

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

SANDPIPER CDN, LLC,
Patent Owner

Case IPR2025-00806
U.S. Patent No. 8,645,517

PATENT OWNER'S PRELIMINARY RESPONSE

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TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PERSON OF ORDINARY SKILL IN THE ART (POSA)	2
III.	CLAIM CONSTRUCTION	2
IV.	FACTUAL BACKGROUND	3
	A. Overview of the Technology.....	3
	B. Overview of the '517 Patent	6
	C. Prosecution History of the '517 Patent.....	8
V.	LEGAL STANDARDS	11
VI.	PETITIONER'S PRIORITY CHALLENGE FAILS.....	12
VII.	GROUNDS 1 AND 2 FAIL AT LEAST BECAUSE THE CITED PRIOR ART DOES NOT TEACH OR SUGGEST TWO CLAIM LIMITATIONS.....	14
	A. The cited prior art does not teach the claimed "policy" features.....	15
	B. The cited prior art does not teach or suggest "the one or more branch nodes specify one or more decision criteria to be applied."	20
VIII.	GROUNDS 3A AND 3B FAIL AT LEAST BECAUSE THE CITED PRIOR ART DOES NOT TEACH OR SUGGEST A POLICY THAT CAN BE IMPLEMENTED FOR "DIRECTION OF NETWORK TRAFFIC."	24
	A. The cited prior art fails to teach or suggest a policy that can be implemented for "direction of network traffic."	25
	B. The cited prior art does not teach or suggest that "the one or more branch nodes specify one or more decision criteria to be applied."	30
IX.	CONCLUSION	34

TABLE OF AUTHORITIES

Cases

<i>Abbott Labs. v. Andrx Pharm., Inc.</i> , 452 F.3d 1331 (Fed. Cir. 2006)	1
<i>Belden Inc. v. Berk-Tek LLC</i> , 805 F.3d 1064 (Fed. Cir. 2015)	10, 11
<i>Honeywell Int’l Inc. v. DSM IP Assets, B.V.</i> , IPR2024-00493, Paper 7 (PTAB Aug. 21, 2024)	10
<i>Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	10
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016)	9
<i>NJOY, LLC v. JUUL Labs, Inc.</i> , IPR2024-00536, Paper 17 (PTAB Aug. 12, 2024)	10
<i>Regents of the Univ. of Cal. v. Broad Inst., Inc.</i> , 903 F.3d 1286 (Fed. Cir. 2018)	10

Statutes

35 U.S.C. § 102(b)	11
35 U.S.C. § 102(e)	7, 11
35 U.S.C. § 103(a)	7

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	Prosecution History of U.S. Application No. 10/259,497
2003	Prosecution History of U.S. Application No. 11/932,162
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	<i>Intentionally Left Blank</i>
2013	Interim Processes for PTAB Workload Management Memorandum (March 26, 2025)
2014	National Judicial Caseload Profile – United States District Courts (March 2025)
2015	Declaration of Dr. Prashant Shenoy

Exhibit No.	Description
2016	Curriculum Vitae of Dr. Prashant Shenoy

I. INTRODUCTION

The Petition presents all of its invalidity challenges in the alternative based on a priority challenge. While the Board will need to resolve this priority challenge in order to provide the basis for its Final Written Decision in this case, it need not decide the issue for purposes of denying institution because both alternative challenges fail on the merits in multiple respects.

First, under either statutory basis, Grounds 1 and 2 rely on prior art that fails to teach or suggest two limitations of all of the independent claims: (A) the “policy” features, and (B) the requirement that “the one or more branch nodes specify the one or more decision criteria.” The patent is clear that a policy is a course, rule, or principle of action. It is not merely descriptive information. The cited prior art, however, does not disclose a policy. It discloses only a preference table that contains no principle or rule. Similarly, the cited prior art does not teach a system in which one or more branch nodes specify decision criteria. The prior art does not teach decision criteria at all, and even if the information disclosed were construed as criteria, it is not specified in branch nodes. The prior art cited for Grounds 1 and 2 is distinguishable.

Grounds 3A and 3B also fail to show two limitations in the cited prior art: (A) that the policy can be implemented for “direction of network traffic,” and (B) that the one or more branch nodes specify the decision criteria to be applied. Every

one of the challenged claims includes these limitations. Unlike the prior art cited for Grounds 1 and 2, the prior art cited in Ground 3 arguably discloses a policy. But the policy disclosed is implemented before any network traffic direction, and merely forwards requests. It is not implemented for the direction of network traffic. Finally, the internal nodes described in the cited prior art are not branch nodes as claimed. They merely describe group characteristics or server attributes, and do not specify decision criteria.

Accordingly, the Petition should be denied institution on the merits because it has not shown any likelihood of a claim being unpatentable.

II. PERSON OF ORDINARY SKILL IN THE ART (POSA)

A POSA is presumed to be aware of all pertinent art. The POSA possesses the “understandings and knowledge reflected in the prior art” and thinks along conventional wisdom. *See Abbott Labs. v. Andrx Pharms., Inc.*, 452 F.3d 1331, 1336 (Fed. Cir. 2006). At this stage, PO submits that the Board does not need to resolve the appropriate level of skill for a POSA for purposes of deciding institution because the Petition fails under any articulation of a POSA.

III. CLAIM CONSTRUCTION

For purposes of this Preliminary Response, Patent Owner Sandpiper CDN, LLC (“PO”) agrees the *Phillips* standard applies. PO reserves the right to contest Petitioner’s implicit or explicit constructions during the proceeding.

IV. FACTUAL BACKGROUND

The challenged patent arises from pioneering technology directed to delivering content across a network.

A. Overview of the Technology

Content delivery networks (CDNs) provide the critical services that enable content providers like Google to quickly deliver online content to millions of consumers simultaneously over the Internet. The technology underlying these CDNs was made possible through a series of inventions developed by a California start-up called Sandpiper Software Consulting, LLC, a predecessor of Patent Owner Sandpiper CDN, LLC. EX2015, ¶25.

In the early 1990s, the World Wide Web saw increasing adoption, becoming a household staple. This mass adoption led to data congestion issues from the ever-growing number of users seeking to simultaneously access Internet content.

