

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

OPTIMNET LLC,
Patent Owner.

Case IPR2026-00320
U.S. Patent No. 8,780,887

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	OVERVIEW OF THE '887 PATENT	4
	A. The '887 Patent's Technology	4
	B. The Challenged Independent Claims	6
	C. The Petition and the Single Asserted Ground	7
III.	LEVEL OF ORDINARY SKILL IN THE ART	8
IV.	CLAIM CONSTRUCTION	9
V.	LEGAL STANDARDS	9
	A. The Institution Standard	9
	B. Obviousness	10
	C. Petition Sufficiency	10
	D. Expert Evidence	11
VI.	THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS	12
	A. The Petition fails to demonstrate a reasonable likelihood to prevail on claims 1-5	12
	B. The Petition fails to demonstrate a reasonable likelihood to prevail on claims 6-10	20
VII.	CONCLUSION	23

TABLE OF AUTHORITIES

Cases

<i>Cisco Sys., Inc. v. C-Cation Techs., LLC</i> , IPR2014-00454, Paper 12 (P.T.A.B. Aug. 29, 2014)	11
<i>Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.</i> , 800 F.3d 1375 (Fed. Cir. 2015).....	10
<i>Graham v. John Deere Co.</i> , 383 U.S. 1 (1966).....	10
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016).....	10
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	9
<i>Rohm & Haas Co. v. Brotech Corp.</i> , 127 F.3d 1089 (Fed. Cir. 1997).....	12
<i>Velander v. Garner</i> , 348 F.3d 1359 (Fed. Cir. 2003).....	12
<i>Virtek Vision Int’l ULC v. Assembly Guidance Sys., Inc.</i> , 97 F.4th 882 (Fed. Cir. 2024).	10
<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (P.T.A.B. Aug. 24, 2022)	11, 19, 23

Statutes

35 U.S.C. § 103	1, 7, 10
35 U.S.C. § 314(a).....	9
35 U.S.C. § 316(e).....	9

Other Authorities

37 C.F.R. § 42.100(b).....	9
37 C.F.R. § 42.104(b)(2)	11
37 C.F.R. § 42.22(a)(2)	11
37 C.F.R. § 42.6(a)(3)	11

37 C.F.R. § 42.65(a)	11, 19, 23
----------------------------	------------

PATENT OWNER'S EXHIBIT LIST

No.	Description
2006	Expert declaration of Dr. Mahdi Eslamimehr in Support of Patent Owner's Preliminary Response ("Eslamimehr Decl.")
2007	<i>Curriculum Vitae</i> of Dr. Mahdi Eslamimehr

I. INTRODUCTION

Institution of Cisco Systems, Inc.’s (“Petitioner” or “Cisco”) petition for *inter partes* review of U.S. Patent No. 8,780,887 (“the ’887 patent”) (Ex. 1001) should be denied. Cisco’s petition presents a single ground—obviousness under 35 U.S.C. § 103 over U.S. Patent App. Pub. No. 2007/0157303 (“Pankratov”) (Ex. 1004) alone. Cisco’s theories fail to demonstrate a reasonable likelihood that the challenged claims are unpatentable.

First, with respect to claim 1 and its dependent claims (claims 2-5), the Petition does not show limitation [1.3] requiring that if the first virtual tunnel router has received a hole punching message from the second virtual tunnel router, the first virtual tunnel router establishes a tunnel with the second virtual tunnel router based on the virtual network prefix information it received from the tunnel mapping controller. The Petition maps the virtual tunnel routers to Pankratov’s “client computers” and alleges that Pankratov’s “mediation server [*tunnel mapping controller*]” “provides each computer with ***virtual IP address and a non-trivial subnet***” “[*virtual network prefix information*].” Pet. at 16. However, the Petition does not show that the client computer establishes a tunnel based on this virtual network prefix information. Instead, the Petition identifies a mechanism in which the client computer is told to use ***external IP address and port information***. Pet. 21-22. The Petition alleges that Pankratov’s mediation server “activates the tunnel

