

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

UMBRA TECHNOLOGIES LTD.,
Patent Owner.

IPR2024-00270
Patent 11,108,595 B2

Before ST. JOHN COURTENAY, III, MICHAEL R. ZECHER, and
GREGG I. ANDERSON, *Administrative Patent Judges*.

ANDERSON, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Cisco Systems, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–20 (“the challenged claims”) of U.S. Patent No. 11,108,595 B2 (Ex. 1001, “the ’595 patent”). Petitioner also filed a Declaration of Dr. A.L. Narasimha Reddy with the Petition. See Ex. 1003. UMBRA Technologies Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Claims 1–14 were disclaimed by Patent Owner on June 17, 2024. Ex. 3001 (“Disclaimer”). Consequently, only claims 15–20 remain pending for our consideration. See Prelim. Resp. 15; see also 37 C.F.R. § 42.107(e) (“No *inter partes* review will be instituted on disclaimed claims”).

We have authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Upon consideration of the Petition, the Preliminary Response, and the evidence of record, for the reasons given below we determine there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one challenged claim of the ’595 patent.

Accordingly, we institute an *inter partes* review of claims 15–20 of the ’595 patent based upon the asserted grounds of unpatentability set forth in the Petition challenging these claims. Pet. 18.

B. Related Proceedings

The parties identify the following related district court cases involving the '595 patent: *Umbra Technologies Ltd. (UK) v. Cisco Systems, Inc.*, No. 1:23-cv-00903-DII (W.D. Tex.); *Umbra Technologies Ltd. (UK) v. VMware, Inc.*, No. 1:23-cv-00904-DII (W.D. Tex.). Pet. 57; Paper 5, 2.

C. Real Parties-in-Interest

Petitioner identifies itself, Cisco Systems, Inc., as the real party-in-interest. Pet. 57. Patent Owner identifies itself, UMBRA Technologies Ltd., as the real party-in-interest. Paper 5, 2.

D. The '595 Patent

The '595 patent is entitled “Systems and Methods for Providing a Global Virtual Network (GVN).” Ex. 1001 at code [54]. The application for the '595 patent was filed August 24, 2020, as U.S. Patent Application No. 17/000,997 (“’997 application”). *Id.* at codes [21, 22]. The '997 application is a continuation of U.S. Patent Application No. 15/563,253, filed April 7, 2016, now U.S. Patent No 10,756,929. *Id.* at code [63]. The '997 application claims the benefit of and priority to U.S. Provisional Patent Application No. 62/144,293, filed on Apr. 7, 2015, and U.S. Provisional Patent Application No. 62/151,174, filed on Apr. 22, 2015. *Id.* at 1:9–14.

1. Technical Background

High latency results in delays that cause online systems to perform poorly and possibly cease functioning. Ex. 1001, 1:27–32. Prior art solutions include wide area network (WAN) optimization, which requires “a hardware (HW) device at the edge of a local area network (LAN) which builds a tunnel to another WAN optimization HW device at the edge of

another LAN, forming a wide area network (WAN) between them.” *Id.* at 1:38–45. Other approaches include direct point to point (POP) connections between LANs, which are expensive and require time to install. *Id.* at 1:59–64. When connections require a gateway (GW) to the general Internet, latency increases. *Id.* at 1:67–2:18.

Another option for creating WAN links from one LAN to another LAN involve the building of tunnels such as IPsec or other protocol tunnels between two routers, firewalls, or equivalent edge devices. These are usually encrypted and can offer compression and other logic to try to improve connectivity. There is little to no control over the routes between the two points as they rely on the policy of various middle players on the internet who carry their traffic over their network(s) and peer to other carriers and/or network operators.

Ex. 1001, 2:18–27.

2. The Global Virtual Network of the '595 Patent

“A global virtual network (GVN) is a type of network which offers network optimization over the top (OTT) of the internet.” Ex. 1001, 2:40–43. “Having a secure tunnel between an endpoint device (EPD) and an access point server (SRV_AP) linked to the broader GVN global network offers many advantages.” *Id.* at 2:43–46. The network system may include a first tunnel connecting an endpoint device and an access point server. *Id.* at 3:8–9. A second tunnel connects the access server and a control server. *Id.* at 3:9–10.

E. Illustrative Claim

The Petition challenges non-disclaimed claims 15–20, of which claim 15 is an independent claim directed to “[a] network system for managing a global virtual network.” Ex. 1001, 34:4–5. Claims 16–20 all depend from

claim 15. *Id.* at 34:25–46. Claim 15 is illustrative of the claimed subject matter and reproduced below:

- [15.0]¹ A network system for managing a global virtual network, comprising:
 - [15.1]an access point server configured to connect to one or more endpoint devices via one or more first tunnels; and;
 - [15.2]a control server connected to the access point server via a second tunnel, the control server storing one or more records associated with each of the one or more endpoint devices;
 - [15.3]wherein the control server is configured to receive a request for a list of available servers from a first endpoint device among the one or more endpoint devices, the list of available servers including the access point server;
 - [15.4]retrieve the list of available servers; retrieve the one or more records associated with the first endpoint device, and
 - [15.5]dynamically order the list of available servers for the first endpoint device based on the one or more records associated with the network device; and
- [15.7]²transmit the ordered list of available servers to the first endpoint device.