EX2015, ¶25. A typical computer server in the 1990s could only handle a limited number of simultaneous connections before becoming overloaded. Moreover, signals take time to traverse routers and move through content-congested internet cables. Consumers living far from the physical server(s) hosting content experienced sluggish load times and high latency due to problems such as overloaded servers, congested network segments, and geographic separation. EX2015, ¶26.

In the mid-1990s, Andrew Swart and David Farber were among the first individuals to develop services that allowed content providers to distribute their content over the Internet, while avoiding the common congestion and performance issues that plagued Internet transmission at that time. Sandpiper's solution was to deploy CDN servers around the world, replicate appropriate content from customers' origin servers to appropriate CDN servers, and transparently rendezvous end-users requesting that content to the "best" CDN server to deliver that content, all while providing their customers with control over their content and user experience. This service and its architecture were quickly imitated by many others in the industry. EX2015, ¶27.

Using solutions developed by Mr. Swart and Mr. Farber, end users would connect to an optimal edge server—one that that was closer to them or that had available capacity. Distributing content across a network of servers alleviated data congestion issues, and allowing consumers to connect to edge servers located near them reduced latency. Swart and Farber developed and built systems and methods for propagating data from origin servers to edge servers (known as "caching") based on network demand and for seamlessly routing users to the optimal edge server with the correct content. Using caching to perform the replication process within the CDN framework flew in the face of conventional wisdom. EX2015, ¶28.

In 1996, Mr. Swart and Mr. Farber founded Sandpiper Networks Inc. (“Sandpiper Networks”) to further develop and commercialize their novel concept for a content delivery network. Sandpiper Networks was based in Thousand Oaks, California. There, the inventors designed and built a CDN ultimately referred to as “Footprint.” By at least May 24, 1996, the Sandpiper team had conceived techniques for delivering static and dynamic content, including streaming resources, such as audio and video, using Sandpiper’s CDN.

Sandpiper Networks labored not only to build and implement its CDN, but also to protect their groundbreaking innovation through the patent system. Recognizing that its invention could revolutionize content delivery worldwide, Sandpiper Networks (and its successor companies, including Patent Owner) filed numerous patent applications directed to its foundational CDN technology, including the patent challenged in this Petition.

By at least May 1998, Sandpiper Networks was caching content and delivering cached content to end users of content providers using its CDN. Sandpiper Networks’ first paying customer was the L.A. Times, which paid Sandpiper Networks to host the report of Independent Counsel Ken Starr on his investigation of President Bill Clinton (“the Starr Report”) beginning on September 11, 1998. Sandpiper Networks’ CDN was capable of caching, and was

used to cache and deliver Internet resources including inter alia, pictures, text files, dynamic resources, and streaming multimedia resources.

In the early-to-mid 2000s, demand for CDNs exploded. Sandpiper Networks continued to commercialize its technology and compete in this expanding market, doing business as various entities including Digital Island, Inc. and a company called “Level 3.” It also created Patent Owner, Sandpiper CDN, LLC. Other businesses also entered the market by misappropriating Sandpiper’s innovations and directly competing with Sandpiper for market share.

One such company is Google. Google built its own in-house CDN, which uses technology described and claimed by Sandpiper’s patents. Additionally, YouTube, which Google purchased in 2006, relies upon CDN technology to meet its enormous data streaming needs, as well as for Google’s video search results (powered by YouTube). EX2001. EX2015, ¶29. Google did not license this patented technology from Sandpiper, Level 3, and/or its predecessors. Accordingly, Sandpiper brought suit against Google in district court for patent infringement. Google filed IPR Petitions against all of Sandpiper’s asserted patents in response.

B. Overview of the ’517 Patent

Expired U.S. Patent No. 8,645,517 (“the ’517 patent”) is entitled “Policy-Based Content Delivery Network Selection.” As the title suggests, a novel feature

of the invention includes a particular kind of policy for directing network traffic in an innovative way. The '517 patent claims benefit via four non-provisional applications in two family chains to U.S. Provisional Application No. 60/325,177 ("Provisional Application") filed September 28, 2001. EX2015, ¶30.

When using CDN technology, challenges arise related to network traffic associated with requests for content. For example, companies that want to provide their content to end users using a CDN face issues regarding directing network traffic to serve end users' requests. As one example, issues arise when trying to deliver content from multiple servers at geographically-separated locations with suitable end-user experiences under high traffic loads. EX2015, ¶31.

The inventors of the '517 patent understood these challenges faced by CDN providers and their customers relating to directing network traffic and end-user requests for content. The inventors devised solutions utilizing Domain Name Server ("DNS") technology and allowing for the resolution of requests to multiple CDNs based on various policies. Embodiments of the disclosed invention solve network traffic issues, such as server failure and controlling the distribution of requests according to economic or contractual parameters, by providing a network distribution infrastructure that can be configured with network traffic rules. These rules can account for factors like server availability, geolocation, load, and latency.

The '517 patent addresses specific needs in the art via specific combinations, which were not conventional at the time of the invention of the '517 patent, and the '517 patent describes how specific technical solutions are achieved. For instance, content providers must address how to handle requests from end users, in some cases in accordance with policy constraints faced by the content providers, even as network conditions affecting the Internet are subject to change. EX2015, ¶32. The inventors of the '517 patent developed methods to address these issues, including methods in which a server network implements policy-based traffic direction. For example, embodiments of the invention in the '517 patent provide a specific graphical user interface for obtaining at least one policy for the direction of network traffic, such as using a decision tree with resource and branch nodes. The various criteria that can be used may relate to IP addresses or geographic zones, with answers consisting of IP addresses and CNAMEs, for example. EX2015, ¶33.

C. Prosecution History of the '517 Patent

The '517 patent was filed on December 24, 2010 and reflects the product of a thorough prosecution on the merits, including multiple office actions and substantive discussions concerning the prior art across the family of applications. It claims priority to two lines of applications that similarly received substantive examinations. EX2015, ¶34. It was initially rejected in a Non-Final Office Action dated March 11, 2013. In this Non-Final Office Action, claims 2-5, 10-13, 18, and

19 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,484,261 to Wiegel. Claims 9 and 17 were similarly rejected under 35 U.S.C. § 103(a) as being unpatentable over Wiegel view of U.S. Publication No. 2002/0145975 to McLampy. Claims 6, 7, 14, 15, 20 and 21 were rejected under § 103(a) over Wiegel in view of U.S. Patent No. 6,092,178 to Jindal. Claims 8 and 16 were rejected under § 103(a) over Wiegel in view of U.S. Patent No. 6,052,788 to Wesinger. EX1002, 64-72.

