

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.,
Petitioner,

v.

MONARCH NETWORKING SOLUTIONS, LLC,
Patent Owner.

Case IPR2024-00175
Patent 8,693,369

**PATENT OWNER'S SUR-REPLY
TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,693,369**

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EXHIBIT LIST

Exhibit	Description
EX2001	Declaration of Daniel Minoli in Support of Patent Owner's Preliminary Response
EX2002	<i>Curriculum Vitae</i> of Danieal Minoli
EX2003	RFC 793 ("Transmission Control Protocol") (Sept. 1981), available at https://datatracker.ietf.org/doc/html/rfc793
EX2004	RFC 768 ("User Datagram Protocol") (Aug. 1980), available at https://datatracker.ietf.org/doc/html/rfc768
EX2005	RFC 1933 ("Transition Mechanisms for IPv6 Hosts and Routers") (Apr. 1996), available at https://datatracker.ietf.org/doc/html/rfc1933
EX2006	RFC 1631 ("The IP Network Address Translator (NAT)") (May 1994), available at https://datatracker.ietf.org/doc/html/rfc1637
EX2007	RFC 2663 ("IP Network Address Translator (NAT) Terminology and Considerations") (Aug. 1999), available at https://datatracker.ietf.org/doc/html/rfc2663
EX2008	Decision Ordering Reexamination, No. 90/015,315 (Jan. 18, 2024)
EX2009	PTO Reexamination Statistics, available at https://www.uspto.gov/sites/default/files/documents/reexamination-op-stats.pdf (last accessed Feb. 20, 2024)
EX2010	U.S. Pat. Pub. 2002/0141389 to Fangman <i>et al.</i>
EX2011	RFC 2460 ("Internet Protocol, Version 6 (IPv6) Specification") (Dec. 1998), available at https://datatracker.ietf.org/doc/html/rfc2460
EX2012	Declaration in Support of Motion for <i>Pro Hac</i> Vice Admission of William B. Collier, Jr.
EX2013	RFC 1010 ("Assigned Numbers") (May 1987), available at https://datatracker.ietf.org/doc/html/rfc1010

Exhibit	Description
EX2014	Declaration of Daniel Minoli in Support of Patent Owner's Response
EX2015	Declaration of Daniel Minoli in Support of Patent Owner's Sur-reply

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I. Introduction

Petitioner's Reply relies largely on mischaracterizing the references and imputing teachings to those references that do not exist.

In its Reply regarding Ground 1, Petitioner presents new arguments that should have been raised in the Petition, and improperly incorporated large sections of its expert's declaration with no additional discussion of Biswas. Regardless, Petitioner's arguments do not remedy the failures of Biswas described in Patent Owner's Response. These arguments should be rejected.

With respect to Fangman in Grounds 2 and 4, Petitioner misunderstands the Fangman reference. Under Petitioner's theory, an IP packet sent in an "unsolicited" communication would allegedly be routed based on the destination port number falling within a port range assigned to a destination device. But no such scenario exists in Fangman.

Instead, Petitioner is effectively modifying the Fangman reference without any suggestion or motivation to do so. In every embodiment, Fangman relies on first initializing and setting up an IP telephone call. This uses outbound packets to identify a port number for the call. Every packet sent back uses this port number to identify the destination device, not a port range assigned to the destination device.

Petitioner makes the same mistake with respect to King in grounds 2 and 4. But, King never even considers inbound packets. Instead, its disclosure relates to

subscriber policies that are only relevant to initial outbound packets. So, the port range that Petitioner relies on in King is only used as source information, not destination information. And, King's system would not be applied in reverse.

Petitioner also points to the wrong device in King. To the extent port ranges are described, they are used by an "aggregation device" to identify subscriber policies. King's closest equivalent to the "routing" claimed by the '369 packet occurs at a different device, the CPE. Address and port translation only occur at the CPE, so even if King rendered obvious the use of port ranges to identify a destination device, it does not use that information to route a packet in the private destination network.