Ex. 1001, 34:4–24.

¹ Paragraph labeling in brackets is based on those provided by Petitioner. Pet. 40–52. Patent Owner also adopts this format. Prelim. Resp. 2 (Limitation 15.3). We adopt the same format for purposes of this Decision.

² Petitioner omits a limitation 15.6, skipping to limitation 15.7. It appears that limitation 15.4 may be two limitations consolidated into one. Regardless, we proceed with the Petition as it appears of record, without a limitation 15.6.

F. References and Other Evidence

The Petition relies on the following references:

Kommula, US 2010/0153558 A1, published June 17, 2010
(Kommula, Ex. 1004); and
Hankins et al., US 10,177,957 B1, issued January 8, 2019 (Hankins,
Ex. 1005).

G. Asserted Grounds of Unpatentability

Petitioner asserts the challenged claims are unpatentable on the
following grounds:

Grounds³	Claims Challenged	35 U.S.C. §⁴	References
1 ⁵	1–14	103	Kommula
2	15–20	103	Hankins
3	15–20	103	Hankins, Kommula

See Pet. 18.

³ Grounds as listed at page 18 of the Petition.

⁴ Because the earliest application from which the '595 patent claims priority was filed after March 16, 2013, the AIA (“America Invents Act”) version of § 103 applies. Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011).

⁵ As a result of the filing of the Disclaimer, claims 1–14 are no longer at issue. Ex. 3001.

H. Overview of the Prior Art

1. Kommula (Ex. 1004)

Kommula discloses a global server load-balancing (GSLB) switch, which “serves as a proxy to an authoritative DNS^[6] and communicates with numerous site switches that are coupled to host servers serving specific applications.” Ex. 1004, Abs. Kommula describes existing methods for communicating between applications over a network, like the Internet using transmission control protocol/Internet protocol. *Id.* ¶ 5. According to existing methods, when a client provides a URL⁷ “to request access to an application program or another type of resource, the host name of the URL needs to be resolved into an IP address for that application program or resource.” *Id.* If a corresponding IP address is not locally cached in a DNS server, the DNS server dispatches a recursive query to another DNS server. *Id.* “This process is repeated until an authoritative DNS server for the URL is reached.” *Id.*

Kommula identifies shortcomings of existing methods including distance, which can be international, resulting from differences in location between the host server location and a client. Ex. 1004 ¶ 7. Further, invalid IP addresses resulting from a downed server persist until the invalid IP address expires. *Id.*

⁶ “Domain name server.” Ex. 1003 ¶ 69.

⁷ “Universal Resource Locator.” Ex. 1003 ¶ 75.

Figure 1 of Kommula is reproduced below.

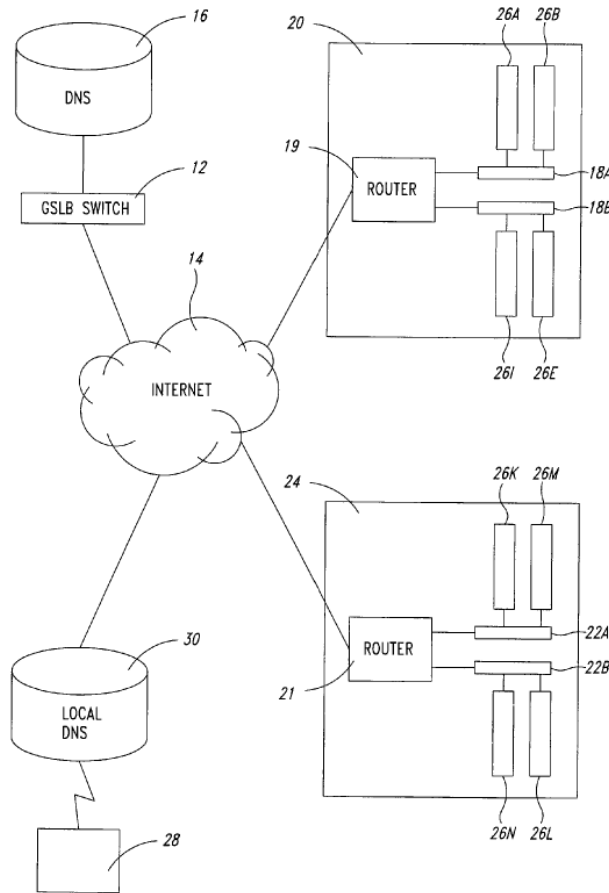


Fig. 1

Figure 1 illustrates a global server load-balancing configuration.