Patent Owner overcame that rejection by explaining the novel features of the claims that were not present in the primary reference, Wiegel. EX2015, ¶35. Specifically, Wiegel did not disclose “having one or more resource nodes specify one or more answers to be provided in response to a Domain Name Service (DNS) request.” EX1002, 55. This unique node structure and function could not be found in the prior art. The Office then allowed the claims. *Id.*, 40; EX2015, ¶36.

The prosecution history of the '517 patent further shows that many of the references cited in the Petition were considered and even applied in rejections in predecessor applications. In particular, the Ben-Shaul reference cited in the Petition, *see* Pet., 2, 39-74, was applied in rejections during the prosecution of U.S. Application No. 10/259,497 (“’497 application”) and U.S. Application No. 11/932,162 (“’162 application”) in the priority chain. *See* EX2002; EX2003; EX2015, ¶37.

Patent Owner overcame the rejection in the '497 application by including the novel features of the claims indicated as allowable subject matter by the Examiner (“[c]laims 14 [and] 15 ... are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims”) that were not present in the Ben-Shaul reference. *See* EX2002, 239, 290-297 (“[c]laim 10 has been amended to include the subject matter of objected-to claim 15,” indicated as allowable subject matter by the Examiner, namely “a monitored server, wherein an availability of the monitored server is dynamically monitored” and/or “a managed server, [wherein] ... a load share or a shed fraction of the managed server is defined dynamically”). Ben-Shaul’s lack of dynamic monitoring and server management also distinguish it from the policy and policy-based features of the ’517 patent claims. EX2015, ¶38.

Patent Owner also overcame that rejection in the related ’162 application by explaining that Ben-Shaul did not disclose or suggest “any such dependent relationship between the receipt of a client request for a domain name resolution, on one hand, and the retrieval of policies from a name server’s policy database and the selection of a network based on those retrieved policies, on the other.” *See* EX2003, 1316; EX2015, ¶39. The Examiner then allowed the claims based on the amendments of the above features. *See* EX2003, 1331 (“[T]he ‘120 reference does

not disclose the Applicant's invention as claimed in detail, such as receipt of a client request to resolve a domain name at a name server, the policy database being on the name server and selecting either the CDN or subscriber server. The '120 reference appears to be drawn to formatting content of a web page rather than load sharing/balancing of a network."). The specific role of the policy and policy-based features in the '517 claims similarly distinguishes Ben-Shaul. EX2015, ¶40.

V. LEGAL STANDARDS

In an IPR, "the burden of proving a proposition of unpatentability" is borne by (and remains at all times with) the petitioner. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016). To satisfy its burden, a petitioner must "articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness"—"mere conclusory statements" will not suffice. *Id.* at 1380. Indeed, "[i]t 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.'" *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (quoting 35 U.S.C. § 312(a)(3)).

"An obviousness determination requires finding that a [POSA] would have been motivated to combine or modify the teachings in the prior art *and* would have had a reasonable expectation of success in doing so." *Regents of the Univ. of Cal.*

v. Broad Inst., Inc., 903 F.3d 1286, 1291 (Fed. Cir. 2018); *Intelligent Bio-Sys.*, 821 F.3d at 1367-68; *see also, e.g., NJOY, LLC v. JUUL Labs, Inc.*, IPR2024-00536, Paper 17 (PTAB Aug. 12, 2024) (denying institution where petitioner did not show a reasonable expectation of success in combining the asserted references); *Honeywell Int’l Inc. v. DSM IP Assets B.V.*, IPR2024-00493, Paper 7 (PTAB Aug. 21, 2024) (same).

“[O]bviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015). The fact that the combination might have been successful does not mean that a POSA would have been motivated to make the combination. *See id.* It is not sufficient “for obviousness that a variation of the prior art would predictably work, but requires consideration of whether, in light of factors such as ‘design incentives and other market forces,’ the hypothetical skilled artisan would recognize the potential benefits and pursue the variation.” *Id.* at 1075 (citing *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 417 (2007)).

VI. PETITIONER’S PRIORITY CHALLENGE FAILS.

The Petition first presents a priority date challenge, and then presents every single prior-art reference as alternatively prior art under 35 U.S.C. § 102(b) or § 102(e) based on the success of that priority challenge. *See Pet.*, 8 (“Accordingly,

under the actual October 26, 2007, priority date, each of these references are prior art under 35 U.S.C. §102(b). But each reference was filed before the claimed September 28, 2021, priority date, and remains prior art under 35 U.S.C. §102(e) under any priority date.”); EX2015, ¶52.

The Petition alleges that no claim of the ’517 patent is entitled to a priority date before October 26, 2007 (the 2007 CIP filing date), at least because neither the 2002 Application nor the Provisional Application describes “one or more resource nodes [being] ... mail exchange (MX) records,” as recited in each of the independent claims. *See* Pet., 7. The Petition further alleges that the “mail exchange” and/or “MX” was first introduced in the 2007 CIP. *Id.*; EX2015, ¶53.

Petitioner misconstrues the record. An MX record (*e.g.*, Mail Exchanger record) is a type of Domain Name System (DNS) record that specifies which mail server is responsible for accepting email messages on behalf of a domain. EX2015, ¶54. Specifically, the ’517 patent discloses “[r]esources are used to specify the ATC answers to DNS queries” and lists at least five types of resource nodes—IP addresses, CNAME records, MX records, NS records, and Load sharing server sets. *See* EX1001, 9:30-43. A POSA would have understood that similar to other types of the resource nodes, the MX record functions as an address for the email domain, telling other servers where to deliver emails addressed to that specific domain. EX2015, ¶54. The ’517 patent further presents “[t]hose skilled in the art

will understand, upon reading this description, that different and/or other resource nodes may be used.” *See* EX1001, 9:44-46; EX2015, ¶54.