II. Sections Of Petitioner's Reply Should Be Given No Weight For Violating 37 C.F.R. § 42.6(a)(3).

As an initial matter, several sections of Petitioner's reply should be given no weight for violating 37 C.F.R. § 42.6(a)(3). Petitioner's brief nakedly incorporates by reference large swaths of its expert's new declaration to support its conclusory statements, a direct violation of 37 C.F.R. § 42.6(a)(3). *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 8-10 (PTAB Aug. 29, 2014) (informative).

In *Cisco*, Petitioner repeatedly "include[d] citations to the Declaration to support conclusory statements for which the Petition does not otherwise provide an argument or explanation." *Id.* at 9. In one example, Cisco (the petitioner) asserted

that the art disclosed or rendered obvious a claim element in a conclusory paragraph and cited to three paragraphs of the declaration. *Id.* The cited paragraphs included one and a half pages of analysis and reasoning that was entirely absent from the petition. *Id.* The Board concluded that “[t]his practice of citing the Declaration to support conclusory statements that are not otherwise supported in the Petition also amounts to incorporation by reference.” *Id.* at 9.

Petitioner’s Reply does the same thing. For example, with respect to Ground 1, the Reply does not cite a single section of Biswas. Instead to support conclusory statements, the Reply cites up to six paragraphs from Dr. Bhattacharjee’s declaration at a time, covering up two six pages of text. Reply 2-5. With respect to Grounds 2 and 4, discussing Fangman, the Reply argues that “Patent Owner’s argument is incorrect, resting on a fundamental misunderstanding of NAT and IP telephony and contradicting Fangman’s explicit disclosures.” Reply 7. In support of this assertion, Petitioner cites 11 paragraphs from Dr. Bhattacharjee’s reply declaration covering 10 pages of text. *See* EX1039 ¶¶11-21. The following two statements in that paragraph are not better, citing extensive sections of Dr. Bhattacharjee’s declaration with not support from Fangman itself. Indeed much of the Reply repeatedly cites to large blocks of Dr. Bhattacharjee’s declaration with no other explanation. Each of these sections violate 37 C.F.R. § 42.6(a)(3).

Accordingly, the Board should “not consider arguments that are not made in the Petition, but are instead incorporated by reference to the cited paragraphs” of Dr. Bhattacharjee’s declaration. *Cisco*, IPR2014-00454, Paper 12 at 10.

III. Ground 1

Petitioner’s Reply presents entirely new arguments as to the Biswas reference that do not cite a single section from Biswas disclosure. “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools*, 829 F.3d at 1380. Where Petition fails to meet this burden, the Board is not “free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner.” *Id.* at 1380-81. This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

Petitioner now argues that Biswas’s inbound transmissions disclose claims 8 and 12 of the ’369 Patent. However, this position was not articulated in the Petition. And, it ignores Petitioner’s arguments with respect to claims 7 and 11, from which claims 8 and 12 depend. These new arguments should not be considered.

Nonetheless, Petitioner’s Reply is premised entirely on the idea that “claims 8 and 12 are directed to inbound transmissions.” Reply 2. But, claims 8 and 12 do

not address transmissions *at all*. Instead, both are directed to a “configuration method” to configure a piece of terminal equipment. EX1001 15:16-22 (Claims 7, 8), 15:39-16:12 (claims 11, 12). To the extent a data packet is referenced it is only to explain the claimed “identifier”:

The method according to claim 7 of configuring a piece of terminal equipment, comprising a step of assigning to said piece of terminal equipment an identifier of a routing device adapted to route a data packet comprising said primary address as the destination address to said piece of terminal equipment

15:15-22 (claim 8); *also* 16:7-12 (claim 12) (similar).

This is why Petitioner’s argument fails, as explained in the Response. The Petition argued the claimed “identifier of a routing device” was an identifier of Biswas’s gateway master and that the “primary address as the destination address” was “the global address that is used by gateway master 110” of Biswas. Pet. 27-28. Whether a packet is transmitted inbound or outbound, the global address provided to the terminal device is an identifier of edge routers 104, not the global address of the master gateway 110. EX1022, 6:37-40.

