enter URLs for which first proxy 17 is to be skipped or a "jump to" command is to be entered. *See id.* at 5:8–10. URLs are typed into text window 247 and either the skip box 249 is checked or a "jump to" number is entered in text box 251. *See id.* at 5:11–13. Text windows 253 and 257 and check box 255 provide the same set of advanced features for another URL. *See id.* at 5:13–15. The advanced features allow the user to define which proxy servers are employed for predetermined URLs. *See id.* at 5:24–26.

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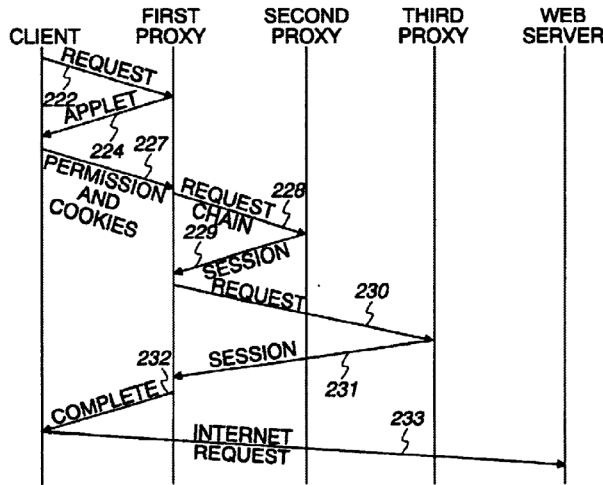
Figure 6 depicts a message sequence among clients, web proxies, and a web server to establish and use chained proxies to access the internet. *See* Ex. 1003, 2:50, 4:36–38. Request 222 for proxy use is sent from client computer 11 to first proxy 17. *See id.* at 4:39–40. First proxy 17 returns applet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

proxy 19 which returns message 229 to first proxy 17 signifying session

establishment. *See id.* at 4:45–48. First proxy 17 sends message 230 to

third proxy 21 requesting a session with third proxy 21 which returns session

message 231 to first proxy 17. *See id.* at 4:48–51. First proxy 17

signifies 232 to client computer 11 that the chain is complete. *See id.*

at 4:51–52. Client computer 11 may access web server 15 via the chain of

proxies as represented by message 233. *See id.* at 4:52–54.

2. Analysis of Claim 1

For the reasons that follow, we are persuaded that Petitioner

establishes sufficiently that, for the purpose of institution, Kocherlakota

teaches or suggests all of the limitations recited in claim 1.

a. Preamble

Petitioner contends that Kocherlakota teaches:

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

See Pet. 27 (emphasis omitted) (citing Ex. 1002 ¶ 98). More specifically,

Petitioner asserts:

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

Id. (citing Ex. 1002 ¶¶ 98, 99, 103); *see* Pet. 28 (asserting that a person of

ordinary skill in the art would understand that client 11 is addressed over the

Internet using an IP address, citing Ex. 1002 ¶ 103). Petitioner contends that client computer 11 meets the construction of "first client device" because it is a device that communicates over the Internet and is operating in the role of a client by establishing a connection with proxy 17 to make requests. *See* Pet. 27–28 (quoting Ex. 1003, 2:54–58, 4:29–31; citing Ex. 1002 ¶ 100; Ex. 1003, 1:43–45, 2:4–7, 2:30–32; Pet. 17–19). Petitioner further asserts that proxy server 17 meets the construction of "first server" because it is a device that is operating in the role of a server by accepting a connection from client computer 11 to service requests (URLs) by sending content from web server in response and because it is not the same physical device as client computer 11. *See* Pet. 28 (citing Ex. 1002 ¶¶ 101; Ex. 1003, 5:3–24; Pet. 17–19).

Patent Owner does not address Petitioner's showing for the preamble. *See* Prelim. Resp. 17–18. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this stage of the proceeding, we need not determine whether the preamble is limiting because we determine Petitioner shows sufficiently for the purpose of institution that the preamble is satisfied by Kocherlakota.

> *b. the method by the first server comprising: storing, operating, or using a server operating system;*

Petitioner contends that Kocherlakota discloses or renders obvious "the method by the first server comprising: storing, operating, or using a server operating system; receiving from the first client device, the first content identifier." *See* Pet. 29 (citing Ex. 1002 ¶¶ 104–106). Petitioner asserts that a person of ordinary skill in the art "would understand that computers, such as proxy 17, use an operating system and it would be, at a

minimum, obvious to use a server operating system to 'provide services' to clients." Pet. 29 (citing Ex. 1002 ¶ 105).

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 17–18. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests this limitation of claim 1.