Accordingly, the Provisional Application has written description on at least IP addresses, CNAME records, and/or NS records. *See* EX1011, ¶¶[0067]-[0069]; EX2015, ¶55. As discussed above, a POSA would have understood, upon reading the Provisional Application, that the inventors were in possession of a system in which MX records and/or resource nodes are used to “activate ... the ATC system.” EX1011, ¶¶[0067]-[0069]; EX2015, ¶¶56–57.

The Board will therefore need to resolve the Petition’s challenge to the written description in the priority documents before it can provide the statutory basis for its unpatentability analysis. The Board should find that the Petition’s priority date challenge fails because there is written description support for all of the claims in the Provisional Application, which is then properly carried forward to the ’517 patent disclosure.

VII. GROUNDS 1 AND 2 FAIL AT LEAST BECAUSE THE CITED PRIOR ART DOES NOT TEACH OR SUGGEST TWO CLAIM LIMITATIONS.

Grounds 1 and 2 rely on prior art that fails to teach or suggest two limitations of the claims: (A) the “policy” features, and (B) “the one or more branch nodes specify the one or more decision criteria.” Every one of the

challenged claims includes these limitations, and their absence from the prior art dooms both Grounds 1 and 2 twice over.

A. The cited prior art does not teach the claimed “policy” features.

The Petition relies on prior art that fails to teach or suggest the “policy-based” or “at least one policy” limitations of the claims. The unique policy described and claimed in the ’517 patent directs network traffic in an innovative way not found in the prior art. That these claimed unique policy limitations are missing from the cited prior art precludes any likelihood of success on Grounds 1 or 2. EX2015, ¶58.

Independent claims 1, 9, and 17 (all independent claims) recite various features involving a “policy,” specifically:

A [(1) method/(9)administrative agent/(17)system], operable in a framework in which an adaptive traffic control name server network **implements policy-based traffic direction**, the name server network comprising at least one domain name server comprising hardware in combination with software and constructed and adapted **to provide adaptive policy-based domain name service**, the method comprising:

...

(B) using said GUI to obtain at least one policy for direction of network traffic, wherein the GUI supports the setting of said at least one policy using a decision tree representing rules; and

(C) providing said at least one policy to the name server network,
wherein the decision tree comprises one or more resource nodes, and
one or more branch nodes, wherein the one or more resource nodes
specify one or more answers to be provided in response to a Domain
Name Service (DNS) request, and wherein . . .

EX1001, 31:24-56. The '517 patent is clear that a “policy” or a “policy-based”
feature generally refers to a course, rule, or principle of action. *See* EX1001, 1:43-
2:7 (“This invention solves these and other problems by providing a means to
distribute network (e.g., Internet) traffic according to a configurable set of rules.”);
EX2015, ¶59.

In the context of these claims, it is a course, rule, or principle of action to
direct traffic of the underlying servers. EX1001, 1:43-2:7 (“These rules together
provide an extremely fine-grained level of network Internet traffic control to
providers of Internet content and applications”); EX2015, ¶59. The policy or
policy-based features make decisions based on the geographical locations and the
capacities of the underlying servers in the subscriber’s network to manage and
direct traffic. *See* EX1001, 6:33-44 (“For example, the subscriber may set up
policies to direct traffic with respect to considerations such as the geographical
locations and the capacities of the underlying servers in the subscriber’s network
... .”), 7:13-21 (“Decisions are based on location of the end-user or an approximate
thereof, e.g., using the IP address of an end-user’s resolver”), 7:22-28 (“The

subscriber can explicitly specify the amount of traffic (load share) to be directed to each of their servers within a defined server set in the subscriber server network”); EX2015, ¶60.

Importantly, the “policy” or “policy-based” features are structurally and functionally different from the “geographical locations and the capacities of the underlying servers,” EX1001, 6:33-36, that the policy features use. In other words, the policy governs the process, while the geographical locations and the capacities of the underlying servers are the inputs that the policy uses to determine traffic direction. *See* EX1001, 6:33-44, 15:28-35; EX2015, ¶61.

The ’517 patent further illustrates what it means by “policy” and “policy-based” course, rule, or principle of action through several examples. *See* EX1001, 7:13-8:25. One example is a “geographic policy,” in which decisions are based on the location of the end-user or an approximate thereof, *e.g.*, using the IP address of an end-user’s resolver. *See* EX1001, 7:13-21. In this example, the policy or policy-based course, rule, or principle of action is interpreted as “if the IP address is within the U.S., the request may be directed to a ‘domestic’ group of servers in the subscriber server network 104, otherwise it may be directed to ‘international’ servers in the network.” *Id.*; EX2015, ¶62.

The cited prior art does not disclose this kind of policy or policy-based feature at all. In Ground 1, Petitioner relies entirely on Beaumont (EX1007), as

disclosing the policy for all of the policy-based limitations of the claims. Pet., 2, 9-34. Petitioner points to a preference table (*see* Beaumont’s Figure 2 below) including locations, capabilities, or statuses of a server for allegedly teaching the recited “policy-based” or “at least one policy” features. Petitioner argues that “Beaumont’s method operates in a ‘data network’ (framework) including a content provider DNS server that directs requests (traffic) **according to a configurable preference table (policies).**” *See* Pet., 15; EX2015, ¶63.

	C1	C2	C3	C4 (optional)	C5 (optional)	C6 (optional)
	Delivery Server Address	Destination Domain	Estimated Distance (milliseconds)	number of times being selected per hour	Health	Time-To-Live (minutes)
R1						
R2	152.192.16.15	182.192	100	100	Working	1
R3	153.192.16.15	182.192	90	90	Down	2
R4	154.192.16.15	182.192	10	10	Working	9
R5	155.192.17.15	155.192	20	20	Working	8
R6	156.192.17.15	156.192			Working	1
R7	157.192.17.15	156.192	50	50	Working	5
R8	158.192.17.15	156.192	70	70	Working	3

EX1007, FIG. 2.