Ex. 1004 ¶ 12. Figure 1 shows “a client program 28 connected to Internet 14, and communicates with local DNS server 30.” *Id.* ¶ 19. When a browser on client program 28 requests a web page with a URL, a query is sent to local DNS server 30 to resolve the URL to an IP address of a host server. *Id.* Client program 28 receives from DNS server 30 a list of IP addresses corresponding to the resolved host name, which are either retrieved from local DNS server 30’s cache, if not expired, or “from GSLB switch 12, as a result of a recursive query.” *Id.*

Differing from existing methods described above, the “list of IP addresses is ordered by GSLB switch 12 based on [performance] metrics.” Ex. 1004 ¶ 19. “In one embodiment, GSLB switch 12 determines which site switch would provide the best expected performance (e.g., response time) for client program 28 and returns the IP address list with a virtual IP address configured at that site switch placed at the top” as either a ranking or by weighting the IP addresses. *Id.* ¶ 20. “Client program 28 can receive the ordered list of IP addresses, and typically selects the first IP address on the list to access the corresponding host server.” *Id.* Other performance metrics include availability metrics, load metrics, proximity metrics, and the topological distance between the host server and the client program measured in the number of hops between the server and the client. *Id.* ¶ 9.

2. *Hankins (Ex. 1005)*

Hankins describes managing networks, including connecting a private network to the Internet and communicating signal packets from a first device in a first logical broadcast domain to another network device in another logical broadcast domain using a tunnel server. Ex. 1005, Abs. Hankins describes that broadcast domain refers to a set of devices occupying a network address space, in which any device is able to communicate with any other device in the broadcast domain without rerouting transmission. *Id.* at 6:33–40. A logical broadcast domain means that portions of the broadcast domain may not be entirely related to a particular set of physical devices and instead can be associated with a cloud implemented functionality. *Id.* at 4:12–16, 7:45–50.

Figure 2 of Hankins is reproduced below.

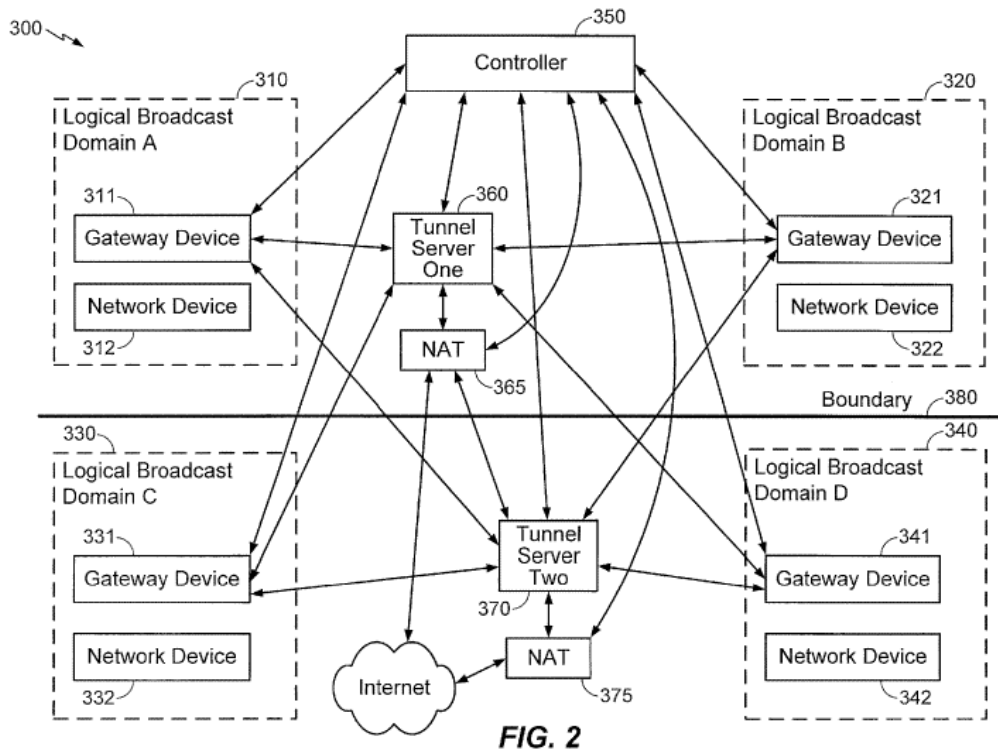


Figure 2 is a schematic diagram illustrating an embodiment to connect a private network to the Internet.

Ex. 1005, 1:45–46. As depicted in Figure 2, four logical broadcast domains A310, B320, C330, and D340 are in communication via one or more tunnel servers 360, 370. *Id.* at 24:45–47, 24:58–67. For example, “[g]ateway devices 311, 321, 331, and 341 may generate a broadcast domain configuration for their respective logical broadcast domains.” *Id.* at 24:47–49. “Gateway devices 311, 321, 331, and 341 may forward respective broadcast domain configurations to controller 350,” which provisions tunnel server one 360. *Id.* at 24:49–52.

