

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

SANDPIPER CDN, LLC,
Patent Owner

Case IPR2025-00826
U.S. Patent No. 9,021,112

PATENT OWNER'S SUR-REPLY TO PETITIONER'S REPLY

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

I.	NEITHER GLINES NOR GLINES-GUPTA RENDERS OBVIOUS INDEPENDENT CLAIM 1.....	1
A.	The Board correctly determined Petitioner does not establish Glines, or Glines-Gupta, teaches “ <i>causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server</i> ” (element [1d]).	2
B.	The Board should disregard Petitioner’s <i>new</i> theory of unpatentability that Glines’s local DNS resolver performs “causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server.”	5
C.	Even if not found to be new, Petitioner theory regarding Glines’s local DNS resolver fails.	6
	1. Glines’s local domain name server does not perform claim element [1.d].	6
	2. Gupta does not cure the deficiency in Glines.	9
II.	NEITHER GLINES NOR GLINES-GUPTA TEACHES “ <i>A SECOND REQUEST FOR SECOND CONTENT ASSOCIATED WITH A SECOND CONTENT PROVIDER</i> ” (INDEPENDENT CLAIM 23).....	10
A.	The Petition does not establish that the prior art teaches “ <i>a second content provider</i> .”	11
B.	Petitioner continues its improper reliance on “general knowledge.” ..	13
III.	NONE OF THE CITED ART TEACHES THE CLAIMED “ <i>A PLURALITY OF CONTENT PROVIDERS</i> ” (INDEPENDENT CLAIMS 13, 18, 22, 23).	16
A.	Glines does not teach or render obvious “ <i>a plurality of content providers</i> .”	16
B.	Adding Gupta does not remedy the deficiency in Glines.	20
IV.	THE CITED ART DOES NOT TEACH THE “ <i>AT LEAST ONE SWITCH</i> ” LIMITATIONS (INDEPENDENT CLAIMS 13, 18, 19, 21, 22 AND DEPENDENT CLAIM 11).	21
A.	Glines does not disclose the claimed “switch” limitations.	21
B.	A POSITA would not have been motivated to combine Colby’s teachings to fill the gap.	22

V.	A POSITA WOULD NOT HAVE BEEN MOTIVATED TO COMBINE GLINES WITH GUPTA (GROUNDS 1B, 2B, 3B, 4B, 5B).....	23
VI.	CONCLUSION.....	27

TABLE OF AUTHORITIES

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Arendi S.A.R.L. v. Apple, Inc.</i> , 832 F.3d 1355 (Fed. Cir. 2016)	19
<i>Icon Health & Fitness, Inc. v. Strava, Inc.</i> , 849 F.3d 1034 (Fed. Cir. 2017)	26
<i>Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	5, 15, 18
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016)	17, 19
<i>Shimano Inc. v. GlobeRide, Inc.</i> , IPR2015-00273, Paper 40 (P.T.A.B. June 16, 2016)	13
<i>Symbol Techs., Inc. v. Opticon, Inc.</i> , 935 F.2d 1569 (Fed. Cir. 1991)	13
<i>Virtek Vision Int’l ULC v. Assembly Guidance Sys., Inc.</i> , 97 F.4th 882 (Fed. Cir. 2024)	23
<i>Wasica Finance GmbH v. Continental Automotive Systems, Inc.</i> , 853 F.3d 1272 (Fed. Cir. 2017)	18
<i>Yita LLC v. MacNeil IP LLC</i> , 69 F.4th 1356 (Fed. Cir. 2023)	5
Other Authorities	
37 C.F.R. § 42.23(b)	5, 15
37 C.F.R. § 42.104(b)(4).....	14, 15

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	“Cloud CDN: content delivery network,” <i>Google Cloud</i> , accessed at https://cloud.google.com/cdn (last accessed July 2, 2025)
2002	Non-Final Office Action, U.S. Application No. 14/164,925 (Dec. 1, 2015)
2003	National Judicial Caseload Profile – United States District Courts (March 2025)
2004	<i>Sandpiper CDN, LLC v. Google LLC</i> , 2:24-cv-03951, ECF No. 1 (C.D. Cal. May 10, 2024)
2005	<i>Sandpiper CDN, LLC v. Google LLC</i> , No. 2:24-cv-03951, Invalidity Contentions (April 22, 2025)
2006	<i>Sandpiper CDN, LLC v. Google LLC</i> , No. 2:24-cv-03951, ECF No. 82 (C.D. Cal. June 24, 2025)
2007	<i>Sandpiper</i> , No. 2:24-cv-03951, ECF No. 28 (C.D. Cal. Sept. 16, 2024)
2008	FAQs for Interim Processes for PTAB Workload Management, accessed at https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management
2009	<i>Gestures Tech. Partners LLC v. Apple Inc. et al.</i> , Petition for Writ of Certiorari, Case. No. 24- (filed June 11, 2025)
2010	<i>Intentionally Left Blank</i>
2011	<i>Intentionally Left Blank</i>
2012	Interim Processes for PTAB Workload Management Memorandum (March 26, 2025)
2013	Declaration of Samuel H. Russ, Ph.D.
2014	Curriculum Vitae of Samuel H. Russ, Ph.D.