between the client computers” by “instructing one or both client computers to communicate with the other” using “the[ir] ***external IP addresses***” (Pet. 21-22) in a process where “[w]hen the mediation server provides computer A and computer B with the other’s ***IP address and port***...the IP address and port of the two computers are linked to form a tunnel so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server” (Pet. 35, citing Ex. 1004 Claim 1). Indeed, the disclosures in Pankratov on which the Petition relies describe that the client computers are provided with the ***external IP/port addresses***. Ex. 1004 [0067]-[0069] (“the client computers are provided with the other’s confirmed ***external IP/port addresses*** and they may immediately start exchanging data through the tunnel”). Thus, under the Petition’s own mapping, the first virtual tunnel router does not establish a tunnel *based on the virtual network prefix information it received from the tunnel mapping controller*. The Petition also does not allege any modification to Pankratov to cure this deficiency.

Second, with respect to claim 6 and its dependent claims (claims 7-10), the Petition’s analysis suffers from a similar deficiency. Limitations [6.3]-[6.4] require “the first virtual tunnel router and the second virtual tunnel router creating a tunnel; and ***performing direct communication*** between the first virtual tunnel router and the second virtual tunnel router ***by linking the virtual network prefix information*** received by the first virtual tunnel router and the second virtual tunnel router,

respectively.” But while the Petition mapped the “virtual network prefix information received by the first virtual tunnel router and the second virtual tunnel router” to a “*virtual IP address and a non-trivial subnet* that covers the entire virtual IP address range as configured on the server,” the Petition’s theories for [6.4] allege that the client computers perform direct communications without linking this information, and instead by using *external IP/port address* information received from the server. Pet. at 34-35 (“[w]hen the mediation server provides computer A and computer B with the other’s *IP address and port, the IP address and port of the two computers are linked to form a tunnel* so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server” (Pet. 35, citing Ex. 1004 Claim 1). This *external IP and port address information* is not the “*virtual IP address and a non-trivial subnet*” that the Petition mapped as the “*virtual network prefix information.*” Pet. at 34-35. This cannot supply limitation [6.4]. Once again, the Petition does not allege any modification to Pankratov to cure this deficiency.

Nor can the accompanying declaration of Dr. Reddy supply what the Petition lacks. The Petition’s “Detailed Application of Pankratov to the Challenged Claims” does not cite the Reddy Declaration. Further, the Reddy Declaration is entitled to little weight, because it recites the Petition verbatim and thus adds nothing of substance to the conclusory allegations of the Petition.

As a result, the Petition fails to establish a reasonable likelihood that its single invalidity ground would prevail as to any challenged claim. Petitioner's request for institution should be denied.

II. OVERVIEW OF THE '887 PATENT

A. The '887 Patent's Technology

The '887 patent describes a method for peer-to-peer communication in a virtual network environment using NAT traversal. The claimed methods involve two principal components.

Virtual Tunnel Routers ("VTRs") are the endpoint network devices that establish direct tunnel connections to each other. '887 patent, Claim 1 ("virtual tunnel routers"). The claims focus on VTRs that receive hole-punching messages from peer VTRs and establish tunnels directly with peer VTRs. *See* Claim 1 ("determining whether the first virtual tunnel router has received a hole punching message from the second virtual tunnel router; if the first virtual tunnel router has received a hole punching message, the first virtual tunnel router establishing a tunnel with the second virtual tunnel router based on the virtual network prefix information.").

The Tunnel Mapping Controller is a server that stores and distributes virtual network prefix information to the VTRs. '887 patent, Claim 1 ("tunnel mapping controller"). The controller provides each VTR with virtual network prefix

information for the virtual network. The specification describes “addresses assigned to terminals or devices connected to respective virtual networks.” Ex. 1001 (’887 Patent), 6:44–58. Claim 1 describes that a VTR establishes a tunnel to another VTR based on virtual network prefix information received from the Tunnel Mapping Controller. *See* Claim 1.