Even Petitioner’s expert’s analysis highlights this error. The heart of Petitioner’s argument is that “the ’369 claims are directed to inbound transmissions, and [Patent Owner] focuses instead on Biswas’s outbound teachings.” Reply 1. But,

Petitioner's expert contends that "a host can use a global address to communicate with the gateway master." EX1039 ¶10. This is only in the *outbound* transmission that Petitioner now rejects.

Moreover, Petitioner's expert's "test" represents communication between two devices: a host device and a NAT device, forgetting that in Biswas, there are three devices, and a CPE is located between the host and the master gateway. *See* EX1039 ¶10 (only testing a connect between a host on an internal network and a NAT device on the network); EX1022 Fig. 1. Petitioner's new arguments in reply do not solve the failures of Biswas.

IV. Grounds 2 and 4: Fangman

Petitioner contends that "[t]he crux of the dispute between the parties comes down to how Fangman implements and utilizes the disclosed 'table of semi-permanent mappings of the external IP address and ports to the internal hosts and ports.'" Reply, 5 (quoting EX1024, 8:49-51). Fundamentally, the dispute is whether Fangman's NAPPT maps "the external IP address and ports to the internal hosts and ports" or if it maps the "port ranges" to route the IP addresses. Reply, 5-6.

The thrust of Petitioner's argument is premised on its theory that Patent Owner misunderstands Fangman, but, as explained below, the reverse is true. Petitioner contends that Fangman somehow discloses the reception of "unsolicited" packets, where a port number has not already been stored at Fangman's Service Gateway.

But, this never occurs. EX2015 ¶3. Instead, every embodiment in Fangman first sends an outbound packet during initialization that results in a mapping of an internal IP address to a single port number. *Id.* ¶6-8. Thus, every embodiment where the Service Gateway receives an external packet and routes it to the destination device uses the port number stored in the NAPPT table. *Id.* Petitioner’s hypothetical NAPPT table with port ranges is simply a fabrication—Fangman never even hints at such an implantation.

A. Fangman Is Clear: NAPPT At The Service Gateway Always Uses Existing Port Number Assignments.

Much of Petitioner’s argument is premised on the idea the “IP telephones cannot rely on prior outbound transmissions.” Reply, 11; *see also* Reply 6-7. Since IP telephone must receive calls, Petitioner contends that Fangman describes a situation where an IP telephone will receive a call, but no port number will be assigned to that transmission. *Id.* 7. Petitioner thus concludes that Fangman service gateway, located between the private network of the IP telephone and a public network, must forward an inbound packet to the IP telephone using a port range. *Id.* 7, 11.

Petitioner bases this theory in part on: 1) a purported distinction between traditional NAT and the NAPPT technique describe by Fangman; and 2) Fangman’s description of an outgoing phone call. Reply 9-10, 123. But, in every instance, Fangman relies on prior outbound transmissions to assign a port number to each IP

Telephone. EX2015 ¶12. Nothing Petitioner points to in Fangman illustrates a call initiated without a pre-existing IP address and port allocation at the service gateway, as explained below.

Figures 4A-6C illustrate various aspects of IP telephone initialization, registration, and configuration in various levels of detail. EX1024 5:51-56; EX2015 ¶9. Figure 4A shows the process at a high level, from powering on a phone to placing a call. EX1024 Fig. 4A, 15:51-63. This embodiment involves turning on the phone (step 402), initializing the phone (step 404), registering the phone (step 406), logging in the user (step 408), and finally placing or receiving calls (step 410). *Id.*; EX2015 ¶9 Fig. 4A. Figure 4B illustrates similar steps in slightly more detail, and separates placing a call into steps 480 (a Call Setup process) and 490 (the RTP flow related to the IP telephone call). *Id.* 16:41-42, 17:61-65.

The IP Telephone registration process is illustrated in Figures 6A, 6B, and 6C. *Id.* 21:2-3; EX2015 ¶9. In this step “the Media Gateway Controller (MGC) 150 and the IP telephone 120 may perform IP telephone 120 registration.” EX1024 16:21-23. This “involve[s] registering the IP telephone 120 with the MGC 150 and includes transmitting registration information between the MGC 150 and the IP telephone 120.” *Id.* 16:22-27.