> *c. the method by the first server comprising: . . .*
> *receiving from the first client device, the first content identifier;*

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

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 17–18. Nevertheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests this limitation of claim 1.

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

Petitioner asserts that Kocherlakota discloses or renders obvious "selecting, an IP address from the list according to a criterion" (selecting limitation). *See* Pet. 31 (citing Ex. 1002 ¶ 110). According to Petitioner, "proxy 17 (the claimed 'first server') selects the IP address of either proxy 19 or 21 from the list of those IP addresses to route the URL through the proxy chain." *Id.* (citing Ex. 1002 ¶ 103; Ex. 1003, 5:10–23). Petitioner contends that the selection is according to a criterion because the selection of the URL is based on analysis of the URL. *See id.* (citing Ex. 1002 ¶¶ 112–113). Petitioner asserts that proxy 17 performs each of the selecting steps by applying the criteria shown in Figure 7. *See id.* As an example, Petitioner explains that when proxy 17 receives a URL not matching the criteria in either text window 247 or 253 (e.g., www.uspto.gov), proxy 17 will not "skip" or "jump to" any server in the proxy chain because the URL does not match the criteria and will select the IP address of the next proxy in the chain so that the request passes via the chained proxies 17, 19, 21. *See* Pet. 31–32 (citing Ex. 1002 ¶ 112; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7). According to Petitioner, "proxy 17 will thus select the IP address of proxy 19 as the address used to forward the URL." Pet. 32 (citing Ex. 1002 ¶ 112). Petitioner further explains that when proxy 17 receives a URL matching the criteria in text window 247 (e.g., www.lucent.com), but not matching the criteria of text window 253, proxy 17 will "skip" the function of proxy 17, but will not "jump" over any proxy server in the proxy chain because the URL does not match the "jump" criteria. *See id.* (citing Ex. 1002 ¶ 113; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7). According to Petitioner, proxy 17 "will therefore select the IP address of proxy 19 so that

the request passes 'via the chained proxies 17, 19, and 21.'" *Id.* (citing Ex. 1002 ¶ 113; Ex. 1003, 4:29–31, 5:10–23, Figs. 6–7).

Patent Owner contends that Kocherlakota does not teach the selecting step because proxy server 17 does not perform any decision as to which proxy or proxy features are to be used. *See* Prelim. Resp. 17; Ex. 1003, Figs. 2, 6. Patent Owner asserts that Kocherlakota's proxy server 17 merely applies the applet received from the client 11, which includes a predefined selection. *See id.*

At this stage of the proceeding, we do not agree with Patent Owner's arguments because they are not commensurate in scope with the limitations of claim 1. Claim 1 does not recite or otherwise require the first server to independently select an IP address from the group. The scope of claim 1 also does not preclude the first server from making a selection on the basis of a predefined correlation of a specific IP address corresponding to a specific criterion. Similarly, the scope of claim 1 does not preclude the first server from using an applet or other software for assisting the first server in making a selection of an IP address from the list. Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests this limitation of claim 1.

> *e. the method by the first server comprising: . . . sending, in response to the receiving of the first content identifier, using the selected IP address, the first content identifier;*

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

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

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 17–18. Nevertheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests this limitation of claim 1.

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

Petitioner contends that Kocherlakota discloses or renders obvious "receiving, in response to the sending of the first content identifier, the first content from the first web server; and sending the received first content, or part thereof, to the first client device," as recited in claim 1. *See* Pet. 34

(citing Ex. 1002 ¶ 118), 35 (citing Ex. 1002 ¶ 122). Petitioner asserts that proxy 17 forwards the first content identifier (i.e., URL) along the proxy chain to be forwarded to the web server corresponding to the first content identifier. *See* Pet. 34. According to Petitioner, a person of ordinary skill in the art "would understand that the function of a proxy in the proxy chain is both to send URLs to web servers, as well as receive responses and return them." *Id.* (citing Ex. 1002 ¶ 119). Petitioner asserts that Kocherlakota describes client computer 11 obtaining access to web server 15 via three web proxies 17, 19 and 21, and proxy 19 providing translations of identified files from the web server. *See id.* (citing Ex. 1002 ¶ 119; Ex. 1003, 1:12–17, 1:28–31, 3:9–11, 4:29–35). Petitioner also contends that Kocherlakota describes web server 15 as a data file provider and that after the establishment of the proxy sessions, the client can surf the web through the established chain of proxy servers. *See id.* (quoting Ex. 1003, 2:58–61; citing Ex. 1002 ¶ 120; Ex. 1003, 2:30–32). Petitioner further asserts that proxy 17 receives the web page corresponding to the first content identifier in response to sending of the first URL (i.e., first content identifier) on the basis that web server returns the web page corresponding to the first URL to proxy 21, proxy 21 forwards the web page to proxy 19, and proxy 19 forwards the web page to proxy 17. *See* Pet. 35 (citing Ex. 1002 ¶ 121; Ex. 1003, 2:30–32, 2:58–61, 4:29–35). Petitioner further contends that "[i]n accordance with its function as a proxy and providing client computer 11 'access to web server 15,' proxy 17 sends the received first content to client computer 11 (the claimed 'first client device')." *Id.* (citing Ex. 1002 ¶ 122).