The communication channel between remote physical locations, e.g., Los Angeles and New York, may be enhanced by provisioning a tunnel

server located more physically proximate to endpoints. Ex. 1005, 25:7–18.
“A path or channel may potentially be enhanced by controller 350 provisioning an additional tunnel server located more physically proximate to logical broadcast domain C 330 and logical broadcast domain D 340.” *Id.* at 25:18–20.

II. ANALYSIS OF THE CHALLENGED CLAIMS

A. Level of Ordinary Skill in the Art

Petitioner alleges a person of ordinary skill in the art “would have been familiar with using cloud based resources offered on top of regular Internet connections to provide virtual networks and the formation of tunnels and the associated protocols as demonstrated by the prior art references and description in the [Petition].” Pet. 14 (citing Ex. 1003 ¶ 55; Pet. 15–18).

Petitioner further alleges a person of ordinary skill in the art

would have gained knowledge of these concepts through a mixture of training and work experience, such as by having a Bachelor’s degree in computer science and two years of experience; or by obtaining a Master’s degree in computer science, but having only one year of experience; or by having no formal education but experience in storage systems of at least four years.

Id. at 14–15 (citing Ex. 1003 ¶ 56).

Patent Owner does not propose a level of ordinary skill in the art. *See* Prelim. Resp. Petitioner’s proposal is supported by the Reddy Declaration and is consistent with the ’595 patent and the asserted prior art. Accordingly, we apply Petitioner’s articulation.

B. Claim Construction

Unless indicated otherwise, all claim terms herein are given their ordinary and customary meaning. 37 C.F.R. §42.100(b). We construe claim terms only as relevant to the parties' contentions and only to the extent necessary to resolve the issues in dispute. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Neither party proposes any term for claim construction. Petitioner provides discussions of the "State of the Art" for the terms "communication tunnels" and "selection of communication paths by controller." Pet. 15–18. The term "tunnel" appears in challenged independent claim 15. The term "selection of communication paths by controller" does not appear in the challenged claims. On this record, we are not directed to any claim construction issue. Unless otherwise indicated in this Decision, we do not need to construe any claim term at this time, and we apply the plain and ordinary meaning of all claim terms, as would have been understood by a person of ordinary skill in the art, in the context of the '595 patent.

C. Obviousness

A claim is unpatentable as obvious under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject

matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called “secondary considerations,” including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). At this stage, neither party has presented any evidence on the fourth *Graham* factor.

D. Claims 1–14 as Obvious Over Kommula

As already noted, Patent Owner has disclaimed claims 1–14. Ex. 3001; Prelim. Resp. 15. We do not analyze claims 1–14 as the challenge is mooted by the filing of the Disclaimer.

E. Claims 15–20 as Obvious Over Hankins or Hankins and Kommula

Petitioner argues claims 15–20 are unpatentable because they would have been obvious over Hankins alone. Pet. 37–54. Alternatively, Petitioner argues claims 15–20 would have been obvious over Hankins and Kommula. *Id.* at 50–51. Petitioner cites to the Reddy Declaration for evidentiary support. Ex. 1003 ¶¶ 127–152 (Hankins alone), 153–166 (Hankins and Kommula). As discussed below, Hankins alone is sufficient to satisfy the “reasonable likelihood” threshold standard for institution. Patent Owner does not argue otherwise. See Prelim. Resp. 1–2 (“Introduction” discussing only Hankins).

1. Claim 15

Patent Owner disputes that Petitioner has shown limitations 15.3 and 15.2. Prelim. Resp. 2–6 (limitation 15.3), 7–15 (limitation 15.2). At this time, Patent Owner does not dispute Petitioner’s showing for any other limitation of claim 15. *Id.* We begin by addressing the undisputed

limitations of claim 15, and then we turn to addressing limitations 15.3 and 15.2 in the order argued by Patent Owner, 15.3 then 15.2.

a. Undisputed Limitations 15.0, 15.1, 15.4, 15.5, and 15.7

Limitation 15.0 recites “[a] network system for managing a global virtual network, comprising[.]” Petitioner contends that, to the extent limitation 15.0 should be treated as limiting, Figure 2 of Hankins teaches the preamble because it illustrates a global virtual network of network devices, including gateways, distributed in various logical broadcast domains. Pet. 41 (citing Ex. 1005, 1:6–7, 2:53–57, 4:12–16, 7:45–50, 10:37–43, 18:8–26, 19:51–55; Ex. 1003 ¶¶ 127, 128). We need not decide whether the preamble is limiting at this stage because, regardless of whether the preamble is limiting, Petitioner shows sufficiently for purposes of institution that the prior art satisfies the recitation in the preamble.

Limitation 15.1 recites “an access point server configured to connect to one or more endpoint devices via one or more first tunnels.” Petitioner contends that Hankins teaches this limitation because it discloses tunnel servers 360, 370 capable of connecting to one or more gateway devices 311, 321, 331, and 341 via one or more tunnels. Pet. 41–42 (citing Ex. 1005, 8:63–66, 26:65–27:8, Fig. 2; Ex. 1001, Figs. 9, 15; Ex. 1003 ¶¶ 129, 130).