A preference table is not a policy. Beaumont’s preference table has none of the structure of the claimed policy, which is characterized by a conditional and a result. *See* EX1001, 8:55-56, 15:28-32, 16:5-7. Nor does the preference table of Beaumont function like the claimed policy. EX2015, ¶64. Beaumont’s preference table merely records locations, capabilities, or statuses of a server, such as delivery

serve address, destination domain, estimated distance, number of times being selected per hour, health, and time-to-live. *See* EX1007, FIG. 2. It is a listing of information. It does not provide the claimed course, rule, or principle of action. It does not govern any process or direct the traffic of the underlying servers as claimed. Indeed, the information recorded in Beaumont's preference table could be used to inform a policy—but Beaumont does not teach this nor does Beaumont disclose any kind of policy that could use this information in action. EX2015, ¶65.

Put another way, what is missing from Beaumont is any disclosure of how the information in the table could be used to direct network traffic. EX2015, ¶66. In the '517 patent claims, the information is used to navigate a decision tree by following the policy rules. *See* EX1001, 7:13-21, 9:13-25. The information in Beaumont's preference table could be used by a policy to determine which group of servers to direct the request, but Beaumont's preference table itself does not expressly or inherently disclose any policy. The preference table only discloses the IP address. There is no action or rule for directing such an IP address from the preference table. EX2015, ¶67.

The other reference cited in Grounds 1 and 2, Hasan, is cited for other limitations of the independent claims. Pet., 2, 9-39. The Petition does not rely on Hasan for any disclosure of policies or policy-based features. Nor does it disclose the claimed policy in any event. Biliris is cited only in Ground 2 and only for

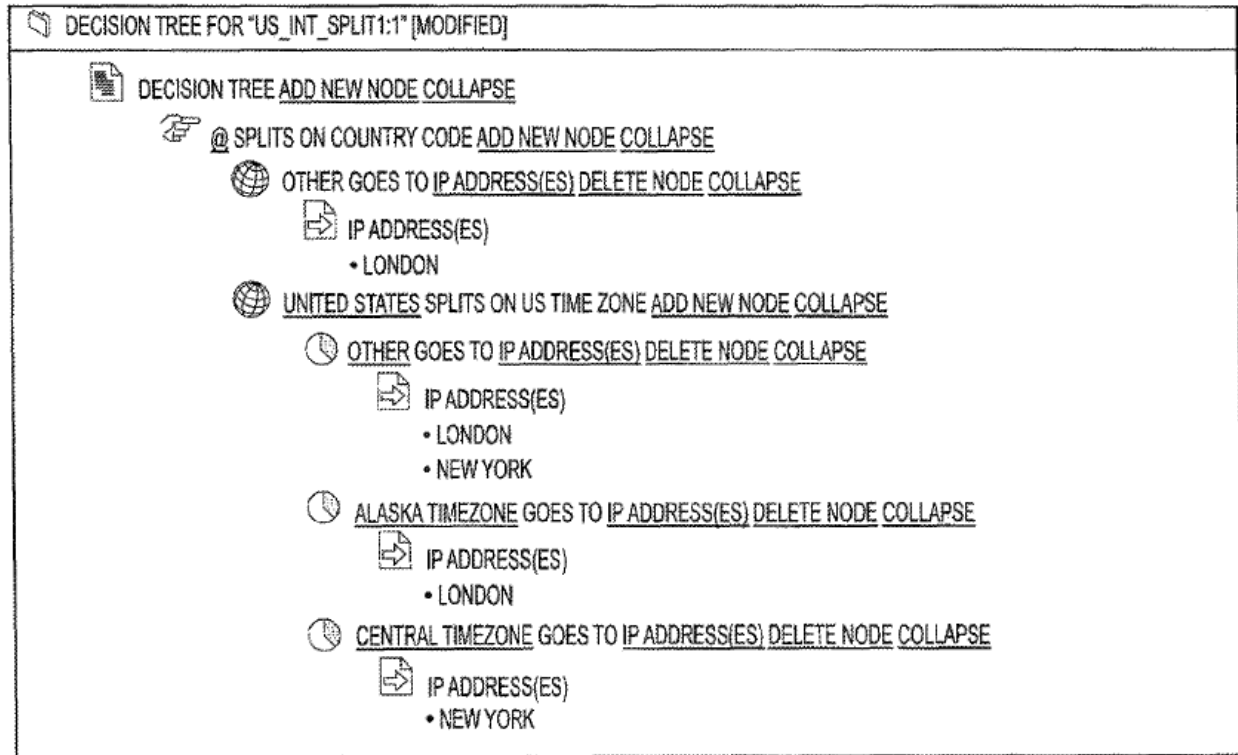
dependent claims. Pet., 2, 35-39. The purported combinations in Grounds 1 and 2 therefore do not disclose this limitation. The absence of at least these claimed “policy” limitations from the prior art defeats any likelihood that Grounds 1 or 2 will prevail. EX2015, ¶68.

B. The cited prior art does not teach or suggest “the one or more branch nodes specify one or more decision criteria to be applied.”

Neither Beaumont nor Hasan discloses the limitation, “the one or more branch nodes specify one or more decision criteria to be applied,” that appears in all independent claims. Petitioner points to a table as satisfying the decision criteria, but the table does not have any criteria. Beaumont never explains how the table is used, and Petitioner’s expert never explains how the table constitutes decision criteria as claimed. EX2015, ¶69.

Specifically, independent claims 1, 9, and 17 recite “wherein the one or more branch nodes specify one or more decision criteria to be applied ... (ii) one or more decision criteria for the one or more branch nodes.” *See* EX1001, 31:24-56. This claim limitation basically has two elements: (1) the decision criteria to be applied, and (2) the one or more branch nodes needed to specify the criteria. EX2015, ¶70. The ’517 patent makes clear that “decision criteria to be applied” are criteria for selecting or grouping different servers. *See* EX1001, 9:6-8, FIGs. 10(a)-(o); *see also* EX1001, 7:37-39 (“It may also alternatively instruct the ATC framework to direct traffic to servers other than the primary servers.”). For

example, in Figure 10(b) of '517 patent shown below, the recited “decision criteria” is interpreted as “SPLITS ON COUNTRY CODE” and/or “SPLITS ON US TIME ZONE.” Also, in this example, these “decision criteria” need to be specified in the branch node of the decision tree in Figure 10(b). EX2015, ¶71.