Patent Owner contends that Petitioner does not consistently apply its role-based constructions to the components of Kocherlakota. *See* Prelim. Resp. 18. More specifically, Patent Owner asserts that during the

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"receiving" step, proxy server 17 does not meet Petitioner's role-based construction for "first server" because proxy server 17 is not a device operating in the role of a server. *See id.*

At this stage of the proceeding, we do not agree with Patent Owner's arguments because the plain language of claim 1 does not recite or require the first server to operate in a role of a server during each recited step 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.

Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests this limitation of claim 1.

g. Summary

For all of the foregoing reasons, for the purpose of institution and based on the record before us, Petitioner establishes sufficiently that the subject matter of claim 1 would have been obvious over Kocherlakota.

3. Analysis of Dependent Claims 2–5, 10, 12, 15–19, and 21–25

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

Patent Owner asserts that Kocherlakota does not disclose or teach that proxy servers 19 and 21 correspond to the first and second client devices recited in the dependent claims because proxy servers 19 and 21 are servers. *See* Prelim. Resp. 19. According to Patent Owner,

> [a]ll of proxy servers 17, 19, and 21 are intermediaries and toggle client/server roles when sending requests/receiving response (i.e., client role) and receiving requests sending responses (i.e., server role). Consistent application of the logic the petitioner applied to proxy server 17 would mean that proxy servers 19 and 21 are both servers.

Id. (citing Pet. 28).

At this stage of the proceeding, we do not agree with Patent Owner's arguments because the plain language of the claims does not recite or require the first and second client devices to operate in a role of a client during each recited step of the claims. The claims also do not preclude the first and second client devices from operating in a role of a server for some of the limitations of the claims. Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Kocherlakota discloses or suggests these limitations of dependent claims 2–5, 10, 12, 15–19, and 21–25.

For the purpose of institution and based on the record before us, including the reasons explained above addressing claim 1, Petitioner establishes sufficiently that the subject matter of dependent claims 2–5, 10, 12, 15–19, and 21–25 would have been obvious over Kocherlakota.

4. Summary

For all of the foregoing reasons and based on the record before us, we determine there is a reasonable likelihood Petitioner would prevail in showing that claims 1–5, 10, 12, 15–19, and 21–25 are unpatentable under 35 U.S.C. § 103 over Kocherlakota.

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

1. Overview of RFC 1122 (Ex. 1006)

RFC 1122 is titled "Requirements for Internet Hosts – Communication Layers." Ex. 1006, 1. RFC 1122 discusses specific issues with transmission control protocol (TCP), including TCP Keep-Alives. *See id.* at 101–102. "A 'keep-alive' mechanism periodically probes the other end of a connection when the connection is otherwise idle, even when there is no data to be sent." *Id.* at 102. RFC 1122 discloses that the TCP specification does not include the keep-alive mechanism due to some disadvantages, but some TCP implementations have included a keep-alive mechanism. *See id.* RFC 1122 further discloses that "[a] TCP keep alive mechanism should only be invoked in server applications that might otherwise hang indefinitely and consume resources unnecessarily if a client crashes or aborts a connection during a network failure." *Id.*

2. Analysis

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

'keep alive' message comprises periodically sending by the first server the 'keep alive' message to the second client devices." *Id.* at 20:1–4.

Petitioner asserts that the subject matter of dependent claims 6–9 would have been obvious to a person of ordinary skill in the art based on the teachings of Kocherlakota and RFC 1122. *See* Pet. 47–53 (citing Ex. 1002 ¶¶ 152–162). As to claim 6, Petitioner asserts that, based on the teachings of Kocherlakota as modified by RFC 1122, "proxy 17 (the claimed 'first server') sends keep alive messages to proxies 19 and 21 (the claimed 'second client devices') and waits for response[s] from each." Pet. 50 (citing Ex. 1002 ¶¶ 157–158). Regarding claim 7, Petitioner asserts that, based on the teachings of Kocherlakota as modified by RFC 1122, "[i]f the proxies 19 and/or 21 (the claimed 'second client device') are live, then proxy 17 will receive the acknowledgment (the claimed 'response to the keep alive message') and determine the connection is available." Pet. 51 (citing Ex. 1002 ¶ 159). As to claim 8, Petitioner asserts that "it would have been obvious to remove the IP address of a non-responsive client device from the list of IP addresses of device under active session." Pet. 52–53 (citing Ex. 1002 ¶ 161); *see* Pet. 51–52 (citing Ex. 1002 ¶ 159). Regarding claim 9, Petitioner asserts that, based on the combined teachings of Kocherlakota and RFC 1122, proxy 17 periodically sends "keep alive" messages to proxies 19 and 21. *See* Pet. 49–50 (citing Ex. 1002 ¶ 155), 53 (citing Ex. 1002 ¶ 162).