In network systems involving virtual networks and tunneling, a person of ordinary skill in the art at the time of the invention would have distinguished between virtual network addressing information (like the virtual network prefix information recited in the asserted claims) and external transport endpoint information. Ex. 2006 (Declaration of Dr. Mahdi Eslamimehr in Support of Patent Owner’s Preliminary Response) (“Eslamimehr Decl.”) ¶ 17. Virtual network addressing information can identify addresses, address ranges, or prefixes used inside a virtual network. Ex. 2006 ¶ 18. Meanwhile, external transport endpoint information like external IP address and port identifies where packets must be sent on the underlying physical or public network, including after translation by a NAT device. Ex. 2006 ¶ 19. In a NAT traversal system, external IP/port information is used so that one endpoint can send packets to another endpoint through the NAT/firewall environment. Ex. 2006 ¶ 19.

B. The Challenged Independent Claims

The independent claims recite features for enabling direct communication between virtual tunnel routers.

Claim 1 recites:

[1.0] A communication method that provides end-to-end communication in a virtual network environment, the method comprising:

[1.1] a plurality of virtual tunnel routers comprising a first virtual tunnel router and a second virtual tunnel router receiving a message containing virtual network prefix information from a tunnel mapping controller;

[1.2] determining whether the first virtual tunnel router has received a hole punching message from the second virtual tunnel router;

[1.3] if the first virtual tunnel router has received a hole punching message, the first virtual tunnel router establishing a tunnel with the second virtual tunnel router based on the virtual network prefix information; and

[1.4] the first virtual tunnel router performing direct communication with the second virtual tunnel router through the established tunnel.

Claim 6 recites:

[6.0] A communication method that enables direct communication between a plurality of virtual tunnel routers including a first virtual tunnel router and a second

virtual tunnel router by working in conjunction with a tunnel mapping controller, the method comprising:

[6.1] the first virtual tunnel router and the second virtual tunnel router requesting virtual network prefix information from the tunnel mapping controller;

[6.2] the tunnel mapping controller generating virtual network prefix information of the first virtual tunnel router and second virtual tunnel router, respectively, and transmitting the same along with information of a list of virtual tunnel routers for which previous connection information has been stored;

[6.3] the first virtual tunnel router and the second virtual tunnel router creating a tunnel; and

[6.4] performing direct communication between the first virtual tunnel router and the second virtual tunnel router by linking the virtual network prefix information received by the first virtual tunnel router and the second virtual tunnel router, respectively.

C. The Petition and the Single Asserted Ground

The Petition advances a single ground. Ground 1 challenges claims 1–10 of the '887 patent as obvious under 35 U.S.C. § 103 over Pankratov (Ex. 1004). Petitioner proposes no claim construction, asserting instead that every term should be given its “plain and ordinary meaning.” Pet. 7. There is no Ground 2, no alternative reference, and no fallback combination.

Patent Owner addresses the independent claims — claims 1 and 6. The challenged sets of dependent claims each depend from one of those independent claims: claims 2-5 from claim 1, and claims 7-10 from claim 6. Accordingly, if the asserted art fails to teach or render obvious the limitations of the independent claims, the Petition fails as to every challenged claim, and institution should be denied.

III. LEVEL OF ORDINARY SKILL IN THE ART

For purposes of this Preliminary Response only, Patent Owner applies Petitioner’s proposed level of ordinary skill in the art *arguendo*. Petitioner contends that a “Person of Ordinary Skill in the Art (‘POSITA’) in October 2011 would have been someone knowledgeable and familiar with network based communications including virtual networks. A POSITA would have gained knowledge of these concepts through a mixture of training and work experience, such as by having at least a bachelor’s degree in electrical engineering or computer engineering or science, or related field, and at least two to three years of training or additional work experience in the area of network communications, or a related field. Additional hands-on and design experience could compensate for less formal education, and vice versa. The knowledge and skill of a POSITA is further reflected in the prior art references themselves as well as the State of the Art, discussed below. Ex. 1003 ¶¶ 39-42.” Pet. 6-7.