EX1001, FIG. 10(b).

Petitioner relies on Beaumont’s content provider DNS server for allegedly teaching sharing the destination domain of the client. *See* Pet., 19. Petitioner then suggests that sharing the destination domain satisfies the “decision criteria” limitation because it provides “answers” in response to a DNS request, according to the configurable preference table shown above in Beaumont’s Figure 2. *Id.*; EX2015, ¶72.

Petitioner further relies on content delivery servers represented in rows R2, R3, and R4 in Beaumont's Figure 2 for allegedly teaching a "decision criterion" to group the content delivery servers under the same destination domain, and the destination domain would act as a decision criterion. *See* Pet., 20. Beaumont's teaching that "content delivery servers identified in column C1 of rows R2, R3, and R4" can be grouped under the same destination domain, *see* EX1007, ¶28, however, does not disclose a decision criterion as claimed. That is because Beaumont does not teach or suggest that "one or more decision criteria to be applied"—which is interpreted as "content delivery ... mapped to the same destination domain," *id.*—needs to be specified by "the one or more branch nodes." EX2015, ¶73.

Petitioner argues that Beaumont suggests a "decision criterion" in its depiction of rows R2, R3, and R4 in the configurable preference table (Beaumont's Figure 2) because they "are mapped to the same destination domain, 182.192." Pet., 19-20. But the elements of rows R2, R3, and R4 of Beaumont's preference table are—at most—listings of the locations, capabilities, or statuses of a server. *See* EX1007, FIG. 2; EX2015, ¶74. That one can map them to their destination domains does not indicate why they are mapped and what criteria were used to make that decision. Accordingly, the preference table listings do not provide the claimed *criteria* for selecting and grouping different content delivery servers.

EX2015, ¶75. For the sake of argument, even if Beaumont's selection for rows R2, R3, and R4 was based on grouping different content delivery servers based on the shortest estimated distance to the client, then that selection instruction would need to be explicitly specified in the "one or more branch nodes" associated with the preference table (Beaumont's Figure 2), as claimed in '517 patent. *See* Pet., 20; *compare* EX1007, FIG. 2, *with* EX1001, FIG. 10(b). Clearly, Beaumont's configurable preference table does not have this teaching or suggestion in any way. EX2015, ¶76.

Hasan does not cure the deficiencies of Beaumont with respect to at least the above recited features. Petitioner relies on Beaumont's content provider DNS server in view of Hasan's GUI that provides "a hierarchical layout" in a "familiar tree structure, with ... the branches being the facilities, subscribers, devices and log servers" for allegedly teaching the recited "one or more branch nodes" that specify "one or more decision criteria to be applied." *See* Pet., 19-20. In particular, the Petition argues that when incorporated into Beaumont's network, higher-level branches in Hasan's GUI may represent decision criteria and sub-branches in Hasan's GUI may represent individual delivery servers that fulfill the decision criteria and are thus "answers" provided in response to a DNS request. *Id.*; EX2015, ¶77.

However, neither Beaumont nor Hasan (alone or in combination) teaches or suggests that the “one or more decision criteria”—referring to the above-noted grouping instruction—have to be explicitly specified in the “one or more branch nodes” (or in any of the higher-level branches or sub-branches as disclosed by Hasan). In other words, these references are missing the teaching that the “one or more decision criteria” are specified in the structures that Petitioner alleges to be the “one or more branch nodes.” Hasan’s GUI does not have that teaching or suggestion among its branches, as there are no criteria in this GUI at all. This failure is a separate and independent reason why Grounds 1 and 2 cannot succeed on the merits. EX2015, ¶78.

VIII. GROUNDS 3A AND 3B FAIL AT LEAST BECAUSE THE CITED PRIOR ART DOES NOT TEACH OR SUGGEST A POLICY THAT CAN BE IMPLEMENTED FOR “DIRECTION OF NETWORK TRAFFIC.”

Grounds 3A and 3B fail to show two limitations in the cited prior art: (A) the policy that can be implemented for “direction of network traffic,” and (B) the one or more branch nodes specify the decision criteria to be applied. Every one of the challenged claims includes these limitations, and their absence from the prior art dooms both Grounds 3A and 3B twice over.

A. The cited prior art fails to teach or suggest a policy that can be implemented for “direction of network traffic.”

The prior art of Grounds 3A and 3B does not teach or suggest at least the claimed “policy-based” or “at least one policy” can be implemented for “direction of network traffic.” As discussed above for Grounds 1 and 2, independent claims 1, 9, and 17 recite multiple “policy-based” or “at least one policy” features. These limitations further specify that the system or method “implements *policy-based traffic direction* ... using said GUI to obtain at least one *policy for direction of network traffic*.” EX1001, 31:24-56, 33:9-34:16. As discussed for Grounds 1 and 2, above, a policy is a course, rule, or principle of action. *See* Section VII.A; EX1001, 1:43-2:7; EX2015, ¶79.

Petitioner relies on Ben-Shaul’s EdgeDNS servers for allegedly teaching the recited “policy-based” or “at least one policy” for “direction of network traffic.” Pet., 45, 47, 48. In particular, Petitioner alleges that each Ben-Shaul’s EdgeDNS server “receives DNS requests and ‘is responsible to return the IP address’ of the appropriate content server based on ‘edge server policy.’” *Id.* Petitioner further alleges that Ben-Shaul’s front edge tool GUI is for direction of network traffic and supports the setting of policies using a decision tree representing rules. *Id.*; EX2015, ¶80.

As noted above, the Office already considered this teaching in Ben-Shaul and ultimately allowed the claims of both of the ’517 patent’s predecessor patents

based on similar distinguishing claimed subject matter found in the '517 patent claims. *See* EX2002, 784; EX2003, 1331. Accordingly, when the Office considered the claims that issued to become the '517 patent, it was clearly aware of Ben-Shaul and its relevance to the then pending claims. The argument that Petitioner makes now is very similar to the argument that the Examiner previously made, *see* EX2002, 232-241; EX2003, 1237-1303—and Patent Owner previously overcame, *see* EX2002, 290-291; EX2003, 1315-1319—for two related patents with similar distinguishing claimed subject matter. EX2015, ¶81.