Exhibit No.	Description
2015	“CDN Stands For Content Delivery Network: History and Evolution,” <i>BlazingCDN</i> , accessed at https://blog.blazingcdn.com/en-us/cdn-stands-for-content-delivery-network-history-and-evolution (last accessed August 7, 2025)
2016	“What is a CDN (Content Delivery Network)?” <i>Amazon Web Services</i> , accessed at https://aws.amazon.com/what-is/cdn/ (last accessed August 7, 2025)
2017	“How Anycast Works to Bring Content Closer to Your Visitors,” <i>Imperva</i> , accessed at https://www.imperva.com/blog/how-anycast-works/ (last accessed August 7, 2025)
2018	Declaration of Samuel Russ in Support of Patent Owner’s Response
2019	“DNS root server,” Cloudflare, accessed at https://www.cloudflare.com/learning/dns/glossary/dns-root-server/
2020	Lee <i>et al.</i> , “Availability and Effectiveness of Root DNS servers: A long term study,” IEEE (2010).
2021	Deposition Transcript of Todd C. Mowry
2022	Joint Claim Construction and Prehearing Statement, Sandpiper CDN, LLC v. Google LLC, Case No. 2:24-cv-03951 (C.D. Cal. June 20, 2025)
2023	“Enforcement and Non-Waiver of 37 C.F.R. § 42.104(B)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews,” USPTO Memorandum (July 31, 2025)

Petitioner's Reply fails to cure the Petition's fundamental deficiencies identified by the Board and in Patent Owner's Response ("POR"). Petitioner's arguments do not undermine the Board's determination that the Petition fails to demonstrate claims 1-12 and 23 are unpatentable over the cited art. DI, 19. Specifically, the Reply does not remedy the fatal defects identified by Patent Owner and the Board with respect to claim elements [1d], [23c], and [23e]. And Petitioner improperly advances new theories in its Reply in a flawed attempt to cure the Petition's fatal defects.

The Reply also fails to rebut Patent Owner's arguments regarding the "plurality of content providers" (independent claims 13, 18, 22, and 23) and "at least one switch" elements (independent claims 13, 18, 19, 21, 22, and dependent claim 11). Patent Owner's non-obviousness positions are supported by Dr. Russ's detailed, and well-supported, opinions. Yet, Petitioner chose not to depose Dr. Russ, and Dr. Mowry's conclusory testimony fails to overcome Patent Owner's arguments and evidence demonstrating that the claims are not obvious.

The numerous deficiencies confirm that Petitioner has not met its burden. The Board should uphold the patentability of all claims.

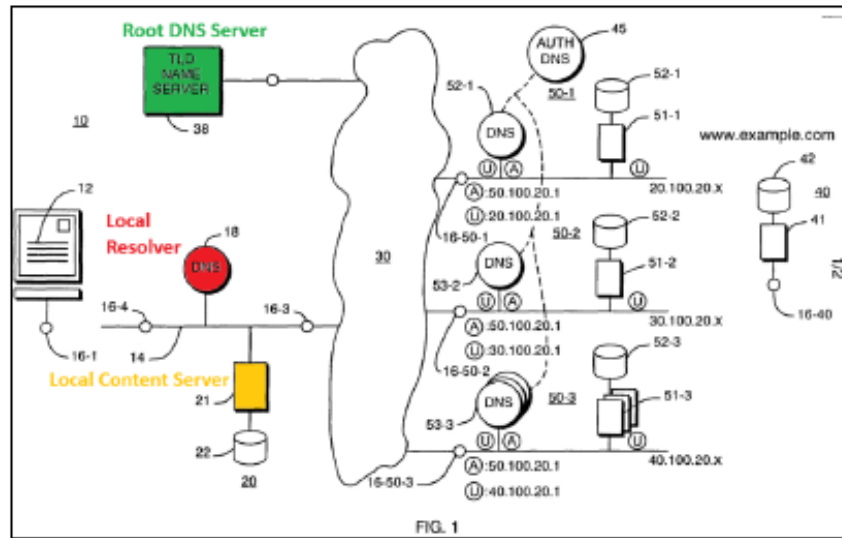
I. NEITHER GLINES NOR GLINES-GUPTA RENDERS OBVIOUS INDEPENDENT CLAIM 1.

Petitioner's Reply does not cure the fundamental deficiency identified by the Board in its Institution Decision: The Petition does not establish that Glines

discloses “*causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server.*” DI, 11-12. Petitioner improperly advances new arguments and attempts to rewrite the claim to disregard express language that the “causing” be performed “*by an ... ISP DNS server.*” The Board should reject these arguments and reaffirm its prior determination.

A. The Board correctly determined Petitioner does not establish Glines, or Glines-Gupta, teaches “*causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server*” (element [1d]).

The POR demonstrates that Glines does not teach “*causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server,*” as recited in element [1d]. POR, 25-27. As explained in the POR, Petitioner maps Glines’s “**local DNS resolver 18**” to the claimed ISP DNS server but then relies on the behavior of root DNS server 38 (which is not an ISP DNS server, EX2018, ¶55) to teach the claimed resolution to an anycast address. POR, 25 (citing Pet., 19-21). Glines’s Figure 1 illustrates the differences between these two components.



EX1002, FIG. 1 (annotated).

Glines describes a system in which local DNS resolver 18 sends a request for performance of hostname resolution to root DNS server 38; and root DNS server 38 (shown in green) resolves the hostname to an anycast address. *See* EX1002, 13:21-14:12, FIG. 2. Glines’s local resolver 18 (shown in red) is not used to resolve a hostname to a common anycast address. Rather, it is merely used to determine whether a content file is available at a local content server (and if so, returning a “local IP address,” not a common anycast address). POR, 27; EX1002, 13:27-14:5. Thus, in Glines, root DNS server 38—not local DNS resolver 18—performs the resolving function. The Board agreed and determined “[b]ecause Glines’s local resolver 18 does not resolve a hostname to a common anycast address, it does not teach limitation [1d].” DI, 12. That is the correct conclusion.