IV. CLAIM CONSTRUCTION

Claim terms are construed under the same standard applied in district court — the framework set out in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) — giving each term the ordinary and customary meaning it would have to a person of ordinary skill in the art in light of the specification and prosecution history. 37 C.F.R. § 42.100(b).

No term requires construction for the Board to deny institution. Petitioner proposed no constructions, instead applying the “plain and ordinary meaning” of the claim terms. Pet. 6. The Petition fails even under that plain and ordinary meaning because Pankratov does not teach or render obvious the disputed limitations, and the Petition’s mapping is internally inconsistent, as shown below.¹

V. LEGAL STANDARDS

A. The Institution Standard

The Board may institute an inter partes review only where the Petition demonstrates “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). The burden of demonstrating that reasonable likelihood rests on Petitioner and never shifts; it remains with Petitioner throughout. *See* 35 U.S.C. § 316(e); *Dynamic Drinkware*,

¹ Patent Owner reserves the right to propose narrowing constructions in the Patent Owner Response if trial is instituted.

LLC v. Nat'l Graphics, Inc., 800 F.3d 1375, 1378 (Fed. Cir. 2015). It is not the Board's role to supply the analysis the Petition omits, and the Board will not sift through the record to construct arguments or locate disclosures the Petition fails to identify. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016) (reversing Board's conclusions which “raise[d], address[ed], and decide[d] unpatentability theories never presented by the petitioner”).

B. Obviousness

A claim is unpatentable under 35 U.S.C. § 103 only 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 to a person of ordinary skill in the art. Obviousness is determined in light of the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966): the scope and content of the prior art, the differences between the prior art and the claims, the level of ordinary skill, and any objective indicia of nonobviousness. The obviousness analysis must be grounded in the prior art and may not rely on hindsight or conclusory rationale. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); *Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 887 (Fed. Cir. 2024).

C. Petition Sufficiency

A petition must identify “[h]ow the construed claim is unpatentable” and 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)(2), and must set forth “a full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence,” 37 C.F.R. § 42.22(a)(2). Argument may not be incorporated by reference from a supporting declaration into the petition; “[a]rguments must not be incorporated by reference from one document into another document.” 37 C.F.R. § 42.6(a)(3). The Board accordingly will not credit a conclusory limitation mapping, nor will it import argument developed only in a declaration to cure a petition that does not itself make the showing. *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 7–10 (P.T.A.B. Aug. 29, 2014) (informative).

D. Expert Evidence

Expert testimony that states a conclusion without disclosing the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a). A declaration that merely repeats, verbatim or in substance, the conclusory assertions of the petition adds nothing and is entitled to little or no weight. *See* 37 C.F.R. § 42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (P.T.A.B. Aug. 24, 2022) (precedential). A fact-finder is not required to credit an expert’s unsupported assertions, and broad, conclusory expert statements unsupported by corroborating facts are entitled to little weight. *Rohm & Haas Co. v.*

Brotech Corp., 127 F.3d 1089, 1092 (Fed. Cir. 1997); *Velandier v. Garner*, 348 F.3d 1359, 1371 (Fed. Cir. 2003).

VI. THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS

For the reasons below, the Petition fails to demonstrate a reasonable likelihood that it would prevail as to any challenged claim.

A. The Petition fails to demonstrate a reasonable likelihood to prevail on claims 1-5.

First, with respect to claim 1 and its dependent claims (claims 2-5), limitation [1.3] requires that “if the first virtual tunnel router has received a hole punching message, the first virtual tunnel router establishing a tunnel with the second virtual tunnel router based on the virtual network prefix information” it received from the tunnel mapping controller. The Petition’s single ground based on Pankratov does not show this. The Petition alleges only that “Pankratov *discloses* this limitation.” Pet. 21 (emphasis added). However, Pankratov does not teach this, and indeed it makes clear that its system operates differently. Because the Petition does not allege any modification to Pankratov at this limitation, Pankratov’s failure to disclose the limitation is dispositive.