For the purpose of institution and based on Petitioner's cited support to Kocherlakota, RFC 1122, and Dr. Olivier's testimony (Ex. 1002), we are persuaded Petitioner sets forth sufficient articulated reasoning with rational underpinning to support the conclusion that it would have been obvious to one of ordinary skill in the art "to use the TCP keep-alive functionality of

RFC 1122 when maintaining [the] TCP sessions [] disclosed by Kocherlakota." Pet. 48 (citing Ex. 1002 ¶ 152); *see 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 ¶¶ 152–153). Petitioner asserts that TCP keep-alives help detect when a client crashes or aborts a connection during a network failure and prevents server applications from indefinite hanging and unnecessary resource consumption. *See id.* (quoting Ex. 1006, 102; citing Ex. 1002 ¶ 153). Petitioner asserts that, in Kocherlakota's system, following the establishment of sessions between proxy 17 and the client computer 11, proxy 19 and/or proxy 21, one of client computer 11, proxy 19, or proxy 21 could crash. *See id.* (citing Ex. 1002 ¶ 153; Pet. 21–27, 47–48). According to Petitioner, "without TCP keep-alives, client computer 11, proxy 19, or proxy 21 would unnecessarily expend resources keeping the TCP connection open." Pet. 48–49 (citing Ex. 1002 ¶ 153).

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

At this stage of the proceeding, aside from the arguments highlighted above in Section II.E.3. that Kocherlakota does not disclose or suggest

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"client devices" recited in the dependent claims, Patent Owner does not specifically address Petitioner's showing addressing the limitations of dependent claims 6–9. *See* Prelim. Resp. 19. For the same reasons as those explained above in Section II.E.3., at this stage of the proceeding we do not agree with Patent Owner's argument, and determine Petitioner shows sufficiently that Kocherlakota and RFC 1122 discloses or suggests the limitations of dependent claims 6–9.

For all of the foregoing reasons, including the reasons explained above addressing claim 1, for the purpose of institution and based on the record before us, Petitioner establishes sufficiently that the subject matter of claims 6–9 would have been obvious over Kocherlakota and RFC 1122. Accordingly, there is a reasonable likelihood Petitioner would prevail in showing that claims 6–9 are unpatentable under 35 U.S.C. § 103 over Kocherlakota and RFC 1122.

G. Challenge to Claims 1–6, 10, 12, 15–19, and 21–25 over Cohen
1. Overview of Cohen (Ex. 1004)

Cohen is directed to a method and apparatus for transparently intercepting client web requests and redirecting them to proxy caches. *See* Ex. 1004, 1:6–10.
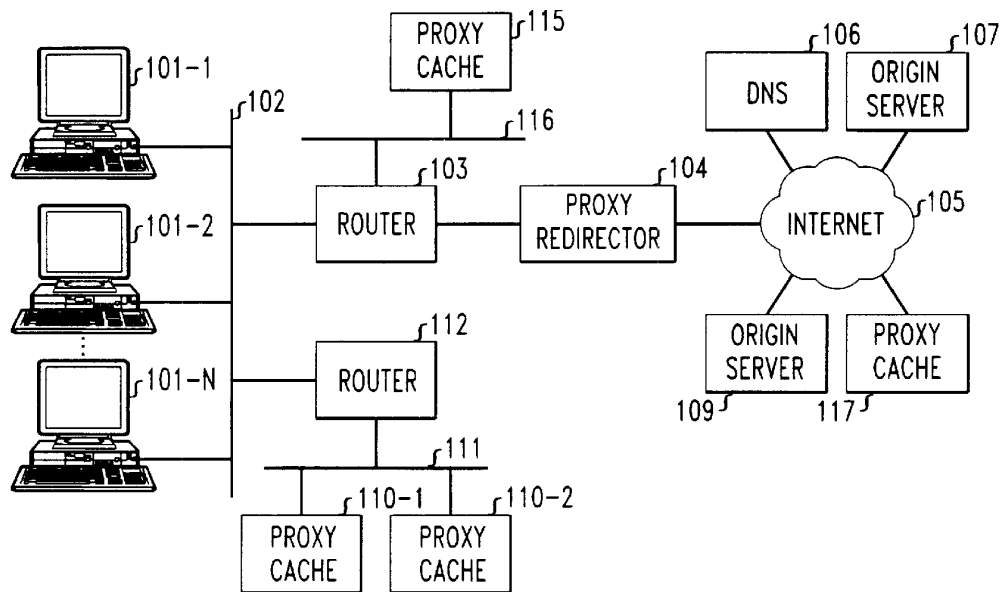
Figure 1 of Cohen is reproduced below.