The POR further demonstrates, and the Board agreed, that Gupta does not cure Glines's deficiencies. POR, 27-29. Petitioner alleges it would have been obvious to substitute Gupta's ISP 60, including client DNS server 170, for Glines's local DNS resolver 18. Pet., 23-25. Setting aside that the combination is improper and hindsight-driven (as discussed further in Section V), the modified local DNS resolver 18 would still not perform the anycast address resolution recited by element [1d]. POR, 27-28. As the Board correctly found, "Petitioner's proposal to substitute Gupta's ISP resolver ... does not cure this deficiency because the function of Glines's DNS resolver 18 is not to resolve a hostname into an anycast address." POR, 27-28 (quoting DI, 21).

Petitioner's Reply does not address these dispositive flaws. It does not—and cannot—identify any disclosure in Glines that describes its local DNS resolver 18 (identified in the Petition as the claimed ISP DNS server) resolves a hostname to an anycast address. Rather than demonstrating how the Petition meets this feature, Petitioner improperly advances a new unpatentability theory in its Reply. For the reasons below, these arguments should not be considered or, if considered, rejected, and the Board's correct determination that Petitioner fails to carry its burden for claim 1 (and its dependent claims 2-12) should be maintained.

B. The Board should disregard Petitioner’s *new* theory of unpatentability that Glines’s local DNS resolver performs “causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server.”

The Petition clearly sets forth in its purported unpatentability theory for element [1d] that Glines “‘*caus[es] said hostname to be resolved to said common anycast address*’ by returning an anycast address associated with DNS servers name servers,” which Petitioner concedes is performed by “root DNS name server 38.” Pet., 19-21. That is, the Petition explicitly relies on root DNS name server 38, which is programmed to “return the anycast address,” for performing element [1.d]. Pet., 21 (citing EX1002, 14:4-15:4); DI, 11. Now, for the first time in its Reply, Petitioner advances a new theory that Glines’s local DNS resolver 18 (mapped to the claimed ISP DNS server) performs this step. Reply, 2-11.

Such shifting arguments are improper. *See* 37 C.F.R. § 42.23(b); *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1365–66 (Fed. Cir. 2023) (explaining § 42.23(b) means that an IPR petitioner may not raise in reply an entirely new rationale) (internal cites omitted). A petitioner must identify its theories with particularity in the Petition and may not introduce new claim mappings or theories in its Reply. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each

claim.”). Petitioner’s attempt to do so here provides reason alone for the Board to reject these new arguments and uphold its original determination that Petitioner fails to carry its burden for claim 1.

C. Even if not found to be new, Petitioner theory regarding Glines’s local DNS resolver fails.

Even if considered, Petitioner’s theory fails. On Reply, Petitioner alleges element [1d] “encompasses Glines’s local DNS resolver 18 ... sending a request to another server—root DNS server 38—to perform the resolution to the anycast address.” Reply, 3. But, contrary to Petitioner’s allegations, Reply, 3-6, Glines’s local DNS resolver 18 plays no role in resolving a hostname to an anycast address.

1. Glines’s local domain name server does not perform claim element [1.d].

As explained by Dr. Russ, the plain language of claim 1 requires the “*hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server.*” EX2018, ¶54. As the Board correctly found, “Petitioner has identified **Glines’s root server 38, not its local resolver 18**, as performing the step of ‘*causing said hostname to be resolved to said common anycast address.*’” DI, 11 (citing Pet., 20) (emphasis added).

As noted in the POR, Glines expressly describes that its root DNS server 48 receives “a request to resolve the location of ‘example.com,’” and “**root DNS server 38 ... resolve[s] the IP address for a DNS server authoritative for the**

requested domain name.” EX1002, 14:8-12 (emphasis added); POR, 25-27.

Nowhere does the Petition tie this functionality to Glines’s local resolver 18. *See* Pet., 20-22.

Petitioner attempts to justify this deficiency by shifting the focus to the ’112 patent, alleging that in embodiments of the ’112 patent “the local DNS server 70a—the ISP DNS server—‘*sends a request* to the ABCD DNS server 64 ... which returns the anycast address of the CDN nodes 76” Reply, 3 (emphasis in original) (citing EX1001, 7:5-9). That disclosure, however, does not support Petitioner’s position; rather, it reveals the distinction between the architecture disclosed by the ’112 patent and that of Glines.

Specifically, the ’112 patent describes that when “the end-user station (acting as a content requestor) sends a request to the local DNS server 70a,” “[t]hat server 70a resolves the name, ultimately by sending a request to the CDN DNS anycast address.” EX1001, 7:2-5 (emphasis added). Rather than offloading that resolution to a root DNS server for conventional DNS resolution as in Glines, DNS server 70a in the ’112 patent directly queries “the ABCD DNS server 64 (“DNS Req 94), which returns the anycast address.” That is, DNS server 70a is directly involved in performing the step of “*causing said hostname to be resolved to said common anycast address,*” by at least determining the DNS resolution path and initiating performance of that task.

To the extent an analogy between that embodiment of the '112 patent and Glines exists, it is that DNS server 70a performs operations similar to Glines's root DNS server 38, both involved in causing resolution of the hostname requested by the client. And nowhere does Petitioner assert that Glines's root DNS server 18 is an "*Internet Service Provider (ISP) DNS server*"—because it is not. POR, 26 (citing EX2018, ¶¶54-55). Glines's local DNS resolver 18 plays no role in resolving a hostname to an anycast address. As explained in the POR, Glines's local resolver 18 is merely used to determine whether a content file is available at a local content server, in which case Glines discloses that a "local IP address"—not a common anycast address—"is returned to the browser program." POR, 27 (citing EX1002, 13:27-14:5). If local resolver 18 fails to find a local IP address, it simply delegates DNS resolution to another server. EX1002, 14:8-12; POR, 25-26.