Under the Petition’s invalidity theory, the Petition maps “virtual IP address and non-trivial subnet information” received by Pankratov’s first client computer to the claimed “virtual network prefix information.” Pet. 16. It alleges that Pankratov’s

“mediation server [*tunnel mapping controller*]” “provides each computer with virtual IP address and a non-trivial subnet” “[*virtual network prefix information*].” Pet. 16. For limitation [1.3], the Petition maintains these mappings from limitation [1.1], mapping the virtual tunnel routers to Pankratov’s client computers and the virtual network prefix information to the “virtual IP address and a non-trivial subnet” provided by the mediation server. Pet. 21-22. The Petition presents no alternative mappings for the virtual tunnel routers or the virtual network prefix information. Pet. 21-23. Thus, for limitation [1.3], the Petition’s theory needs to show that if Pankratov’s first client computer [*first virtual tunnel router*] has received a hole punching message from the second client computer [*second virtual tunnel router*], the first client computer [*first virtual tunnel router*] establishes a tunnel with the second client computer [*second virtual tunnel router*] based on the virtual IP address and a non-trivial subnet [*virtual network prefix information*] received from the mediation server [*tunnel mapping controller*].

The Petition’s theory for limitation [1.3] is that “Pankratov discloses that once discovery is complete, a confirmation step is used to activate the tunnel between the client computers based on the discovery step including the mapping of the virtual IP addresses and subnets for client A and B [*virtual network prefix information*] to the external IP addresses of client A and B [*if the first virtual tunnel router has received a hole punching message, the first virtual tunnel router establishing a tunnel with*

the second virtual tunnel router based on the virtual network prefix information.].”

Pet. 21-22.

However, the Petition’s theory does not show that Pankratov’s first client establishes a tunnel with the second client based on the ***virtual IP address and non-trivial subnet information*** it received from Pankratov’s mediation server. Instead, in the only step the Petition identifies in Pankratov as “activat[ing] the tunnel” (Pankratov’s “confirmation step”), the client computer is told to use ***external IP address and port***. Pet. 21-22; Ex. 1004 [0069]. Pankratov’s cited tunnel-activation disclosure does not teach that the client computer uses the virtual IP address and non-trivial subnet information to establish the tunnel. Ex. 1004 [0069]. To the contrary, the cited disclosure states that the client computers are provided with each other’s confirmed external IP/port addresses and may then start exchanging data through the tunnel. Ex. 1004 [0069]. *See* Ex. 2006 (Eslamimehr Decl.) ¶¶ 29-32.

Pankratov’s disclosures, as well as other parts of the Petition, show that Pankratov’s client computer is using the external IP/port addresses to establish the tunnel. Ex. 1004 [0069]; Ex. 2006 (Eslamimehr Decl.) ¶ 26. Pankratov’s mediation server “activates the tunnel between the client computers” by “instructing one or both client computers to communicate with the other” using “the[ir] ***external IP addresses***.” Pet. 21-22 (“Pankratov discloses that once discovery is complete, confirmation step is used to activate the tunnel between the client computers...The

confirmation step includes the server instructing one or both client computers to communicate with the other...”). For this step of activating the tunnel by instructing the clients to communicate, the Petition cites to Pankratov [0069], which describes that “the client computers are provided with the other’s confirmed *external IP/port addresses* and they may immediately start exchanging data through the tunnel.” Ex. 1004 [0069]. Indeed, Pankratov claims a method of “providing each client with the *IP address/port number of the other client* so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server.” Ex. 1004, Claim 1. The Petition itself confirms as much. According to the Petition’s allegations for claim 6, “[w]hen the mediation server provides computer A and computer B with the other’s *IP address and port*...the IP address and port of the two computers are linked to form a tunnel so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server.” Pet. 35, citing Ex. 1004 Claim 1. Pankratov discloses no other mechanism identified by the Petition by which client computers begin directly communicating with each other. Thus, Pankratov’s disclosures confirm that its client computers use the external IP address and port number of the other client to activate a tunnel. Ex. 1004 [0069].