Figure 1 depicts a block diagram of a network that includes a plurality of clients 101-1, 101-2 . . . 101-N connected to local area network (LAN) 102 which is connected through router 103 to proxy redirector 104 which interfaces with Internet 105. *See* Ex. 1004, 6:7–14, 6:23–28. All requests from clients 101-1, 101-2 . . . 101-N connected to LAN 102 for objects stored on servers connected to Internet 105 traverse proxy redirector 104 onto Internet 105. *See id.* at 6:31–34. All packets directed to any of the client's 101-1, 101-2 . . . 101-N from any server connected to Internet 105 pass through proxy redirector 104. *See id.* at 6:44–46. Proxy cache 110-1 is connected to LAN 111 which is connected to LAN 102 through router 112. *See id.* at 7:36–38. Proxy cache 115 is connected on LAN 116 through router 103. *See id.* at 7:38–40. Other proxy caches can be located anywhere on LANs 102, 111, or 116 or another LAN connected to Internet 105 such as proxy cache 117. *See id.* at 7:40–42.

Proxy redirector 104 transparently redirects an HTTP connection that is directed to origin server 107 to proxy cache 110-1 by translating the

destination address of packets directed to origin server 107 to the address of the proxy cache 110-1. *See* Ex. 1004, code (57). During a handshaking procedure, a TCP connection is transparently established between client 101-1 and proxy cache 110-1. *See id.* at code (57), 7:12–17, 8:59–6:18. When client 101-1 transmits a GET request to origin server 107 that specifies the complete address of an object at origin server 107 that it wants a copy of, proxy redirector 104 modifies the complete address specified in the GET request before it is sent to proxy cache 110-1. *See id.* at code (57), 9:19–23. The IP address of origin server 107 found in the destination field in the IP header of the one or more packets from client 101-1 containing the GET request is added by proxy redirector 104 as a prefix to the complete URL in the GET request to form an absolute URL. *See id.* at code (57), 9:28–10:5, 10:28–31, 11:15–19, Table 1. Proxy cache 110-1 determines from that absolute URL whether it has the requested object stored in its cache. *See id.* at code (57). If proxy cache 110-1 has the object stored, it sends the object back to proxy redirector 104, which masquerades those packets as coming from the origin server by translating their destination address to the address of client 101-1 and their source address to that of origin server 107. *See id.* at code (57), 7:18–22. If proxy cache 110-1 does not have the requested object, a separate TCP connection is established between proxy cache 110-1 and origin server 107 from where the object is retrieved and then forwarded over the TCP connection between client 101-1 and the proxy cache 110-1. *See id.* at code (57), 7:27–35.

2. Analysis of Claim 1

For the reasons that follow, we are persuaded that Petitioner

establishes sufficiently that, for the purpose of institution, Cohen teaches or

suggests all of the limitations recited in claim 1.

a. Preamble

Petitioner contends that Cohen discloses or renders obvious the

preamble. *See* Pet. 56 (citing Ex. 1002 ¶ 163). More specifically, Petitioner

asserts,

> Cohen discloses a method for use with an origin server that
> stores a web page (the claimed "first content") identified by a
> first URL (the claimed "first content identifier") and a client
> 101-1 (the claimed "first client device") that is addressed over
> the Internet using an IP address (the claimed "first IP address").
> . . . The client 101-1 can retrieve a web page through proxy
> redirector 104 (the claimed "first server") which stores a list of
> IPR address associated with other devices.

Id. (citing Ex. 1002 ¶¶ 163–167). Petitioner contends that client 101 meets

the construction of "first client device" because it is a device that

communicates over a network, and is operating in the role of a client by

making requests to proxy redirector 104. *See id.* (quoting Ex. 1004,

8:55–58; citing Ex. 1002 ¶ 168). Petitioner asserts that proxy redirector 104

meets the construction of "first server" because it is a device that is

operating in the role of a server by receiving client 101-1's web requests and

sending responses back to client 101-1 and because it is not the same

physical device as client 101-1. *See* Pet. 57 (citing Ex. 1002 ¶ 169;

Ex. 1004, 8:55–58; Pet. 53–55).