Petitioner's (and Dr. Mowry's) reliance on generalized assertions about how DNS systems operate —i.e., that DNS resolution often involves multiple servers to resolve a hostname into an address—also misses the point. Reply, 4-6; EX1047, ¶¶7-17. Such generalizations cannot overcome the indisputable fact that Glines expressly assigns the relevant function to a different component (root server 38), and not its local domain name server 18. Petitioner provides no evidence or argument to show that Glines's domain name server 18 is involved in resolving a

hostname to an anycast address. Nor could it, given Glines’s clear disclosure of the role of its root server 38.

At bottom, Petitioner’s Reply arguments improperly rest on a new, unsupported theory. The defect in the Petition with respect to element [1d] remains uncured, and the Board should maintain the findings in its Institution Decision.

2. Gupta does not cure the deficiency in Glines.

Petitioner’s reliance on Gupta is equally unavailing. At the outset, for the reasons set forth in Section V, a POSITA would not have been motivated to combine Glines with Gupta. Regardless, as the POR explains, Gupta does not teach resolving a hostname to an anycast address by an ISP DNS server. POR, 28-29. Rather, Gupta describes a DNS server 170, within a network of point-of-presence (POP) servers, that selects content servers based on bandwidth and employs unicast addressing—it does not resolve a hostname to an anycast address. *See* EX1003, 5:33-39, 6:4-6.

Petitioner wrongly characterizes Patent Owner’s showing that Gupta lacks “anycast addressing” as irrelevant. *Contra* Reply, 12. Patent Owner’s explanation demonstrates that, in Petitioner’s proposed Glines-Gupta combination where Glines’s local DNS resolver 12 is modified by Gupta’s client DNS server, the modified server “still would not perform the anycast address resolution required by [1d].” POR, 28; EX2018, ¶¶56-58. That anycast resolution functionality would still

be reserved for Glines’s root DNS name server 38. *See* Reply, 11 (“Glines retains its anycast resolution functionality in the proposed combination.”). Thus, even if there was reason to substitute Gupta’s client DNS server for Glines’s local DNS resolver (there is not), the modified local DNS resolver 18 would not alter Glines in a way that would result in an ISP DNS server “*causing said hostname to be resolved to said common anycast address.*”

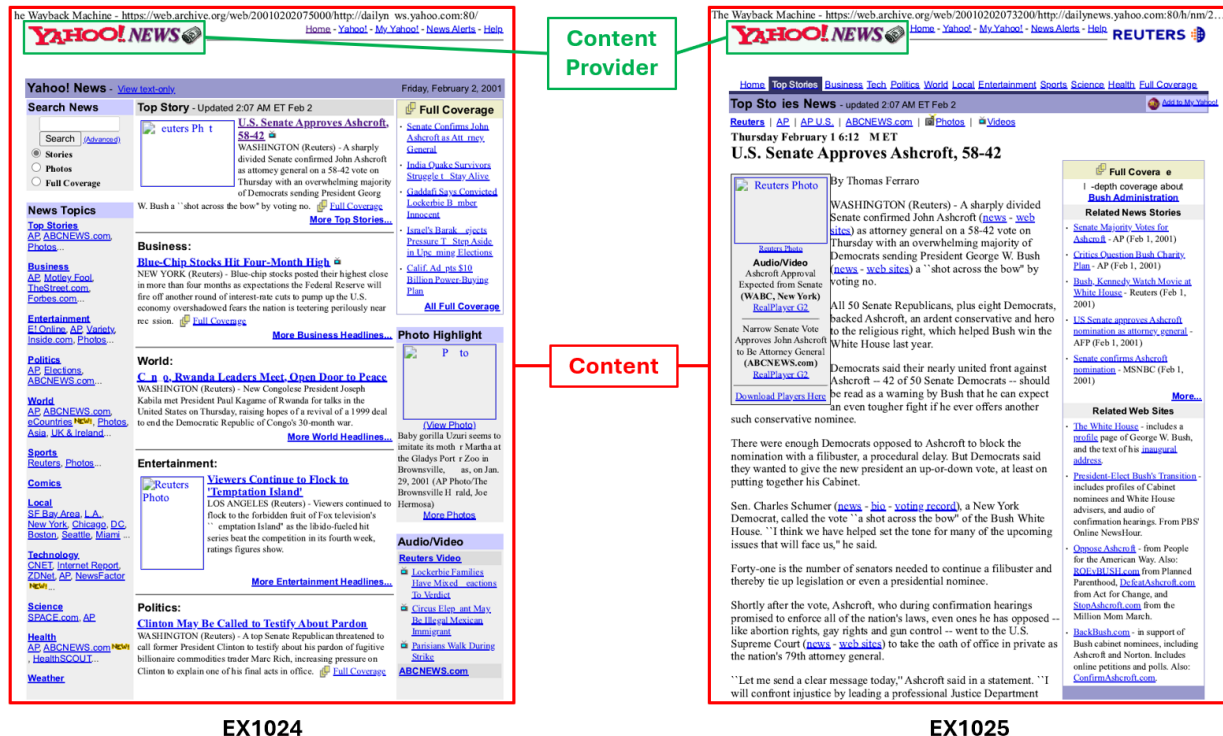
Accordingly, Petitioner fails to establish Glines-Gupta teaches “*causing said hostname to be resolved to said common anycast address by an [ISP] DNS server,*” as recited by element [1d]. The Board, therefore, should confirm the patentability of claim 1 and dependent claims 2-12.