Specifically, Petitioner argues that Ben-Shaul's EdgeDNS servers "provide ... policy-based domain name service." Each receives DNS requests and "is responsible to return the IP address" of the appropriate content server based on "edge server policy." This service is allegedly "adaptive" in that requests are handled dynamically based on network conditions. *See* Pet., 45-46. Petitioner argues that Ben-Shaul's edge server "leaves" "specify one or more answers to be provided in response to a Domain Name Service (DNS) request" because an IP address for a selected server is provided as an answer to a DNS request. *See id.*, 53. The Petitioner further argues Ben-Shaul discloses a specification of a particular edge server (an answer) for the one or more resource nodes in which the edge server should be returned under particular conditions. *See id.*; EX2015, ¶82.

Likewise, in the prosecution history of '497 application, the Examiner argued that Ben-Shaul discloses “the policies are dynamically adjusted ... and the policies of the edge servers affect the operation of the domain name servers and thus the resolution of a domain name by the domain name server are influenced by these policies.” EX2002, 239-240. The Examiner further argued that Ben-Shaul discloses “EdgeDNS which provides dynamic domain name resolution based on policies.” EX2002, 240; EX2015, ¶83. The argument that Petitioner makes significantly overlaps with the argument the Examiner previously made in examining the '497 application, both of which suggest that operations or DNS requests of the domain name servers are influenced or based on edge server policy. Accordingly, the Office was already aware of—and Patent Owner already overcame—Petitioner’s argument.

Furthermore, in the prosecution history of the '162 application, the Examiner argued that Ben-Shaul discloses “local server/edge server or another distinct origin site that is selected to provide the resource based on some condition (i.e. policy).” EX2003, 1245. The Examiner further argued that Ben-Shaul discloses “resolving a client request to resolve a domain name, selecting either an edge server or origin server to provide the content provider resources, wherein such selection is based in part on a policy (i.e. preferences, specified policy, policy of load balancing.” EX2003, 1246. The Examiner also contended that Ben-Shaul

discloses “content provider can establish ‘policies’ to control which network element distributes the resource.” EX2003, 1247; EX2015, ¶84. The argument that Petitioner makes here essentially repurposes the argument the Examiner previously made in examining the ’162 application, as both compare Ben-Shaul’s edge server functionality to the claimed policies. That the Office did not apply this same rejection—which Patent Owner twice overcame—to the ’517 patent indicates that the Office did not find it compelling. EX2015, ¶85.

On the merits, Ben-Shaul does not teach or suggest the recited “policy-based” or “at least one policy” features of the ’517 patent claims, particularly the feature that the claimed policy is implemented for “direction of network traffic.” In Ben-Shaul, the “edge server policy” is an entirely different network functionality than that of the policy recited in the claims. *See* EX1005, ¶¶41, 176-177; EX2015, ¶86.

Ben-Shaul’s edge server policy may control which resources zones are directed to the edge servers, *see* EX1005, ¶41, but it does not produce any decision for direction of network traffic. Ben-Shaul’s “edge server policy” that redirects requests to the regional site is only the first step of the request redirection process. *Id.*, ¶181. Ben-Shaul’s “first step request direction” is not the recited “direction of network traffic.” Ben-Shaul’s first step request direction (redirected by the edge server) takes place *prior to* interactions between origin servers and edge servers,

and then merely forwards these requests to certain resource zones. *See id.*, ¶41.

Contrastingly, the “network traffic” recited in the ’517 patent is “[an] amount of load share,” and “[t]he load share for a given server represents the amount of traffic that will be sent to that server within the same tier of the server set.” *See* EX1001, 7:22-28, 11:56-58; EX2015, ¶87.

As described in the ’517 patent, “[t]he shed fraction for a given server represents the percentage of traffic that should be redirected away from the server. The redirection may be carried out after load share is made based upon load share policies.” EX1001, 22:38-41. The specification thus makes clear that to obtain the load share “to be directed to each of their server[s] within a defined server set,” the direction of network traffic (load share) requires *interactions* between different servers for making the load share. *See id.*, 7:22-25. Because the “direction of network traffic” with interactions between servers is not the “first step” of Ben-Shaul’s redirection process, Ben-Shaul’s “edge server policy” is not a policy or policy-based feature as recited in the ’517 claims. EX2015, ¶88.

As another example, “[p]artial failover or tiered failover policies ... govern the traffic re-direction process when functioning servers in a server group are overloaded or failed.” EX1001, 8:52-54. Clearly, the recited “direction of network traffic”—which is carried out after load share is made or when functioning servers in a server group are overloaded or failed—is not Ben-Shaul’s “first step request

direction.” As such, Ben-Shaul’s policies—which have implied the “first step request direction”—do not have the teaching or suggestion of the recited “policy-based” or “at least one policy” that can be implemented for “direction of network traffic” in any way. EX2015, ¶89.

Hasan does not cure the deficiencies of Ben-Shaul with respect to the above recited features. As discussed above, Hasan discloses a GUI for defining “configuration data and policy information” for servers within a network. EX1006, 7:12-21, 6:59-63. Petitioner relies on Hasan’s GUI for “configuring network objects to be a suitable option for the ‘highly graphical’ tools referenced in Ben-Shaul for policy setting, particularly in view of Ben-Shaul’s directive to utilize GUIs to ease policy construction.” Pet., 42-43. However, since Ben-Shaul does not disclose the recited “policy-based” or “at least one policy” that can be implemented for “direction of network traffic” as described above, combining Hasan’s GUI does not cure the deficiencies of Ben-Shaul. EX2015, ¶90.

B. The cited prior art does not teach or suggest that “the one or more branch nodes specify one or more decision criteria to be applied.”