Limitation 15.4 recites “retrieve the list of available servers; retrieve the one or more records associated with the first endpoint device.” Petitioner contends that Hankins teaches these limitations because it discloses controller 350 retrieving a list of available tunnel servers 360, 370, etc. based on the stored configuration of the broadcast domains associated

with each gateway device 311, 321, 331, and 341. Pet. 47–48 (citing Ex. 1005, 24:47–55, 25:14–19⁸; Ex. 1003 ¶¶ 143–145).

Limitation 15.5 recites “dynamically order the list of available servers for the first endpoint device based on the one or more records associated with the network device.” Petitioner contends that Hankins teaches this limitation because it discloses, as one example, controller 350 providing gateway device 311 with a list of tunnel servers 360, 370, etc. based on information that may include proximity of gateway device 311 to the listed tunnel servers. Pet. 48 (citing Ex. 1005, 24:39–57, 25:15–55). In addition, Petitioner argues that Hankins discloses that, in the event a selected tunnel server (e.g., tunnel server 360) is unavailable because of a software issue, a configuration issue, a power issue, scheduled maintenance, insufficient permissions, a security issue, other issues, or combinations thereof, selecting an additional tunnel server (e.g., tunnel server 370) to provide a secondary route. *Id.* at 48–49 (citing Ex. 1005, 25:56–67; Ex. 1003 ¶¶ 146–148).

Limitation 15.7 recites “transmit the ordered list of available servers to the first endpoint device.” Petitioner contends that Hankins teaches this limitation because it discloses providing the available tunnel servers (e.g., tunnel servers 360, 370, etc.) to gateway device 311. Pet. 52. For example, Petitioner argues that Hankins discloses that controller 350 identifies tunnel servers 360 and 370 that are available for gateway device 311 to

⁸ Petitioner’s citations on page 47 and 48 of the Petition are to Exhibit 1004 or Kommula rather than to Exhibit 1005 or Hankins. This is a clear typographical error because Kommula is a patent publication with paragraph numbers, whereas Hankins is an issued patent with column and line numbers.

communicate with gateway device 321 and then, as one example, allowing gateway device 311 to transmit signal packets to gateway device 321 via tunnel server 360 because it was more proximate than gateway server 370. *Id.* (citing Ex. 1003 ¶ 165).

b. Limitation 15.3

Limitation 15.3 recites “wherein the control server is configured to receive a request for a list of available servers from a first endpoint device among the one or more endpoint devices, the list of available servers including the access point server.”

Petitioner alleges limitation 15.3 is shown because Hankins discloses that controller 350 receives a request from gateway device 311 for a list of available servers, which include tunnel servers 360, 370, etc. Pet. 45–46. For example, Petitioner argues that Hankins discloses “that gateway 311 in one logical broadcast domain, may request services available from gateway 321 in another logical broadcast domain.” *Id.* at 46 (citing Ex. 1005, 12:9–16). Petitioner cites to its First Annotated Figure 2 of Hankins, which it argues shows “tunnel servers 360 and 370 can be used to establish communications between gateway 311 and 321.” *Id.* (citing First Annotated Figure 2 at Pet. 44; Ex. 1003 ¶ 135). Petitioner argues “[t]his is consistent with the disclosure of the ’595 Patent that explains that when a device makes a request to a server, what it is really asking for is a list of available servers, and specifically an IP and port which it could utilize to . . . build a tunnel.” *Id.* at 46 (citing Ex. 1001, 23:11–24; Ex. 1003 ¶¶ 139, 140).

In addition, Petitioner argues controller 350 (Hankins, Fig. 2 reproduced in Section I.H.2 above) teaches “a private network may be

reconfigured without human intervention, for example, to improve performance and/or reduce cost.” Pet. 46. Petitioner goes on to argue that, “if latency increases, and/or if network utilization increases, controller 350 may provision additional tunnel servers or may provision tunnel servers in a manner to improve performance and/or reduce cost without human intervention.” *Id.* (citing Ex. 1005, 25:45–55; Ex. 1003 ¶ 141).

Patent Owner disputes any implication that Hankins’s “controller identifies tunnel servers in response to one gateway’s request for services from another gateway.” Prelim. Resp. 3 (quoting Pet. 46). According to Patent Owner, Hankins

does not teach **any** gateway making **any** request to a controller for a list of available servers including **any** tunnel server. Each time Hankins provisions a tunnel server, it simply informs each gateway in the private network *at that time* how to reach that tunnel server, with no requests, lists, or dynamic reordering at all.

Id. at 4 (citing Ex. 1005, 19:32–35, 25:22–26).