II. NEITHER GLINES NOR GLINES-GUPTA TEACHES “A *SECOND REQUEST FOR SECOND CONTENT ASSOCIATED WITH A SECOND CONTENT PROVIDER*” (INDEPENDENT CLAIM 23).

Petitioner’s Reply fails to correct the Petition’s shortcomings as to claim 23. *See* DI, 24 (determining Petitioner has not provided sufficient support for elements [23c] and [23e]). As discussed in the POR, the Petition does not identify any disclosure in the asserted art of “*a second request for second content associated with a second content provider*” (element [23e]). The Reply also fails to supply any such disclosure. Instead, Petitioner continues its improper reliance on purported “general knowledge” that the Board already rejected.

A. The Petition does not establish that the prior art teaches “a second content provider.”

The POR explains that the Petition does not identify a “second content provider,” as recited in element [23.e], different than the “first content provider” recited in [23.c]. POR, 29-34. Setting aside Petitioner’s improper reliance on purported “general knowledge” and evidence outside the asserted grounds (discussed further in Section II.B), Petitioner maps both the first and second content providers to the same content provider (Yahoo News!). POR, 33.



POR, 33.

Petitioner’s expert confirms the “second content” is the Web page provided by Yahoo! News, located at

http://dailynews.yahoo.com/h/nm/20010201/ts/congress_ashcroft_dc_71.html, and not the article within the page. POR, 33; EX2021, 92:20-93:15.

Petitioner contends that it identifies content associated with different content providers based on requests having a common hostname. Reply, 19. Petitioner alleges the Yahoo! News splash page is the first content and that the second content is a news article associated with Reuters (the second content provider), and that both content providers have a web site on a network. Reply, 19-20. Petitioner argues that Dr. Russ identifies evidence describing content from Reuter's website (alleged second content provider) and that the Reuters link explains that Reuters "creates and distributes content" over the Internet. Reply, 20 (citing EX2016, 3). Thus, Petitioner asserts it identifies different content associated with different content providers. Reply, 19-20.

Petitioner's arguments are unavailing. It is irrelevant that Reuters creates and distributes content. Petitioner does not identify a Reuters' web page as the second content provider; instead, it relies on the Yahoo! News site to provide both the first content and second content (with the latter merely authored, not provided, by Reuters). POR, 33 (citing, *e.g.*, Pet., 56; EX2018, ¶65); *see also* EX2021, 92:20-93:15 (Dr. Mowry clarifying that the alleged second content is the Web page provided by Yahoo! News, not the article within the page). Dr. Russ confirms that a POSITA would have understood that the second article written by Reuters is

stored and provided by Yahoo! News. EX2018, ¶66. Dr. Mowry does not address—much less rebut—Dr. Russ’s testimony. *See generally* EX1047. Nor did Petitioner choose to challenge Dr. Russ’s opinions and supporting evidence through deposition. *Shimano Inc. v. GlobeRide, Inc.*, IPR2015-00273, Paper 40 at 20 (P.T.A.B. June 16, 2016) (“Because [Petitioner] did not depose [the declarant], his testimony is undisputed”); *Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1575–76 (Fed. Cir. 1991) (“Cross-examination [is] the proper procedure for the defendant to challenge the accuracy of [the expert’s] opinion.”) (internal citation omitted). Petitioner’s unsupported attorney argument cannot overcome Patent Owner’s showing in the POR, supported by the evidence and expert testimony, that both articles are provided by the same content provider (Yahoo! News).

B. Petitioner continues its improper reliance on “general knowledge.”

Unable to identify a disclosure in Glines, or Glines-Gupta, that meets both claim elements [23c] and [23e], Petitioner turns to evidence outside the prior art relied upon in its challenge and uses “general knowledge” to supply the missing elements. As found by the Board, “Petitioner has not provided sufficient support or explanation as to why [the Yahoo! News] example represents the general knowledge in the art ... such that it would have been considered to be ‘a known prior art technique.’” DI, 24.

The POR explains that the Petition’s arguments for elements [23c] and [23e] are both unsupported and legally insufficient. POR, 35-36. Petitioner does not include the Yahoo! News Exhibits (Exhibits 1024 and 1025) in its asserted obviousness grounds. Petitioner also does not provide sufficient support to for its allegation that the Yahoo! News examples demonstrate the claimed “*first request*” and “*second request*” were within the common knowledge of those skilled in the art. POR, 35. Moreover, the Patent Office has noted that relying on general knowledge to supply a missing element violates 37 C.F.R. § 42.104(b)(4). POR, 36 (citing EX2023, 1-2).

In its Reply, Petitioner argues that the Yahoo! News exhibits do not form the basis of its patentability challenges, but instead it relies on “a POSITA’s knowledge to inform how Glines’s disclosure ... would have been understood in the art based on known content providers at the time.” Reply, 21. Petitioner, and Dr. Mowry, further allege that a POSITA was aware of the Yahoo! News and news agencies Internet services (e.g., Reuters) as of the critical date. Reply, 20; EX1047, ¶¶29-32.

As a preliminary matter, the Board correctly found Petitioner failed to provide sufficient support or explanation why the website represents general knowledge in the art. DI, 18. Petitioner’s improper attempt to submit new evidence

and testimony in the Reply to fill the identified gaps in its Petition should not be considered. *See* 37 C.F.R. § 42.23(b); *Intelligent Bio-Systems*, 821 F.3d at 1369.