Fangman notes that this process uses the well-known MEGACO standard, but other existing standards could be implemented. *Id.* 21:4-6. During the registration

process, the system first “determine[s] if an IP port is available for registration.” *Id.* 21:13-14 (emphasis added). “If an IP port is not available for registration then in step 606 the registration may fail and the process may terminate.” *Id.* 21:14-16.

Next, the system determines if the Media Gateway Controller (“MGC”) address was provided by the prior DHCP process, if so, “the client may select *a port number* for MEGACO” and “a primary MGC address to register.” *Id.* 21:23-25 (emphasis added). The client then (in step 614) needs to transmit a “Service Change command” to the MGC to complete registration. *Id.* 21:26-27. At step 638, the first IP packet used in the Fangman’s initialization process is created. Its header is illustrated in Figure 6C:

Network Address Persistent Port Translation (NAPPT): Source IP: Private to Public Source Port: UNCHANGED Dest. IP: Primary MGC Dest. Port: 55555

Id. 21:27-33; Fig. 6C; EX2015 ¶9. As with all packets transmitted between a private and public domain in Fangman, this packet has undergone the NAPPT process, changing the private IP address to a public one, but leaving the port number unchanged. *See id.* 8:45-57; *see also* EX2015 ¶8. This packet is transmitted from the internal client to the MGC, so the source address and source port identify the client device, and the destination address and destination port identifies the MGC. EX1024 22:24-33 (“the MGC 150 may store the information in response to the registration.

One example of the stored information is shown as part of 660, comprising the IP telephone IP address, denoted as SG Public, referring to the Service Gateway's public IP address for the telephone 120, the MEGACO port, indicated here as UNCHANGED, and the SG IP, indicated as SG Public.”).

After the packet is transmitted to the MGC, the MGC may respond with a “service change” in the form of an IP packet back to the source IP telephone, as shown in step 662. *Id.* 22:34-40. Here, the packet header now includes the source IP address of the MGC and the source port previously set to 55555. *Id.* The destination port is now the previous source port, with the service gateway’s public address and the previously set IP telephone port number. *Id.* 22:40-43.

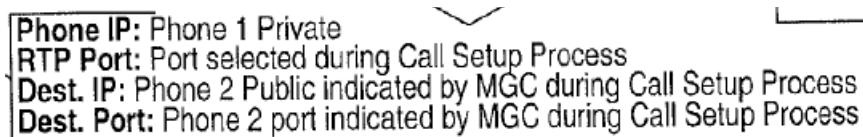
As the packet proceeds through the network, it eventually arrives back at the SG. *Id.* 22:45-50. Here, in step 676, the SG performs NAPPT, using the previously established relationship between the port number and the private IP address of the IP telephone. *Id.* 22:52-60. A few more steps follow, and the registration process is complete

As the process above illustrates, before the IP telephone can even send or receive a call, it must register a port number with the MGC and sending a an outgoing packet with the port number through the SG. EX2015 ¶12. Since NAPPT requires “maintain[ing] a table of semi-permanent mappings of the external IP address and

ports to the internal hosts and ports,” there is no teaching that suggest instead maintaining a mapping of port ranges. EX2015 ¶11-12; *see* EX1024 8:49-51;.

The call setup process of Figures 7A, 7B, and 7C reinforces this understanding. EX2015 ¶10. There, packets are again exchanged, in part using NAPPT. EX1024 23:36-44 (steps 704, 706, and 708), 24:26-34 (step 738); *see also id.* 8:49-57, 25:11-22 (steps 768-776). But, at the end of the call setup process, the IP phone will have the MEGACO information needed to place a call, including the public IP address and port number previously assigned to that phone during the registration process. EX2015 ¶10.