Petitioner further contends that "[p]roxy redirector 104 receives a web

request from a 'client 101-1' seeking content from a target web server and

'selects one of the available proxy caches to which to forward client requests

based on a metric such as least-loaded or round-robin, [or] based on IP header information such as the origin server IP address.'" Pet. 57 (quoting Ex. 1004, 7:36–48; citing Ex. 1002 ¶ 167). Petitioner asserts that, in order to select one of the available proxy caches, proxy redirector 104 must store a list of IP addresses associated each proxy cache, which are used to identify proxies and enable proxy redirector 104 to choose an available proxy cache. *See id.* (citing Ex. 1002 ¶ 167; Ex. 1004, 7:38–48, 8:29–31, 9:3).

Patent Owner does not address Petitioner's showing for the preamble. *See* Prelim. Resp. 20–24. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently for the purpose of institution that the preamble is satisfied by Cohen.

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

Petitioner contends that Cohen discloses or renders obvious "the method by the first server comprising: storing, operating, or using a server operating system." *See* Pet. 58–59 (citing Ex. 1002 ¶ 170).

Petitioner asserts that Cohen discloses that the proxy redirector ("first server") may be a Level 4 switch that also may be combined into the same unit as a router. *See* Pet. 58 (citing Ex. 1004, 6:23–31). Petitioner asserts that Cohen discloses the proxy redirector 104 includes a programmable network element that in the preferred embodiment runs on a Linux machine. *See id.* (citing Ex. 1004, 7:49–55, Fig. 2); *see also* Pet. 58–59 (similar argument regarding Cohen's disclosure by incorporation by reference). According to Petitioner, a person of ordinary skill in the art "would understand Linux to be a well-known server operating system." Pet. 58 (citing Ex. 1002 ¶ 170).

Patent Owner contends that Cohen does not disclose or teach the "first server" because Cohen expressly states that proxy redirector 104 is an L4 switch. *See* Prelim. Resp. 20 (citing Ex. 1004, 5:12–14, 6:26–28). Patent Owner also points out that Cohen discloses the proxy redirector 104 may be combined into the same unit as a router. *See id.* (citing Ex. 1004, 6:23–31). According to Patent Owner, a person of ordinary skill in the art "would have understood that neither a switch nor a router is a server in the context of the '826 Patent." *Id.* Patent Owner directs attention to Dr. Olivier's testimony in another *inter partes* review, and contends that the testimony that a server "couldn't be a wire . . . or router" contradicts Petitioner's arguments. *See id.* at 20–21 (quoting Ex. 2006, 49:21–50:11, 51:11–52:9).

At this stage of the proceeding, we do not agree with Patent Owner's arguments because the plain language of claim 1 does not preclude the first server from being combined with a router. Moreover, Cohen merely discloses that the proxy redirector **may** be combined into the same unit as a router. Finally, we do not agree with Patent Owner's argument that a person of ordinary skill in the art would have understood that a switch is not a server or router because it is unsupported attorney argument. *See Gemtron*, 572 F.3d at 1371.

Patent Owner also argues that Cohen does not disclose or teach that the proxy redirector stores, operates, or uses a server operating system because the proxy redirector is not a server. *See* Prelim. Resp. 21–22. At this stage of the proceeding, we do not agree with Patent Owner's arguments because, as explained above in Section II.B., we do not adopt Patent Owner's proposed hardware-based construction for the term "server operating system."

Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests this limitation of claim 1.

> *c. the method by the first server comprising: . . .*
> *receiving from the first client device, the first content identifier;*

Petitioner contends that Cohen discloses or renders obvious "receiving from the first client device, the first content identifier." *See* Pet. 59–60 (citing Ex. 1002 ¶¶ 163, 171–172, 198). Petitioner asserts that

> Cohen discloses that the client sends "one or more packets to the origin server [via the proxy redirector 104], which packets include a GET request. The GET request includes a complete URL, which identifies to that server the specific object within the origin server site that the client wants a copy of."

Pet. 59 (citing Ex. 1004, 2:15–20). According to Petitioner, "proxy redirector 104 (the claimed 'first server') receives the GET request from client 101-1 (the claimed 'first client device') with the included complete URL '/a/yak/yahoo mail/promo1.gif HTTP/1.0' (the claimed 'first content identifier')." Pet. 59–60 (reproducing Ex. 1004, Table 1 (with annotations); citing Ex. 1002 ¶¶ 163, 172, 198; Ex. 1004, 2:15–20, 9:19–23).