But, even if considered, Petitioner’s Reply cannot overcome that the Petition cites to a Yahoo! News webpage—not to any disclosure in Glines or Gupta—to map the “*first content associated with a first content provider*” and the “*second content associated with a second content provider*” elements of claim 23. *See* Pet., 54-57. Thus, Petitioner improperly “rel[ies] on evidence of supposed general knowledge in the art to fill claim limitations missing from the ground references.” POR, 36; EX2023, 1 (“[G]eneral knowledge” “may not be used to supply a missing claim limitation.”).

Petitioner itself implicitly acknowledges that there are “differences between claim 23 and Glines,” which it alleges are nothing more than “the predictable use of prior art elements.” Reply, 21. Tellingly, Petitioner cites only to appeals of district court litigation to support its argument that the Board should consider purported general knowledge. *See* Reply, 22. But the Board regulations require that a petition “must specify where each element of the claim is found *in the prior art patents or printed publications relied upon*.” 37 C.F.R. § 42.104(b)(4) (emphasis added). Petitioner fails to meet this requirement.

Therefore, Petitioner does not establish that the asserted art renders obvious “*a second request for second content associated with a second content provider*.”

The Reply does not cure that failure or overcome the Board's findings calling into question the Petition's mapping of elements [23c] and [23e]. In line with its Institution Decision, the Board should uphold the patentability of claim 23.

III. NONE OF THE CITED ART TEACHES THE CLAIMED “A PLURALITY OF CONTENT PROVIDERS” (INDEPENDENT CLAIMS 13, 18, 22, 23).

Petitioner's Reply does not cure the Petition's failure to show that the asserted art teaches or renders obvious a system configured to support “*a plurality of content providers*,” as recited by claims 13, 18, 22, and 23. As the POR explains, Petitioner does not establish that Glines, alone or in combination with Gupta, discloses this element. POR, 36-43. The Reply does not remedy the defect.

A. Glines does not teach or render obvious “*a plurality of content providers*.”

The POR establishes that the Petition's analysis of the “*plurality of content provider*” is fundamentally deficient. POR, 37-41. For claims 13, 18, and 23, Petitioner refers only to its analysis element [1b], which alleges only that Glines discloses a single content provider. POR, 38; Pet., 41, 48, 54 (pointing only to [1b] for the analysis of [13b], [18b], [23b]); Pet, 16-18 (alleging Glines discloses a single content provider associated with www.example.com). For claim 22, the Petition identifies portions of Glines that do not refer to the claimed “*content providers*,” but rather to network providers. POR, 38-39. The Petition does not provide sufficient reason to support its allegation that a POSITA would have

understood Glines to disclose providing content from more than one source. POR, 38-40.

Indeed, the Board agreed and determined Petitioner does not even meet its threshold burden at institution to establish claims 13, 18, 22, and 23 would have been obvious over Glines. DI, 14-15. These defects in the Petition cannot be corrected. Petitioner has the burden and the Board must base its decisions on arguments advanced by Petitioner—it may not substitute its own reasoning or arguments for those raised in the Petition. *See In re Magnum Oil Tools Int’l, Ltd*, 829 F.3d 1364, 1381 (Fed. Cir. 2016).

Petitioner disputes that the Petition fails to present a theory that Glines’s system serves content associated with “*one or more content providers*,” citing its analysis of element [13p]. Reply, 13-15 (citing Pet., 39-41). Yet, Petitioner then introduces a new theory purportedly supported by new testimony from Dr. Mowry alleging “a POSITA would have readily appreciated that a CDN of the type disclosed in Glines would have been intended and designed to provide content from many content providers.” Reply, 14 (citing EX1047, ¶¶24-28). Petitioner also relies on a new passage in Glines—not cited in its Petition—that discloses name servers may be an authoritative DNS resolver for domain names. Reply, 15. Finally, attempting to rebut the Board’s findings, Petitioner argues that the Petition and Dr. Mowry identify how replication of Glines’ content servers “would occur

and what the results would be.” Reply, 16. None of these arguments salvage the deficiency in the Petition.

First, Petitioner’s new shifting theories are improper and should not be considered. *See Intelligent Bio-Systems*, 821 F.3d at 1369. For element [13p], the Petition cites only a single passage of Glines in support of its allegation that Glines discloses multiple providers. Pet., 40 (citing EX1002, 17:3-9). After the Board agreed with Patent Owner that this portion of Glines “discusses the actions of a network rather than content,” DI, 14, Petitioner abandoned this theory in its Reply and does not refer to this passage even a single time. *See* Reply, 13-18. It would be improper for the Board to consider Petitioner’s new arguments and expert testimony asserting that Glines would have been designed to provide content from multiple providers. Petitioner’s reliance on a new passage of Glines discussing name servers compounds the impropriety. *See Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (determining the petitioner raised an impermissible new theory when it cited to a different passage of a reference, rather than explaining how its original petition was correct).

Second, as explained in the POR, Petitioner does not provide sufficient analysis for claims 13, 18, and 23. POR, 38. Petitioner is wrong that “where these claims recite multiple ‘content providers,’ Petitioner cross-cited correctly to

Element [13p].” *Contra* Reply, 17. As the POR explains, Petitioner cross-cites only limitation [1b] for limitations [13b], [18b], and [23b]—each reciting “*a plurality of content providers*.” POR, 38. The Petition does not cross-cite element [13p] or otherwise analyze how Glines discloses the specific recited claim language for these elements. And the Petition’s analysis of element [1b] does not address the “*plurality of content providers*” language. *See* Pet., 16-18. The Board cannot cure the defect. *In re Magnum Oil Tools*, 829 F.3d at 1381.