Finally in Figures 10A-B relied on by Petitioner relate to an IP telephone call initiated by from an internal IP telephone to an external one using the previously assigned public IP address and port number stored in the MGC and SG. EX1024 28:51-56, 29:1-14; EX2015 ¶11. The resulting packet is illustrated in Figures 10A-B. The first image illustrates the packet structure as it leave the first phone, including the previously assigned port number for phone 2:



Phone IP: Phone 1 Private
RTP Port: Port selected during Call Setup Process
Dest. IP: Phone 2 Public indicated by MGC during Call Setup Process
Dest. Port: Phone 2 port indicated by MGC during Call Setup Process

EX1024 Fig. 10A. This later image, illustrates the same packet after it has been NAPPT by the second SG and is sent to the second phone:

Network Address Persistent Port Translation (NAPPT):
Source IP: Phone 1 Public NAT
Source Port: UNCHANGED Phone 1 port
Dest. IP: Phone 2 Public changed to Phone 2 private
Dest. Port: Phone 2 port UNCHANGED

Id. Fig. 10B. As these illustrate the destination information for the second phone is the same information selected during the second phone's registration process, not some random port number falling within a prescribed range, and that single port number is used throughout the transmission process. EX2015 ¶11-12.

Thus, in every embodiment described by Fangman, a single port number is assigned for all phones involved and stored in the respective service gateways' NAPPT tables before a packet is ever received by a phone. *Id.* Yet, despite these disclosures, Petitioner argues to the contrary that 1) NAPPT necessarily describes using port ranges to route packets; 2) that Fangman's IP telephones do not rely on prior outbound transmissions; and 3) that "other disclosures confirm that Fangman relies on port ranges to route inbound data packets." Fangman disproves each of these assertions.

B. NAPPT Does Not Describe Or Render Obvious Selecting An Identifier Of A Destination Device Based On A Port Range Or Port Mask.

First, Petitioner focuses on purported differences in NAT and NAPPT. Reply 9-11. Indeed, Fangman describes problems with the existing IP Telephone techniques, including the use of NAT. *See* EX1024 1:36-67. Fangman's solution proposes various changes to many aspects of IP telephony, one of which is NAPPT.

With respect to NAT, Fangman identifies two issues. “The major problem with NAT is that it only modifies the source IP address and port information in the IP header, and not anywhere in the payload.” EX1024 1:56-59. The second challenge is NATs dynamic nature:

The NAT process is also dynamic, and so a host will be associated with a specific port number only during the session in progress. The next session will almost assuredly be over a different port. This problem is exacerbated by the fact that two end nodes that need to communicate directly may be using the same private IP address.

Id. 2:5-10.

Fangman explains that NAPPT solves this second issue simply by “changing the private source IP address to a public source IP address while leaving the source port number unchanged, and where the public source IP address and the source port number may be used to uniquely identify the IP telephone.” *Id.* 4:13-17. Thus, on an “inbound” packet, NAPPT involves “using the public destination IP address and the destination port number to uniquely identify the [destination] IP telephone, and changing the public destination IP address to a private source IP address of the IP telephone while leaving the destination port number unchanged.” *Id.* 4:29-33. Thus, and as explained above in reference to Fangman’s Figures, NAPPT in the SG simply maintains a table of existing connections with unchanged port numbers:

The SG 170 may maintain a table of semi-permanent mappings of the external IP address and ports to the internal hosts and ports. The SG 170 may continue to replace the internal or private source IP address with the NATed external source IP address. It may not, however, modify the port information, though it may validate it to ensure the correct internal host is using its assigned port range. Such Network Address Translation may be referred to as Network Address Persistent Port Translation (NAPPT).

EX1024, 8:49-58; EX2015 ¶12. Nothing about the differences between NAT and NAPPT suggests deviating from the embodiments described in Fangman. As such, NAPPT does not render obvious that a port range or mask (rather than the assigned port number) is used to “select[] at least one identifier of the destination equipment” and “rout[e] the packet to the destination equipment based on said identifier.” EX1001, 14:15-28 (Claim 1).

C. Fangman Never Describes “Unsolicited” Transmissions.

Second, Petitioner contends that “Because IP telephones cannot rely on prior outbound transmissions, Fangman invented NAPPT to route inbound data packets based on port ranges.” Reply 11. This is simply untrue. As explained above, every embodiment of Fangman first selects a port in an outgoing communication, either to initialize and register an IP telephone or to setup a call. *Supra* §IV.A.