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 20–24. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests this limitation of claim 1.

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

Petitioner asserts that Cohen discloses or renders obvious "selecting, an IP address from the list according to a criterion" (selecting limitation). *See* Pet. 60–61 (citing Ex. 1002 ¶ 173). According to Petitioner, "proxy redirector 104 (the claimed 'first server') selects the IP address 'daddy=135.104.25.31' of proxy cache 110-1 from the list of IP addresses associated with at least two or more proxies (i.e., proxies 110-1, 110-2, 115, and/or 117) to forward the URL to the selected proxy." *Id.* (reproducing Ex. 1004, Table 1 (with annotations); citing Ex. 1002 ¶ 173; Ex. 1004, 11:12–15). Petitioner further asserts that proxy redirector 104 uses a stored criterion when it selects one of the available proxy caches. *See* Pet. 61–62 (quoting Ex. 1004, 7:36–48; citing Ex. 1002 ¶ 174).

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 20–24. Nevertheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests this limitation of claim 1.

> *e. the method by the first server comprising: . . . sending, in response to*
> *the receiving of the first content identifier, using the selected IP address,*
> *the first content identifier;*

Petitioner contends that Cohen discloses or renders obvious "sending, in response to the selecting, the first URL to the first web server using the selected IP address." *See* Pet. 62 (citing Ex. 1002 ¶ 175). According to Petitioner, "proxy redirector 104 selects the IP address of proxy cache 110-1 and forwards the URL to proxy cache 110-1." *Id.* (quoting Ex. 1004,

11:12–15; citing Ex. 1002 ¶ 175; Ex. 1004, 7:36–48); *see id.* (citing Ex. 1002 ¶ 177; Ex. 1004, 7:43–48). Petitioner asserts that a person of ordinary skill in the art "would understand that when proxy redirector sends the URL to the first web server through to proxy cache 110-1, as an intermediary, proxy redirector uses the IP address associated with proxy cache 110-1 (the claimed "selected IP address") as the destination IP address." *Id.* (citing Ex. 1002 ¶ 176).

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* Prelim. Resp. 20–24. Nevertheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. At this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests this limitation of claim 1.

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

Petitioner contends that Cohen discloses or renders obvious "receiving, in response to the sending of the first content identifier, the first content from the first web server; and sending the received first content, or part thereof, to the first client device." *See* Pet. 63 (citing Ex. 1002 ¶¶ 178–180). Petitioner asserts that packets from client 101-1 are transparently redirected by proxy redirector 104 to a proxy cache and responsive packets from the proxy cache are set to proxy redirector 104 where they are redirected to client 101-1. *See id.* (quoting Ex. 1004, 8:55–58; citing Ex. 1002 ¶ 177; Ex. 1004, 6:39–46, 10:23–26, 12:18–20, 16:28–41).

Patent Owner contends that Petitioner does not consistently apply its role-based constructions to the components of Cohen. *See* Prelim. Resp. 23–24. More specifically, Patent Owner contends that during the "receiving" step, proxy redirector 104 does not meet Petitioner's role-based construction for "first server" because proxy redirector is not a device operating in the role of a server. *See id.*

At this stage of the proceeding, we do not agree with Patent Owner's arguments because the plain language of claim 1 does not recite or require the first server to operate in a role of a server during each recited step of claim 1. 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.

Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests this limitation of claim 1.

h. Summary

For all of the foregoing reasons, for the purpose of institution and based on the record before us, Petitioner establishes sufficiently that the subject matter of claim 1 would have been obvious over Cohen.

3. Analysis of Dependent Claims 2–6, 10, 12, 15–19, and 21–25

Claims 2–6, 10, 12, 15–19, and 21–25 directly or indirectly depend from claim 1. *See* Ex. 1001, 19:34–21:4. We have reviewed Petitioner's contentions and cited supporting evidence addressing how Cohen teaches or renders obvious the limitations recited in claims 2–6, 10, 12, 15–19, and 21–25. *See* Pet. 63–74.

Patent Owner asserts that Cohen does not disclose or teach that the proxy caches 110, 115, and 117 correspond to the client devices recited in

the dependent claims because proxy caches 110, 115, and 117 are servers.

See Prelim. Resp. 24. According to Patent Owner,

> Petitioner previously argued that proxy redirector 104 meets the construction of "first server" because it is a device operating in the role of a server and it is not the same physical device as client 101. . . . Applying the same logic to proxy caches 110, 115, 117 would make the proxy caches servers, not client devices.

Id. (citing Pet. 57).