Even though the Petition does not show that Pankratov’s client computer uses the virtual IP address and subnet to establish a tunnel, the Petition argues that

limitation [1.3] is nonetheless satisfied because Pankratov's mediation server provides the virtual IP address and subnet information to Pankratov's clients to facilitate an earlier "discovery step" that the mediation server uses to decide which clients to group together. The Petition's argument is that limitation [1.3] is satisfied because the server's decision to initiate the "confirmation step" for a specific group of client computers is "based on the discovery step." Pet. 21-22.

This fails, because Pankratov does not teach that the client computer uses the virtual IP address and subnet *to establish a tunnel*, which is what would be required to satisfy limitation [1.3] under the Petition's theory. Ex. 2006 (Eslamimehr Decl.) ¶¶ 31-33. Indeed, Pankratov does not teach that the client computer considers anything that happened during the earlier discovery step in order to establish a tunnel to another client computer. These steps are entirely distinct from the client computer's perspective. Ex. 2006 ¶¶ 32-33. Prior to the step of activating a tunnel, there is first a "discovery process [that] is used to learn the mapping of the IP addresses in order to establish a tunnel between client A [*first virtual tunnel router*] and client B [*second virtual tunnel router*]." Pet. 21-22. The mediation server "assigns clients a virtual IP address and a subnet." Pet. 22. "[T]hrough the discovery process, the mediation server learns the mapping between the virtual IP address and port and the external IP and address of a port of a client device." Pet. 19. The mediation server then "groups clients and decides which clients require tunnels

between themselves.” Pet. 22. But this discovery step does not meet limitation [1.3]. Ex. 2006 ¶ 33. In the discovery step, the first client computer does not establish a tunnel with the second client computer. *Id.* The Petition does not allege otherwise. The Petition is explicit that the tunnel establishment in Pankratov happens pursuant to a different “confirmation step,” and the “confirmation step is used to activate the tunnel between the client computers.” Pet. 21-22. *See* Ex. 1004 [0069]. But this confirmation step also does not satisfy limitation [1.3]. Ex. 2006 ¶ 33. When the server moves to the “confirmation step,” it provides the client computers with the “external IP addresses of client A and B” and instructs them to communicate using those external IP addresses. Pet. 21-22, citing Ex. 1004 [0069] (“the client computers are provided with the other’s confirmed *external IP/port addresses* and they may immediately start exchanging data through the tunnel”). Critically, the clients cannot use any virtual prefix information at this stage—instead, the cited disclosure uses external IP address and port information provided by the server to establish direct communications. Ex. 1004 [0069].

Thus, the Petition’s reliance on the discovery step does not supply the missing limitation [1.3]. Although the discovery step involves assigning clients a virtual IP address and subnet, that is as far as it goes—the Petition does not show that the client computers use this information to establish a tunnel to another client computer. Ex. 2006 (Eslamimehr Decl.) ¶¶ 32-33. Instead, the Petition provides one and only one

theory for client computers establishing a tunnel: the teaching in Pankratov to have the mediation server provide the *external IP address and port* to the client computer and instruct it to use that to communicate directly to the other client computer. Pet. 21-22, citing Ex. 1004 [0069].

The Petition alternatively argues in conclusory fashion that “a POSITA would have understood that tunnels are established between clients based on the virtual network prefix information” based on paragraphs in Pankratov that describe teachings involving a “virtual network adapter.” Pet. 23, citing Ex. 1004 [0108], [0110] (“Once the client has obtained the virtual IP address, it uses it to configure a virtual network adapter.”), [0111], [0114], [0115]-[0116]. This fails. The cited paragraphs are not related to the *act of forming the tunnel* that the Petition mapped to the external IP/port information exchange mechanism described in Pankratov (Ex. 1004) ¶¶ [0067]-[0069]. Paragraphs [0110]-[0111], [0114]-[0116] simply do not relate to the tunnel-activation process. Ex. 2006 ¶ 34. Cisco’s bare assertion is ipse dixit unsupported by the cited paragraphs, and Cisco does nothing to tie these paragraphs to the *act of forming the tunnel*. Cisco entirely fails to show that Pankratov’s disclosed uses for virtual IP addresses meet limitation [1.3]’s “establishing a tunnel with the second virtual tunnel router based on the virtual network prefix information.” Ex. 2006 ¶ 21, ¶ 34-35.