Petitioner's arguments to the contrary consist of mixing and matching various sections of Fangman to create statements that simply do not exist. For example, Petitioner points to column 8 line 45 through 67 of Fangman, and contends that Fangman states NAPPT stores "the port ranges in 'a table of semi-permanent mappings.'" Reply 11. Instead, these are two different concepts: first, port ranges are allocated as part of the DHCP process, then the SG maintains "a table of semi-permanent mappings of the external IP address and ports to the internal hosts and ports." EX1024 8:45-67. As discussed above, these mappings are created one-to-one when an IP telephone is initialize or a call is set up. *Supra* §IV.A.

Petitioner also points to a section of column 4 of Fangman, from line 18 to line 27. Reply 12. But, this embodiment only states that a port number in a data packet is "a destination port number in the assigned range of port numbers." EX1024 4:18-27. The next sentence explains that the port number, rather than range, is used to identify the IP telephone:

Performing NAPPT on the data packet received from the destination may include using the public destination IP address and the destination port number to uniquely identify the IP telephone, and changing the public destination IP address to a private source IP address of the IP telephone while leaving the destination port number unchanged.

EX1024 4:28-33.

Finally, Petitioner points to column 32 lines 48 through 57 of Fangman. Reply 12. This is an element of claim 1, which explains that NAPPT includes storing translation information that includes “the assigned ports” *not* the “range of port numbers” described earlier in the claim. EX1024 32:35-57.

D. Fangman’s “Other Disclosures” Do Not Support Petitioner’s Position.

Finally, Petitioner argues that “other disclosures” in Fangman show that “Fangman relies on port ranges to route inbound data packets.” Reply 12-13. As an initial matter, Petitioner’s burden is not just to show that Fangman “relies on port ranges” but that Fangman renders obvious “determining a port [range] assigned to the destination equipment,” “selecting at least one identifier of the destination equipment,” and “routing the packet to the destination equipment based on said identifier.” EX1001 14:15-28 (Claim 1).

Here, Petitioner newly relies on Fangman’s “media gateway controller.” Reply 12-13.¹ Petitioner never argued in the petition that the media gateway controller routes packets, nor has Petitioner pointed to anything in its Reply suggesting such. At most, Petitioner’s citation suggests that the media gateway controller has similar DHCP information as the service gateway. *See* EX1024 8:59-62.

¹ This theory was not raised in the petition and should be rejected.

Petitioner also points to Fangman’s second service gateway 170B, which receives an inbound packet in Figure 10 “without first sending a prior outbound packet.” Reply 13-14. But, as Figures 10A and 10B repeatedly illustrate, the destination IP address and destination port number are the address and port identified during the call setup process, just as described above. EX1024 Figs 10A, 10B, 29:7-14; EX2015 ¶¶10-12. In other words, the second IP Telephone also has a pre-existing port number associated with it at the SG. EX2015 ¶¶10-12.

E. Petitioner’s New Inherent Obviousness Argument Is Improper Hindsight.

With respect to both Patent Owner’s arguments and the Board’s Institution Decision, Petitioner now asserts a new argument: even if NAPPT does not use port ranges, a POSITA would decide to use port ranges. Reply at 13, 15-16. This inherency argument was not raised in the petition and amounts to improper use of hindsight. It should be rejected for both reasons.

In the context of using a POSITA’s knowledge to supply a missing limitation, the Federal Circuit considers whether “‘the [missing] limitation in question [is] unusually simple and the technology particularly straightforward.’” *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1338 (Fed. Cir. 2020) (quoting *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361-62 (Fed. Cir. 2016)). *Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (granting little weight to an expert declaration which “merely repeats, *verbatim*, the conclusory assertion for which it is

offered to support”) (precedential). Here, this assertion is pure hindsight supported only by language in the expert report mimicking the Reply. Compare *id. with* EX1039, ¶¶21, 22-23. Moreover, it oversimplifies the challenges involved with such a change. EX2015 ¶16. Such a system would fundamental change how packet translation is handled, would require extensive testing, and risks incompatibility with existing systems. *Id.*

As noted above, Fangman recognized that port ranges could be used in some context (the DHCP Lease information) but chose not to use port ranges in routing packets or NAPPT, as explained above. *Id.* Petitioner’s efficiencies arguments ignore the fact that NAPPT need only store information for active connections, and storing and analyzing unneeded IP addresses and port ranges instead adds complexity and needlessly uses resources. *Id.* Petitioner’s argument here should be given no weight.