At this stage of the proceeding, we do not agree with Patent Owner's arguments because the plain language of the claims does not recite or require the first and second client device to operate in a role of a client during each recited step of the claims. The claims also do not preclude the first and second client devices from operating in a role of a server for some of the limitations of the claims. Accordingly, at this stage of the proceeding, we determine Petitioner shows sufficiently that Cohen discloses or suggests these limitations of dependent claims 2–5, 10, 12, 15–19, and 21–25.

For the purpose of institution and based on the record before us, including the reasons explained above addressing claim 1, Petitioner establishes sufficiently that the subject matter of dependent claims 2–5, 10, 12, 15–19, and 21–25 would have been obvious over Cohen.

4. Summary

For all of the foregoing reasons and based on the record before us, we determine there is a reasonable likelihood Petitioner would prevail in showing that claims 1–6, 10, 12, 15–19, and 21–25 are unpatentable under 35 U.S.C. § 103 over Cohen.

H. Challenge to Claims 6–9 over Cohen and RFC 1122

Petitioner asserts that the subject matter of dependent claims 6–9 would have been obvious to a person of ordinary skill in the art based on the teachings of Cohen and RFC 1122. *See* Pet. 74–78 (citing Ex. 1002 ¶¶ 216–225). As to claim 6, Petitioner asserts that, Cohen teaches "proxy redirector 104 would periodically send client computer 101 and proxy caches 117 keep-alive messages over the TCP connections [and] would wait for an 'acknowledgment' from proxy caches, confirming that the connection is still live." Pet. 74 (citing Ex. 1002 ¶ 221); *see* Pet. 66–68. Regarding claim 7, Petitioner asserts that, based on the teachings of Cohen as modified by RFC 1122, "[t]he addition of TCP keep-alives from RFC1122 would allow a [person of ordinary skill in the art] to identify if a TCP connection were alive, and if it was alive. Pet. 77 (citing Ex. 1002 ¶ 222; Ex. 1006, 102). As to claim 8, Petitioner asserts that "it would have been obvious to remove the IP address of a non-response." Pet. 78 (citing Ex. 1002 ¶ 224). Regarding claim 9, Petitioner asserts that RFC 1122 teaches periodically probing the TCP connection. *See id.* (citing Ex. 1002 ¶ 226; Ex. 1006, 102).

For the purpose of institution and based on Petitioner's cited support to Cohen, 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 Cohen." Pet. 74–75 (citing Ex. 1002 ¶ 216); *see KSR*, 550 U.S. at 418. According to Petitioner, a person of ordinary skill in the art "would have recognized the benefits of Cohen's proxy redirector exchanging TCP keep-alives with the proxy caches 110-1, 110-2, 117 to know if these proxy caches were

available." Pet. 75 (citing Ex. 1002 ¶ 217). Petitioner asserts that TCP keep-alives help detect when a client crashes or aborts a connection during a network failure and prevents server applications from indefinite hanging and unnecessary resource consumption. *See id.* (quoting Ex. 1006, 102; citing Ex. 1002 ¶ 217).

Petitioner further contends that a person of ordinary skill in the art would have known that TCP keep-alives could also prevent periods of inactivity between the proxy redirector and the proxy caches from causing the TCP connection between them to terminate. *See* Pet. 75–76 (citing Ex. 1002 ¶ 217). Petitioner acknowledges that RFC 1122 identifies potential disadvantages of TCP keep-alives, but Petitioner asserts that a person of ordinary skill in the art "would have recognized these disadvantages are outweighed" by the aforementioned benefits in a system such as Cohen's which explicitly discloses the need for keep-alives. Pet. 76 (citing Ex. 1002 ¶ 218).

At this stage of the proceeding, aside from the arguments highlighted above in Section II.G.3., that Cohen does not disclose or suggest "client devices" recited in the dependent claims, Patent Owner does not specifically address Petitioner's showing addressing the limitations of dependent claims 6–9. *See* Prelim. Resp. 24–25. For the same reasons as those explained above in Section II.G.3., at this stage of the proceeding we do not agree with Patent Owner's argument.

For all of the foregoing reasons, including the reasons explained above addressing claim 1, for the purpose of institution and based on the record before us, Petitioner establishes sufficiently that the subject matter of claims 6–9 would have been obvious over Cohen and RFC 1122. Accordingly, there is a reasonable likelihood Petitioner would prevail in

showing that claims 6–9 are unpatentable under 35 U.S.C. § 103 over Cohen and RFC 1122.

III. CONCLUSION

For the foregoing reasons, we determine there is a reasonable likelihood that Petitioner would prevail in showing at least one of the challenged claims of the '826 Patent is unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–10, 12, 15–19, and 21–25 of the '826 Patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '826 Patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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