Turning to the specification of the ’595 patent, cited at page 46 of the Petition, Patent Owner argues the passage

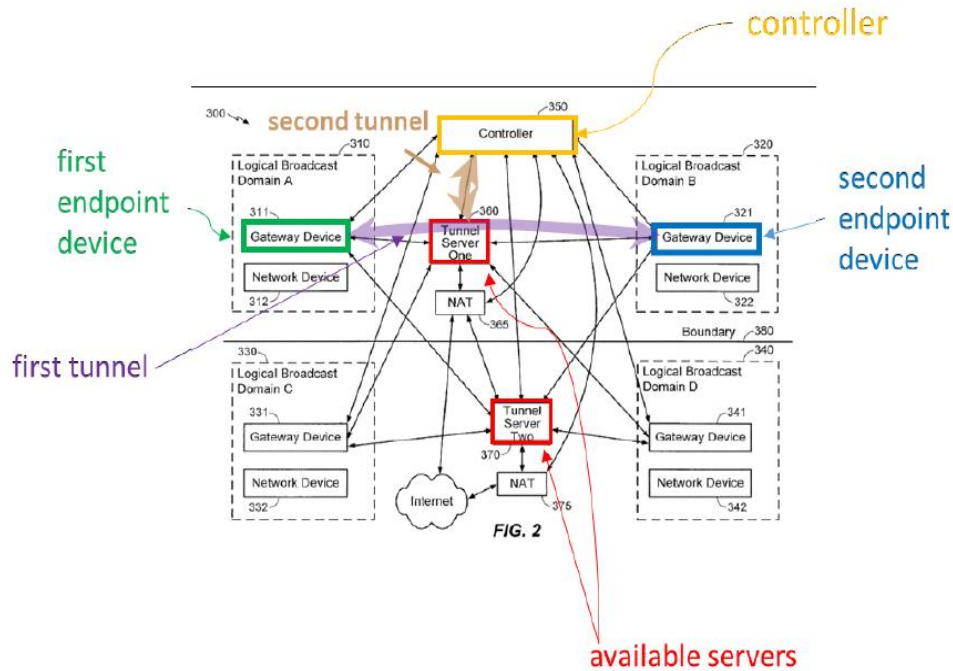
describes something fundamentally different than what is described in Hankins – a request to *a server availability module*. These portions of the ’595 patent specification can be fairly read to convey the unremarkable principle that requests to a *server availability module* are “really” requests for a list of available servers.

Prelim. Resp. 4–5 (quoting Ex. 1001, 23:11–23, Fig. 32). Patent Owner concludes that “Hankins discloses nothing like a server availability module, and there is nothing in the cited passages of the ’595 patent specification that provides a bridge from Hankins’ disclosure to [limitation] 15.3.” *Id.* at 6.

At this stage there does not appear to be material difference between Hankins's gateway device 311 making a "request" for available services from another gateway device 321, which results in controller 350 providing a "list of available servers," and gateway device 311 making a direct "request" to controller 350 for a "list of available servers." Limitation 15.3 recites that the "request [is] for a list of available servers." This conclusion is directly supported by the '595 patent's statement that, when "a device *makes a request* to a server, what it is really *asking for* is a *list of available servers*." See Pet. 46 (citing Ex. 1001, 23:11–24; Ex. 1003 ¶¶ 139, 140) (emphasis added).

Petitioner's position is shown in the Second⁹ Annotated Figure 2 of Hankins, reproduced below.

⁹ Hankins's Figure 2 is first annotated by Petitioner in support of its showing for limitation 15.1. Pet. 42.



Second Annotated Figure 2 of Hankins.

Pet. 44 (citing Ex. 1005, Fig. 2; Ex. 1003 ¶ 135). Referring to Second Annotated Figure 2, Petitioner explains that Hankins’ “tunnel servers 360 and 370 can be used to establish communications between gateway 311 and 321.” Pet. 46. Further, as explained above and as alleged by Petitioner, a person of ordinary skill in the art would have “understood that a request from gateway 311 for services available from gateway 321 is a request for available tunnel servers that can provide a tunnel between gateway 311 and 321.” *Id.* (citing Ex. 1001, 23:11–24; Ex. 1003 ¶¶ 139, 140).

Our preliminary determination is not altered even if we accept Patent Owner’s assertion that Hankins’ controller 350 does not “identif[y] tunnel servers in response to one gateway’s request for services from another gateway.” See Prelim Resp. 3. Patent Owner does not explain how this assertion is relevant to limitation 15.3, which makes no mention of “tunnel