F. There Is No Meaningful Distinction Between The Board And Petitioner’s Interpretation Of Fangman.

Finally, Petitioner tries to draw a distinction between the Board and Petitioner’s interpretation where there is none.² Reply 15-17. The Board’s Institution

² Petitioner also argues that Patent Owner’s Response attempts to construe the word “use” as it is used in Petitioner’s argument. Reply 14. “Use” is not found in the claims of the ’369 Patent. To the extent Petitioner is referring to “use” in Fangman,

Decision cited Petitioner's Preliminary Response in recognizing that Fangman does not rely on port ranges, and instead associates port numbers with IP addresses. Decision 23-24 (citing Prelim Resp. 24-25); *see also* Resp. at 23-24 (discussing the NAPPT table). There is no meaningful distinction between the two. For the reasons explained above, Fangman does not teach or render obvious the use of port ranges in NAPPT.

G. Fangman Does Not Render The '369 Patent Obvious.

As the above illustrates, Petitioner's contentions that Fangman discloses using a port range are a fabrication based on selective quotation from Fangman. These arguments do not hold water in view of Fangman's actual disclosure. Fangman does not render obvious claims 1-3, 5-6 and 15 of the '369 Patent.

V. Grounds 3 and 5: King

The dispute around King centers on two issues: 1) whether King's reliance on a source address and port number can teach a destination address and port number; and 2) whether King even teaches routing a packet as claimed by claims 1-3, 5-6 and 15 of the '369 Patent. Petitioner must win on both grounds to establish obviousness. But as explained below, Petitioner is wrong on both.

as extensively explained above, nothing in Fangman suggests routing a packet based, in part, on identifying a port range, regardless of the definition of the word "use."

As an initial matter, Petitioner contends “Patent Owner admits King teaches that a device external to the private network can use port ranges to ‘identify[] a source device’ when routing outbound transmissions.” Reply, 20. This is not true. As Patent Owner explained in its Response and further explains below, King does not use port ranges to route a packet *at all*. Resp. 31-33.

Regardless, Petitioner first asserts that “A POSITA would have understood that King’s outbound disclosures can easily be applied to routing inbound transmissions and that King’s disclosures actually teach toward that idea.” Reply, 20. Petitioner argues that it would be simple to implement the outbound techniques of King to inbound packets; and that King teaches toward this idea. *Id.* at 21.

Neither argument holds water. King is directed towards outbound packets, because its objective is to identify subscriber information of the source device. EX1025, 4:34-35 (“A method and apparatus for providing data session source device information is described.”); EX2015 ¶13-14. There is no need to retrieve the subscriber information on a subsequent return packet, because the initial authorization “is handled during a service session between the user device 100 and the aggregation device 110 which, once setup, *allows the user device 100 to carry out multiple data sessions*, for example a further data session with a second remote device 116.” *Id.* 1:55-59; *accord id.* 1:28-33 (“The aggregation device obtains and applies a policy to communication between the user device and the Internet ensuring

for example that the user device is [authorized], that an appropriate quality of service (QoS) Such as bandwidth is applied and that an appropriate billing method is applied.”); EX2015 ¶14. Once communication has been initiated by a source device “[t]he aggregation device obtains an applies a policy to communication between the user device and the Internet,” EX1025 1:28-30; *see also* EX1025, 1:36-39 (“first user device 100 initiates a data session with a first remote destination device 102 which can for example be a remote host or service reachable via the Internet designated generally 104.”). Thus, Fangman does not render obvious performing its teachings in reverse, because there is simply no reason to do so. EX2015 ¶14.

Petitioner next argues that “aggregation device 110 must know where to send inbound data packets,” and therefore “A POSITA would have understood that aggregation device 110 could use NAT or PAT to route these inbound data packets” Reply 22. Petitioner then postulates that “a POSITA would have known that implementing NAT or PAT would needlessly waste resources” and thus “would have therefore known to use King’s port-range disclosure to route inbound data packets.” *Id.* This assertion amounts to nothing more than hindsight bias.