Third, Petitioner’s generalizations about how CDNs operate are untethered to Glines. The Petition’s sole support for its allegation that a POSITA would have understood Glines includes more than one origin source cites Glines’s existing “replica content servers,” not multiple content providers. POR, 40; EX2018, ¶71. Tellingly, Petitioner does not address, or rebut, Dr. Russ’s testimony on this point.

Last, Petitioner fails to explain how its proposed modification to Glines to provide content from multiple providers would operate or why it would achieve expected results. POR, 40. The Reply repeats the same assertions the Board found insufficient in its Institution Decision. *See* Reply, 16-17. As the Board recognized, such conclusory generalizations do “not provide the ‘reasoned explanation’ sufficient to show that a limitation missing in the cited art was taught by the knowledge in the art.” DI, 15 (citing *Arendi S.A.R.L. v. Apple, Inc.*, 832 F.3d 1355, 1365 (Fed. Cir. 2016)).

Accordingly, the Reply does not correct the shortcoming in the Petition's failure to demonstrate Glines teaches "*a plurality of content providers.*"

B. Adding Gupta does not remedy the deficiency in Glines.

The POR establishes that Petitioner's reliance on Gupta fares no better. POR, 41-43. Neither Petitioner, nor its expert, provides any explanation of how the Glines-Gupta system would operate or why a POSITA would have had a reasonable expectation of success in making the combination. Reply, 41. Petitioner and its expert also fail to explain how additional storage capability (a purported result of the combination) facilitates support for multiple content providers. Reply, 42.

Petitioner argues it "would have been obvious to apply" Gupta's teachings of hosting content from more than one specific customer to Glines's system. Reply, 17. Petitioner alleges it "would have been obvious: to 'store[] and provide[] content from multiple content providers" to "maximize the usefulness and value of Glines's system." Reply, 17-18, 22. Petitioner asserts Glines's functionality would be unaltered when combined with Gupta. Reply, 18.

Petitioner's Reply fails to address the omission identified in the POR. POR, 41-43. Specifically, Petitioner does not provide any explanation how the Glines-Gupta system would operate. Furthermore, as explained in Section V, Glines and

Gupta have fundamentally different architectures, and a POSITA would not have had reason to make the proposed combination.

Thus, Petitioner does not meet its burden to demonstrate claims 13 (and its dependent claims 14-17), 18, 22, and 23 are unpatentable.

IV. THE CITED ART DOES NOT TEACH THE “*AT LEAST ONE SWITCH*” LIMITATIONS (INDEPENDENT CLAIMS 13, 18, 19, 21, 22 AND DEPENDENT CLAIM 11).

A. Glines does not disclose the claimed “switch” limitations.

The POR establishes that Glines does not disclose the “*at least one switch*” limitations. POR, 43-46. Glines refers to a switch only twice. POR, 43-44 (citing EX1002, 11:18-20, 19:13-15). The first reference to internetwork device is irrelevant and the second reference to a Layer 4 switch does not teach that the switch is used to “*select the content server from said respective plurality of content servers,*” as recited in claim 19 and similarly recited in claims 11, 13, 18, 21, and 22. POR, 44-45. As Patent Owner and Dr. Russ explain, Petitioner overreads Glines: Glines has no need to cause the Layer 4 switch to select the content server because it employs a different technique. POR, 45-46; EX2018, ¶¶80-82.

The Reply asserts that Glines’s return of multiple local IP addresses is one of two alternative methods of load balancing, “with the other being ‘layer 4 switches.’” Reply, 22-23 (citing DI, 17; EX1002, 19:13-16). Petitioner also argues

“Glines’s replication does not disturb its alternative [to] use a switch to select a content server.” Reply, 23.

Petitioner’s arguments do not address the identified deficiency. The POR acknowledges “Glines separately teaches load balancing within a service group and the use of a layer 4 switch.” POR, 46. But, Glines “does not provide any detail of the functionality performed by the Layer 4 switch, let alone teach that it is used to ‘*select the content server.*’” EX2018, ¶80. Nor does Glines “state the role of the Layer 4 switch” in performing standard load balancing. EX2018, ¶82. Petitioner fails to address, let alone rebut, Dr. Russ’s testimony on these points. *See* EX2018, ¶82.

Accordingly, Petitioner fails to demonstrate Glines teaches the “*at least one switch*” limitations.

B. A POSITA would not have been motivated to combine Colby’s teachings to fill the gap.

Petitioner’s reliance on Colby does not cure the deficiency in Glines alone or in the alternative combinations (hereinafter “Glines”). The POR explains Petitioner’s argument that Colby discloses “a content-aware flow switch” disregards that “Glines already discloses load balancing techniques that do not require the use of an additional switch.” POR, 46. Thus, Petitioner does not provide adequate reason why a POSITA would have combined Colby with Glines. POR, 46-47.

In response, Petitioner asserts it would have been obvious to combine Colby's functionality with Glines "for the reasons provided in the Petition." Reply, 23-24. Petitioner alleges that Patent Owner does not confront these reasons. Reply, 24.

Contrary to Petitioner's assertion, Patent Owner directly addresses Petitioner's reason to combine and explains why it is insufficient. POR, 46-47. The Petition alleges the combination would "have distributed load across multiple content servers" and that "the 'best-fit' server would be selected" on load metrics. Pet., 68. Yet, as Dr. Russ explains, Glines already discloses load-balancing techniques that do not require the use of a switch. EX2018, ¶81; POR, 46. Thus, the Petition fails to provide any reason to add Colby when Glines already performs the claimed functionality. *Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 886 (Fed. Cir. 2024).