Nor can the accompanying declaration of Dr. Reddy supply what the Petition lacks. The Petition's "Detailed Application of Pankratov to the Challenged Claims" does not cite the Reddy Declaration. To the extent the Petition preserved any reliance on the Reddy Declaration, it is entitled to little weight, because it recites the Petition verbatim and thus adds nothing of substance to the conclusory allegations of the Petition. The declaration is, in substance, the Petition with some citations removed, and on the limitations that decide this case it offers conclusions rather than analysis. For limitation [1.3], the Reddy Declaration repeats verbatim the conclusory assertion in the Petition that "a POSITA would have understood that tunnels are established between clients based on the virtual network prefix information." Ex. 1003 ¶ 69. But as shown above, this is not supported by the cited paragraphs in Pankratov. Ex. 2006 (Eslamimehr Decl.) ¶ 35. Expert testimony "that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight." 37 C.F.R. § 42.65(a); *see also Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (P.T.A.B. Aug. 24, 2022) (precedential) (a declaration that "merely repeats, verbatim, the conclusory assertion[s]" of the petition is entitled to little weight).

Finally, the Petition's theories for limitation [1.3] do not allege any modification to Pankratov. Pet. 21-23. Because the Petition does not allege any modification to Pankratov at this limitation, Pankratov's failure to disclose the limitation is dispositive. For at least this reason, the Petition cannot show a

reasonable likelihood to prevail as to claim 1 or any claims that depend from claim 1, including claims 2-5.

B. The Petition fails to demonstrate a reasonable likelihood to prevail on claims 6-10.

Second, with respect to claim 6 and its dependent claims (claims 7-10), the Petition's theory suffers from a similar deficiency as its theory for claim 1, and therefore fails for similar reasons. Consistent with Patent Owner's arguments above, here the Petition again relies on Pankratov's mechanism that uses external IP address and port information, instead of the "virtual network prefix information" required by the claim limitations. Limitations [6.3]-[6.4] require "the first virtual tunnel router and the second virtual tunnel router creating a tunnel; and performing direct communication between the first virtual tunnel router and the second virtual tunnel router by linking the virtual network prefix information received by the first virtual tunnel router and the second virtual tunnel router, respectively." The Petition's single ground of obviousness in view of Pankratov does not satisfy these limitations. Further, as with its analysis for claim 1, the Petition does not allege any modification to Pankratov that would cure the deficiency.

The Petition's theories for claim 6 require Pankratov's client computers "performing direct communication...by linking the virtual network prefix information received by the first virtual tunnel router and the second virtual tunnel router, respectively." But the Petition itself makes clear that this is not taught by

Pankratov. According to the Petition, “[w]hen the mediation server provides computer A and computer B with the other’s *IP address and port...the IP address and port of the two computers are linked to form a tunnel* so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server.” Pet. 35, citing Ex. 1004 Claim 1. Indeed, Pankratov claims a method of “providing each client with the *IP address/port number of the other client* so that the first client can start exchanging data with the second client directly through the tunnel and without passing through the server.” Ex. 1004, Claim 1. This does not meet limitation [6.4] under the Petition’s mapping of “virtual network prefix information.” In the only step that the Petition identifies as “performing direct communication...by linking,” the client computer is instructed by the server to perform direct communications using *external IP address and port information*—not by linking the virtual network prefix information. Ex. 1004 [0069] (“the client computers are provided with the other’s confirmed *external IP/port addresses* and they may immediately start exchanging data through the tunnel.”). Similarly, for limitation [6.2], the Petition alleges that “the server stores and sends to each computer the IP address and ports of other computers to establish tunnels,” referring again to the *external IP address and port information*. Pet. 33.