As explained above and in Petitioner’s response, King’s use of port ranges is not in connection with PAT or NAT. EX2015 ¶15; *see* EX1025 6:58-61. It is, instead, only for the purpose of identifying subscribers. EX2015 ¶15; *see* EX1025 2:47-48. Since King recognized a scenario where the use of port ranges could be

beneficial, it could have also described using port ranges to identify a local address to route a packet to. EX2015 ¶16. But the inventors of King chose not to do so, and instead, chose not to significantly modify the existing NAT and PAT functions of the relevant devices. *Id.* It also oversimplifies the challenges involved with such a change. *Id.*

Next, Petitioner attempts to remedy the fact that King does not teach routing packets based on a port range at the aggregation device. Reply at 22-23. There, Petitioner recognizes that King only describes using prior art NAT and PAT techniques to translate packages, but instead suggests that a POSITA would have implemented a modified version of PAT or NAT (not described in King) in King's aggregation device 110. *Id.* The only direct support in King that Petitioner and its expert cites for this theory is column 2 lines 13 through 39. *Id.* at 22.

The cited discussion does not describe the invention of King, nor does it concern address translation. Instead, this section is part of the background discussion in reference to figure 3, “[w]here a CPE serves a single user device then management of a session....” EX1025, 2:3-4. There, no change in the IP address occurs, because only a single device is in communication with the aggregation device 110. *See id.* 2:49-52 (where there are multiple devices, the CPE must act as a translation service).

However, Figures 4 and 5 represent “most instances.” *Id.* 2:49-61. There, the CPE, not the aggregation device, performs the translation step of swapping the user

device source address for a CPE assigned source address. *Id.* 2:55-61. In every case where address translation is discussed, “the CPE [not the aggregation device] translates the source address to its own overloaded IP address” and “the CPE [not the aggregation device] additionally translates the TCP source port to its own TCP port in a Port Address Translation (PAT) step” *Id.* 2:65-3:1; *accord id.* at 5:67-6:2 (“[U]pon receipt of a packet from a user device, the CPE translates the source address and source port.”), 6:58-61 (“[S]ince all address or port translation is performed at the CPE device, no [] translation or deep packet inspection overheads need to be incurred at the aggregation device itself.”). Indeed, the entire focus of King is on the issue of identifying a source device after its source address and port have been changed by the CPE. *Id.* 3:42-52; *see also* 5:22-35; EX2015 ¶13-14. There is no teaching in Fangman that suggests modifying the source IP address and/or port number **again** at the aggregation device 110. Indeed, Fangman explicitly teaches against such an implementation: “[S]ince **all** address or port translation is performed at the CPE device, no [] translation or deep packet inspection overheads need to be incurred at the aggregation device itself.” EX1025, 6:58-61 (emphasis added); EX2015 ¶15. Petitioner’s suggestion to entirely change Fangman’s system to allegedly render obvious the ’369 Patent is nothing more than improper use of hindsight and goes against the express disclosure of Fangman. EX2015 ¶15.

VI. A POSITA Would Not Combine Kumar With King Or Fangman

Petitioner focus on Kumar's bit masks, but fails to address the key issue: why a POSITA would look to Kumar *at all*. A POSITA would only look to Kumar's bit mask if they identified Kumar as a helpful tool to improve Fangman or King. But, neither would benefit from Kumar's complicated classification system. Fangman only addresses IP telephony packets, and there would be no need for a POSITA to look to classify those packets. King focuses on subscriber information and initialization. It does not concern packets returning to a client device from the internet. Thus, there is simply no need in either Fangman or King to even reference Kumar.

VII. Conclusion

Monarch respectfully requests that the Board affirm the validity of the claims if the '369 Patent for the reasons stated herein.

Dated: December 3, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing Patent Owner's Sur-Reply was served via email to lead and backup counsel of record for Petitioners as follows:

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that this brief complies with the type-volume limitation of 37 C.F.R. § 42.24 because this brief contains 5,451 words as calculated by Microsoft Word, excluding the items exempted under 37 C.F.R. § 42.24.

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