Accordingly, for this independent reason, Petitioner does not show claims 11, 13 (and its dependent claims 14-17), 18, 19 (and its dependent claim 20), 21 and 22 would have been obvious.

V. A POSITA WOULD NOT HAVE BEEN MOTIVATED TO COMBINE GLINES WITH GUPTA (GROUNDS 1B, 2B, 3B, 4B, 5B).

The Reply does not remedy Petitioner's failure to provide adequate reason to combine Glines and Gupta. As explained in the POR, Petitioner's motivation rests on conclusory assertions and hindsight-driven analysis. POR, 47-55. Dr. Russ

provides detailed reasoning why a POSITA would not have been motivated to combine Glines and Gupta in the proposed manner. *See* EX2018, ¶¶83-91. Tellingly, Dr. Mowry’s supplemental testimony does not address Dr. Russ’s analysis and offers no additional support for Petitioner’s flawed combination theory. *See generally* EX1047.

The POR demonstrates, with testimony from Dr. Russ and based on evidence of record, that Glines and Gupta are directed to materially different architectures and solve different problems. Glines routes requests for content using anycast addressing to select an appropriate replica DNS server and file server based on proximity to the user. POR, 50, 52-53; EX2018, ¶¶85-86. In contrast, Gupta describes using a network probe server, coupled to the DNS server based on standard load balancing techniques. EX2018, ¶¶87-89. The POR, and Dr. Russ, further explain why Gupta’s ISP would not be an obvious substitute for Glines’s local resolver. POR, 53-54; EX2018, ¶¶87-90. Indeed, Petitioner’s motivation to combine is based on a false premise that Gupta’s ISP 60 performs the same functions as Glines’s local DNS resolver—it does not. POR, 54; EX2018, ¶¶55, 58, 90. As Dr. Russ explains, achieving the combination would have been impractical and “any combination could only be made using hindsight.” EX2018, ¶¶90-91.

In its Reply, Petitioner argues that it does not use impermissible hindsight.

Reply, 25.¹ Petitioner maintains its allegation that the combination would be nothing more than a simple substitution of known elements. Reply, 26. Petitioner also asserts that it does not rely on any resolution techniques in Gupta that conflict with Glines. Reply, 27. Petitioner alleges it identifies reasons in the Petition why it would have been obvious to modify Glines to use a “‘plurality’ of content servers” and use an ISP DNS server. Reply, 28.

The Reply does not cure Petitioner’s hindsight-driven analysis, which fails to provide reason why a POSITA would have made the proposed Glines-Gupta combination. Petitioner offers only conclusory statements that it would have been “obvious” to implement Glines’s local DNS resolver as an ISP DNS server based on Gupta; it does not explain why a POSITA would make the modification when Glines discloses its root DNS name server 38, not local DNS resolver 18, is the component programmed to return the anycast address. EX1002, 14:17-18.

¹ Petitioner wrongly asserts that Patent Owner concedes Glines teaches “each CDN DNS server is associated with a respective plurality of content servers.” Reply, 25 n.1. Regardless, Petitioner’s assertion misses the point. Petitioner has the burden to establish a motivation to combine Glines and Gupta in view of their respective disclosures, and the Petition fails to do so. *See* POR, 48-49.

Critically, the POR's analysis is supported by Dr. Russ's unrebutted testimony, who provides a detailed explanation why a POSITA would not have combined Glines-Gupta in the manner proposed. EX2018, ¶¶83-91. Dr. Russ addresses the structural and functional differences between the systems, and the technical incompatibilities that would arise from Petitioner's proposed combination. Petitioner does not provide any testimony from Dr. Mowry that addresses these issues. *See generally* EX1047. Petitioner, thus, relies solely on attorney argument in its Reply, which cannot overcome Patent Owner's evidence and testimony explaining why a POSITA would not have combined the teachings of Glines and Gupta in the manner proposed by Petitioner. *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence.").

Petitioner's failure to provide motivation for why a POSITA would have combined Glines and Gupta is another independent reason why its Ground B challenges all fail.

VI. CONCLUSION

The Board should uphold the patentability of all challenged claims of the '112 patent.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Jason D. Eisenberg/

Jason D. Eisenberg, Reg. No. 43,447

Daniel S. Block, Reg. No. 68,395

Kristina Caggiano Kelly, Reg. No. 58,164

Steven M. Pappas (Reg. No. 73,904)

Counsel for Patent Owner

Date: June 26, 2026

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600

CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Sur-Reply complies with the type-volume limitation of 5,600 words, comprising 5,597 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).
2. This Patent Owner's Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Jason D. Eisenberg/

Jason D. Eisenberg
Registration No. 43,447
Counsel for Patent Owner

Date: June 26, 2026

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER'S SUR-REPLY TO PETITIONER'S REPLY** was served in its entirety on June 26, 2026, upon the following parties via electronic mail:

Erika H. Arner (Lead Counsel)	erika.arner@finnegan.com
Kara A. Specht (Back-Up Counsel)	kara.specht@finnegan.com
Cara E. Regan (Back-Up Counsel)	cara.regan@finnegan.com
Sydney R. Kestle (Back-Up Counsel)	sydney.kestle@finnegan.com
William C. Neer (Back-Up Counsel)	william.neer@finnegan.com
Daniel C. Tucker (Back-Up Counsel)	daniel.tucker@finnegan.com
Alexander M. Boyer (Back-Up Counsel)	alexander.boyer@finnegan.com
	Google-Sandpiper-IPRs@finnegan.com
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP	

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Jason D. Eisenberg/

Jason D. Eisenberg
Registration No. 43,447
Counsel for Patent Owner

Date: June 26, 2026

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600