The Petition alternatively argues in conclusory fashion that “a POSITA understood that the virtual IP address and subnet for sending and receiving client

computers were linked to a specific tunnel associated with the subnet.” Pet. 34. But this fails to show that the client computers perform direct communications by linking the virtual IP address and subnet information. Ex. 2006 (Eslamimehr Decl.) ¶ 38-41. The Petition’s conclusory assertion uses passive voice and does not explain how the client computers perform direct communications *by linking the virtual IP address and subnet information*. At most, this conclusory assertion merely alleges that virtual IP addresses “were linked to a specific tunnel”—but it does not say what linked them, and it does not explain how Pankratov’s client computers would perform direct communications by linking this information. Ex. 2006 ¶ 41. The Petition’s citations to Pankratov are unavailing. The Petition cites several paragraphs in Pankratov that describe teachings involving a “virtual network adapter.” Pet. 34, citing Ex. 1004 [0110] (“Once the client has obtained the virtual IP address, it uses it to configure a virtual network adapter.”), [0114], [0115]-[0116]. This fails. The cited paragraphs are not related to *performing direct communications...by linking* that the Petition mapped to the client computers performing direct communications using external IP/port information described in Pankratov (Ex. 1004) ¶¶ [0067]-[0069]. Cisco’s bare assertion is ipse dixit unsupported by the cited paragraphs, and Cisco does nothing to tie these paragraphs to *performing direct communications...by linking the virtual network prefix information*. Cisco entirely fails to show that

Pankratov's disclosed uses for virtual IP addresses meet limitation [6.4]. Ex. 2006 (Eslamimehr Decl.) ¶ 41.

Nor can the accompanying declaration of Dr. Reddy supply what the Petition lacks. Ex. 2006 (Eslamimehr Decl.) ¶ 42. The Petition's "Detailed Application of Pankratov to the Challenged Claims" does not cite the Reddy Declaration. To the extent the Petition preserved any reliance on the Reddy Declaration, it is entitled to little weight, because it recites the Petition verbatim and thus adds nothing of substance to the conclusory allegations of the Petition, as discussed above. 37 C.F.R. § 42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (P.T.A.B. Aug. 24, 2022) (precedential).

Finally, the Petition's theories for limitation [6.4] do not identify any modification to Pankratov. Pet. 34-35. For the reasons above, this fails to supply limitation [6.4]. For at least this reason, the Petition cannot show a reasonable likelihood to prevail as to claim 6 or any claims that depend from claim 6, including claims 7-10.

VII. CONCLUSION

For the foregoing reasons, the Petition does not establish a reasonable likelihood of prevailing as to any challenged claim. Patent Owner respectfully requests that the Board deny institution of inter partes review of claims 1–10 of the '887 patent.

Date: July 2, 2026

/James A. Milkey/
James A. Milkey, Reg. No. 79,503
Russ August & Kabat
12424 Wilshire Blvd., 12th Floor
Los Angeles, CA 90025

Counsel for Patent Owner

CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 5,264 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

Date: July 2, 2026

/James A. Milkey/
James A. Milkey, Reg. No. 79,503
Russ August & Kabat
12424 Wilshire Blvd., 12th Floor
Los Angeles, CA 90025

Counsel for Patent Owner

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on July 2, 2026 by filing this document through the Patent Trial and Appeal Case Tracking System (P-TACTS) as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

Patrick D. McPherson, Reg. No. 46,255
PDMcpherson@duanemorris.com
DUANE MORRIS LLP
901 New York Avenue NW
Suite 700 East
Washington, D.C. 20001
T: (202) 776-7800

Patrick C. Muldoon, Reg. No. 47,343
PCMuldoon@duanemorris.com
DUANE MORRIS LLP
901 New York Avenue NW
Suite 700 East
Washington, D.C. 20001
T: (202) 776-7800

Joseph A. Powers, Reg. No. 47,006
JAPowers@duanemorris.com
DUANE MORRIS LLP
30 South 17th Street
Philadelphia, PA 19103-4196
T: (215) 979-1000

Date: July 2, 2026

/James A. Milkey/
James A. Milkey, Reg. No. 79,503
Russ August & Kabat
12424 Wilshire Blvd., 12th Floor
Los Angeles, CA 90025

Counsel for Patent Owner