As discussed above for Grounds 1 and 2, independent claims 1, 9, and 17 recite at least the “one or more branch nodes specify one or more decision criteria to be applied.” This limitation basically has two elements: (1) the decision criteria

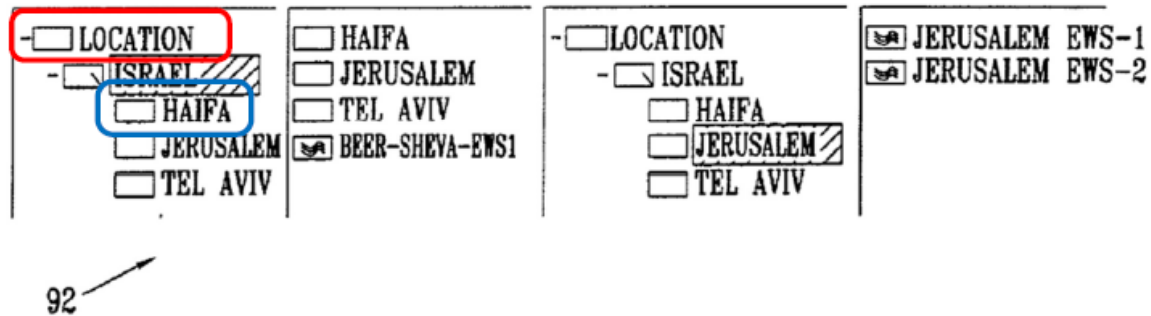
to be applied, and (2) the one or more branch nodes needed to specify the criteria.

EX2015, ¶91.

The '517 patent makes clear that the “decision criteria to be applied” are criteria for selecting or grouping different servers. *See* EX1001, 7:37-39 (“It may also alternatively instruct the ATC framework to direct traffic to servers other than the primary servers.”); *see* EX1001, 9:6-8, FIGs. 10(a)-(o). For example, as shown in Figure 10(b) of the '517 patent below, the recited “decision criteria” is interpreted as “SPLITS ON COUNTRY CODE” and/or “SPLITS ON US TIME ZONE.” Also, in this example, these “decision criteria” need to be specified in the branch node of the decision tree in Figure 10(b). EX2015, ¶92.

In Grounds 3A and 3B, Petitioner relies on Ben-Shaul’s GUI (with decision tree structure having internal nodes) for allegedly teaching the recited “branch nodes” that represent logical aggregations of nodes. *See* Pet., 53. Petitioner further alleges that the groups defined by the internal nodes “specify one or more decision criteria to be applied,” because they “represent logical aggregations of nodes” based on a particular decision criteria. *Id.*; EX2015, ¶93.

FIG. 10



EX1005, FIG. 10 (annotated).

Petitioner misinterprets Ben-Shaul’s GUI “internal nodes” (*e.g.*, “LOCATION” in Figure 10) as the claimed branch nodes. Petitioner argues that Ben-Shaul’s internal nodes “represent[] logical aggregations of nodes” and further alleges that “[a]dministrators may construct a group based, *e.g.*, on region, as shown in Fig. 10 ([Ben-Shaul], [0039], [0309]) such that policies are applied to any edge server within the group ([Ben-Shaul], [0285], [0289], [0308], [0309]).” Pet., 53. In addition, Petitioner alleges that “[a] DNS request is thus directed to an edge server based on that server’s association with the group. *Ben-Shaul*, [0044].” Pet., 53; EX2015, ¶94.

Petitioner further interprets that the internal nodes “specify one or more decision criteria to be applied,” because DNS requests may be routed according to group characteristics of edge servers such as “region, language, interest, organization type, security level, edge server specification and capabilities, communication speeds, subgroups, type of events, etc.” *See* Pet., 55; EX2015, ¶95. However, the group characteristics of Ben-Shaul’s edge servers (*see, e.g.*,

“LOCATIONS” characteristic in Ben-Shaul’s Figure 10) are not the recited “decision criteria” as described in the ’517 patent. *See* EX1001, 9:6-8, FIG. 10(a)-(o). As indicated by the ’517 patent, the decision criteria for selecting or grouping different servers has to be specified in these internal nodes. *Id.* These group characteristics may, at most, be interpreted as server attributes, which are entirely different from the recited “decision criteria.” EX2015, ¶96.

Even if, for sake of argument, Ben-Shaul’s group characteristics were considered to be “decision criteria” as claimed in the ’517 patent, then Ben-Shaul would require these decision criteria to “*construct* a group based, e.g., on region.” *See* Pet., 53; EX1005, ¶¶39, 309. In other words, to the extent Ben-Shaul can be interpreted to teach decision criteria at all, Ben-Shaul’s group characteristics would need to group the edge servers with a group, i.e. to “construct a group based, e.g., on region.” *See* Pet., 53. It does not. That is because the criteria for selecting the different servers in Ben-Shaul are not explicitly specified in Ben-Shaul’s internal nodes. EX2015, ¶97.

Hasan does not cure the deficiencies of Ben-Shaul with respect to the above recited features. Petitioner alleges that a POSA would have been motivated to combine Hasan’s GUI teachings with Ben-Shaul to provide a GUI for setting policies, and that the combined Ben-Shaul-Hasan GUI includes a decision tree with resource nodes and branch nodes as claimed. *See* Pet., 54. In particular,

Petitioner argues that when combined with Ben-Shaul, higher-level branches in Hasan's GUI may represent regions or groups, such as Israel, and sub-branches in Hasan's GUI may represent edge servers. *Id.*; EX2015, ¶98.

However, neither Ben-Shaul nor Hasan teaches or suggests the “one or more decision criteria”—referring to the above-noted selecting or aggregating instruction—must be explicitly specified in the “one or more branch nodes” (or in any of the higher-level branches or sub-branches as disclosed by Hasan). Clearly, Hasan's GUI does not have the teaching or suggestion in any way. EX2015, ¶99.

IX. CONCLUSION

The Board should deny institution of the Petition for *inter partes* review of the '517 patent.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Jason D. Eisenberg/

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

Daniel Block, Reg. No. 68,395

Kristina Caggiano Kelly, Reg. No. 58,164

Xinxiang Zhang, Reg. No. 82,382

Counsel for Patent Owner

Date: August 13, 2025

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's Brief on Discretionary Denial complies with the type-volume limitation of 14,000 words, comprising 7,413 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Patent Owner's Brief on Discretionary Denial 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: August 13, 2025

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 PRELIMINARY RESPONSE** and associated Exhibits 2015-2016 were served in their entirety on August 13, 2025, 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
Daniel C. Tucker (Back-Up Counsel)	daniel.tucker@finnegan.com
Christopher B. Anderson (Back-Up Counsel)	christopher.anderson@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: August 13, 2025

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