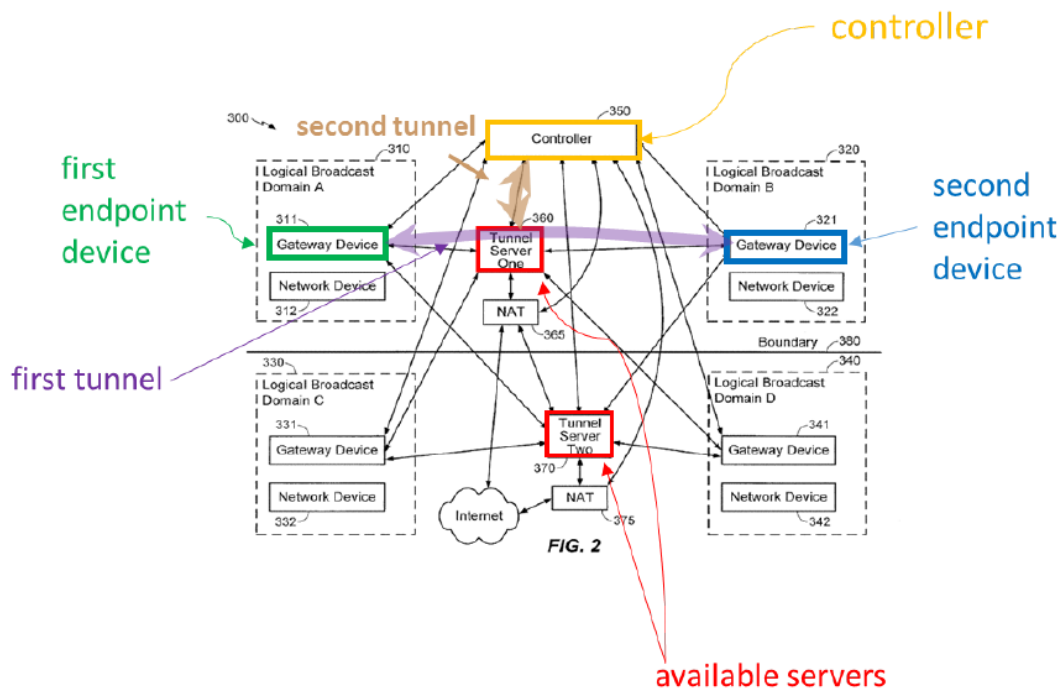
servers.” Instead, limitation 15.3 is directed to a “list of available servers including the access point server.”

On this record, and for reasons stated above, Petitioner has sufficiently shown Hankins teaches limitation 15.3. Patent Owner has not made any arguments directed to the Hankins and Kommula ground.

c. Limitation 15.2

Limitation 15.2 recites “a control server connected to the access point server via a second tunnel, the control server storing one or more records associated with each of the one or more endpoint devices.”

Petitioner’s position on limitation 15.2 is shown partly in the Third Annotated Figure 2 of Hankins at page 44 of the Petition and reproduced below.



Third Annotated Figure 2 of Hankins.

Pet. 44 (citing Ex. 1005, Third Annotated Figure 2; Ex. 1003 ¶ 135).

Petitioner describes the Third Annotated Figure 2 as follows:

a controller (yellow) (*a control server*) is connected to a tunnel server (red) (*access point server*) via a *second tunnel* (yellow¹⁰). Although Hankins does not expressly state that the communication path shown in FIG. 2 between controller 350 and tunnel sever 360 or tunnel server 370 is a tunnel, a [person of ordinary skill in the art] understood this path could be a tunnel. For example, Hankins discloses that a gateway can operate as a controller, and further discloses that the communication path between a gateway and a tunnel server is via a tunnel. [] Further, as discussed in the State of the Art, it was known to use a tunnel between an access point and the controller. [] Thus, a [person of ordinary skill in the art] understood that controller could be implemented in a gateway which is connected to a tunnel server via a second tunnel.

Id. at 43–44 (citing Ex. 1005, 14:41–49, 12:1–25; Ex. 1003 ¶¶ 131, 132; Ex. 1006¹¹ ¶ 13).

Petitioner also argues Hankins discovers “features of the particular broadcast domain without human intervention to generate a broadcast domain configuration of the particular broadcast domain.” Pet. 44–45. Petitioner lists various discovered activities including “passively monitoring signal packets, actively probing other network devices, querying other network devices, querying servers, such as a domain controller or other server responsible for a directory of broadcast domain features, any combinations thereof, or other approaches.” *Id.* (citing Ex. 100[5], 9:10–22). Relying on the Reddy Declaration, Petitioner concludes “configuration information for a particular broadcast domain associated with a gateway

¹⁰ Brown as compared to the “control server” in yellow.

¹¹ Iyer et al., US 2020/0275017 A1, published Oct. 28, 2010 (Ex. 1006).

may be generated using a discovery device.” *Id.* (citing Ex. 1003 ¶¶ 136, 137).

Petitioner argues Hankins teaches that portion of limitation 15.2 reciting that “the control server stor[es] one or more records associated with each of the one or more endpoint devices.” Pet. 45 (citing Ex. 100[5], 21:7–19; Ex. 1003 ¶ 138). Petitioner’s citation to Hankins references Figure 1, which is described as showing “[c]ontroller 206 may store a generated broadcast domain continuation received from a gateway device, such as device 215, for example, using a memory device 207.” Ex. 1005, 21:12–14.

Patent Owner’s heading for its argument regarding limitation 15.2 contends Petitioner has failed to show a rationale or motivation to implement a tunnel as the connection between controller 350 and tunnel servers 360, 370, etc. in Hankins. *See* Prelim. Resp. 7. Patent Owner relies on *Virtek Vision*¹² to allege “the mere fact that a feature is well known [is not] sufficient to support a finding of obviousness.” Prelim. Resp. 10. Patent Owner also alleges that *Virtek Vision* found a “lack of substantial evidence” supporting a motivation to combine a reference with “known” art. *Id.* at 11.

Patent Owner also specifically disputes Petitioner’s showing regarding limitation 15.2. Patent Owner first emphasizes that portion of Petitioner’s description of the Third Annotated Figure 2 of Hankins, reproduced above, that asserts that a person of ordinary skill in the art would have understood the path between controller 350 and tunnel server 360

¹² *Virtek Vision Int’l ULC v. Assembly Guidance Systems, Inc.*, 97 F.4th 882, 887 (Fed. Cir. 2024).

“*could* be a tunnel.” Prelim. Resp. 10 (emphasis added)¹³. Patent Owner argues the “mere fact that these possible arrangements existed in the prior art” does not provide any reason to substitute one system for another or provide “any advantages that would flow from doing so.” *Id.* at 10–11 (citing *Virtek Vision*, 97 F.4th at 887). The Petition and Reddy Declaration, which includes the same statement, is argued as “insufficient to support an obvious finding as a matter of law.” *Id.* at 11–12.

Patent Owner then addresses what is characterized as Petitioner’s second argument that “Hankins discloses that a gateway can operate as a controller, and further discloses that the communication path between a gateway and a tunnel server is via a tunnel.” Prelim. Resp. 12 (citing Pet. 43 (citing Ex. 1003 ¶131)). This is interpreted by Patent Owner to mean that Hankins teaches “the controller functionality is built into a gateway and uses a tunnel to send control information to the tunnel server.” *Id.*

On this record, Petitioner’s first argument is sufficient for us to preliminarily determine “the path between controller 350 and tunnel server 360” is a tunnel. Petitioner sufficiently shows that a person of ordinary skill in the art would have understood what constitutes a tunnel as including the path described in the Petition. Specifically, the Petition cites evidence, quoted by Patent Owner, showing

The use of “tunnels” was well known in the art. For example, Iyer (2010) disclosed a plurality of communication paths

¹³ Petitioner’s third annotated Figure 2 of Hankins only shows a second tunnel (in brown) between controller 350 and tunnel server 360. Petitioner does not annotate this figure to provide a second tunnel between controller 350 and tunnel server 370.

(tunnels 1 and 2)^[14] between wireless clients, which were identified as “peer-to-peer tunnels” established between “any two clients in the mobility domain” to route traffic between the clients.

Prelim. Resp. 8 (quoting Pet. 15 (citing Ex. 1006 ¶¶ 15, 30; Ex. 1003 ¶ 60)).

Hankins teaches that “[a] path or channel may potentially be enhanced by controller 350 provisioning an additional tunnel server located more physically proximate to logical broadcast domain C 330 and logical broadcast domain D 340.” Ex. 1005, 25:18–20. A “tunnel server” is shown along “path” between the two gateway devices 311 and 321 of Annotated Figure 3. Based on the current record, the preceding disclosure at least suggests, if not expressly states, that Hankins uses tunnels and amounts to more than just stating tunnels are “well known.” Thus, there is a rationale for our preliminary finding that Hankins teaches its “paths or channels” are tunnels.

Furthermore, we are not persuaded that the Petition’s statement that the path “could be a tunnel” means the path identified in the Petition is not a tunnel. Rather, based on this record, a person of ordinary skill in the art would have understood a tunnel to be “established between ‘any two clients in the mobility domain’ to route traffic between the clients.” See Pet. 15 (citing Ex. 1006 ¶¶ 15, 30).

Patent Owner alleges the so-called second argument “could be intended to be a discrete argument.” Prelim. Resp. 12. Because of our determination on Petitioner’s first argument, we need not reach the so-called

¹⁴ Referencing first and second tunnels of Third Annotated Figure 2 of Hankins reproduced above.

second argument in the Petition identified by Patent Owner. Patent Owner's arguments relating to creation of a tunnel, whether a gateway device can act as both an endpoint and controller, and latency issues are left for trial. *See id.* at 14. At this juncture, they are unsupported arguments.

2. *Dependent Claims 16–20*

Claims 16–20 depend from claim 15.

We have reviewed Petitioner's showing for claims 16–20. On this record, we find Petitioner has sufficiently shown the additional limitations of the dependent claims. *See* Pet. 52–54.

3. *Summary*

Petitioner has shown a reasonable likelihood that claims 15–20 would have been obvious over Hankins or Hankins and Kommula.

III. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at least one of the claims 15–20, which are all the claims remaining for our consideration. We therefore institute trial as to all these claims based on the only grounds challenging these claims stated in the Petition.

IV. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '595 patent is hereby instituted for claims 15–20 based on the asserted grounds of unpatentability set forth in the Petition challenging these claims; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

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