

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 IPR2024-00561
Patent 8,130,775

**PATENT OWNER'S SUR-REPLY
TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,130,775**

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EXHIBIT LIST

Patent Owner's Exhibits

Exhibit	Description
EX2001	Declaration In Support of Motion For Pro Hac Vice Admission of Alden G. Harris under 37 C.F.R. § 42.10(c)
EX2002	RFC3031 - Multiprotocol Label Switching Architecture
EX2003	An Architecture for Multi-Segment Pseudo-Wire Emulation Edge-to-Edge' (draft-ietf-pwe3-ms-pw-arch-02.txt) [as filed in <i>ex parte</i> reexamination no. 90/014,701]
EX2004	Redline comparing draft-ietf-pwe3-ms-pw-arch-00 with draft-ietf-pwe3-ms-pw-arch-02
EX2005	U.S. Patent No. 7,602,702 to Aggarwal
EX2006	Declaration of Dr. Michael Mitzenmacher in Support of Patent Owner's Response
EX2007	<i>Curriculum Vitae</i> of Dr. Michael Mitzenmacher
EX2008	List of Prior Testimony of Dr. Michael Mitzenmacher

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I. Introduction

Petitioner Juniper argues Patent Owner Monarch is trying to “narrowly construe the claims.” Reply at 1. But all of Monarch’s arguments rest on the plain meaning of the claims and the parties’ agreed construction of “link.”

Juniper’s position requires it to disregard the plain language of the claims. For example, Juniper is forced to conflate the meanings of two different claim terms, “link” and “pseudowire.” Juniper argues “pseudo-wires and links are not as distinct as PO suggests” and “a pseudo-wire is comparable to a link” because Juniper needs to blur the distinction between these terms to try to make its obviousness arguments work. Reply at 6-7. None of Juniper’s references show a link being shared by two pseudo-wires, so Juniper must find a way to conflate a pseudo-wire with a link.

Juniper’s position also requires it to ignore the agreed construction of “link,” which is “a connection between an interface of a first router and an interface of a second router.” Juniper distracts from this construction by arguing interfaces can be either physical or virtual, but this is a red herring. None of Juniper’s references disclose two pseudowires sharing the same interfaces (whether virtual, physical, or otherwise) on the input router and the intermediate router, which is required by the plain claim language. Instead, Bocci teaches that Petitioner’s first and second multi-segment pseudo-wires *cannot* connect to any interface of the intermediate router. EX1031 at 6 (a “Multi-Segment Pseudo Wire (MS-PW)” behaves as “a single point-

to-point PW” that “by definition MUST terminate on a T-PE”); Mitzenmacher Dec.

¶60. Juniper’s expert Dr. Bhattacharjee submitted a supplemental declaration in which he argues for the first time that “a POSITA would understand that the pseudo-wire connects to an interface of the intermediate router in order to traverse that router” but he cites no evidence at all, and certainly does not point to any disclosure in Bocci, Wainner, or Kamite. EX1042 at ¶26. Nor does he argue that such a disclosure is inherent. When a party is reduced to arguing, without support, that a POSITA would “understand” a limitation to be met, it is because they cannot show the limitation is actually met.

II. Claim Construction and Interpretation

A. “Link”

A “link” is a physical connection. The parties agree a link connects an “interface of a first router and an interface of a second router.” Routers are physical devices that exist in the real world. A link between their interfaces must necessarily be a physical thing, such as a wire, cable, or radio signal. Otherwise, the routers could not send or receive information to or from one another. The ’775 Patent never mentions “virtual” links or “virtual” interfaces.

Regardless, none of Patent Owner’s arguments depend on a “link” being a “physical connection” as Petitioner incorrectly argues. Reply at 5. Patent Owner is relying only on the agreed construction of link: “a connection between an interface

of a first router and an interface of a second router.” *See* Response at 19 (adopting this construction and noting “petitioner does not propose any additional constructions”). Petitioner’s references do not show *any* link between an input router and an intermediate router being shared by the purported first and second pseudowires.

Dr. Mitzenmacher’s opinions likewise do not depend on the interfaces being physical rather than virtual. In the purported combination of Wainner and Bocci, “[b]ecause PE5 is an S-PE, multi-segment pseudowires MSPW22-24 and MSPW22-28 *cannot* connect to *any interface* on PE5.” EX2006 at ¶98 (emphasis added). In the purported combination of Kamite and Bocci, “[n]either multi-segment pseudowire is permitted to connect to *an interface* on the intermediate router P121 because it is an S-PE, not a T-PE at the edge of the network.” *Id.* at ¶108 (emphasis added).

Petitioner’s new Reply arguments about “virtual interfaces” are complete red herrings. “Virtual interfaces” are *never* mentioned in the Petition, the Board’s Institution decision, or Patent Owner’s Response. Nor does the ’775 Patent mention virtual interfaces. Nor does Bocci, Wainner, or Kamite mention virtual interfaces.

B. “First link”

Petitioner agrees “that the ‘first link’ is a connection between the interface of an input router and the interface of an intermediate router.” Reply at 6. The claims

require the first link to be “shared” by the first and second pseudo-wires, meaning two pseudo-wires must connect to the same interface of the input router and the same interface of the intermediate router. Bocci, Wainner, and Kamite, never disclose more than one pseudo-wire connecting to the same interface of an intermediate router (or the same interface of any router, for that matter). *See, e.g.*, Response at 40, 46, 48; EX2006 at ¶¶101, 118.

C. “Pseudowire”

Petitioner argues that Patent Owner “*incorrectly* states that ‘[t]he person skilled in the art has always considered a pseudo-wire as a point-to-point link set up between an input router and an output router.’” Reply at 6 (emphasis added). This is not an “incorrect” statement, it is a direct quote from the specification of the ’775 Patent. EX1001 at 3:9-18 (“The person skilled in the art has always considered a pseudo-wire as a *point-to-point* link set up *between an input router and an output router.*”) (emphasis added). Bocci confirms this when it teaches a “Multi-Segment Pseudo Wire (MS-PW)” behaves as “a *single point-to-point PW*” that “by definition MUST terminate on a T-PE” (i.e. an input or output router). Response at 28-32; EX1031 at 6. Thus the ’775 Patent and Bocci both confirm that, in the prior art, a POSITA understood multi-segment pseudowires could only connect to “an input router and an output router” and did not connect to intermediate routers.

The fact that Petitioner needs to argue the teachings of the '775 Patent and Bocci are “incorrect” underscores the tension between Petitioner’s arguments and the actual text of the underlying patent and references. Petitioner’s only support for this argument is that Wainner and Kamite discuss “point-to-multipoint” or “multicast” pseudowires. Reply at 6. But these teachings only show that Wainner and Kamite can connect to multiple **output** routers to multicast data to several recipients. They do not teach or suggest the claimed invention of the '775 Patent, which requires that two pseudowires share the same link by connecting the same interfaces of the input router and the **intermediate** router: “Going against this received wisdom of the person skilled in the art, the inventors of the present application propose, in contrast, to **share the link** set up **between the input router and the intermediate router.**” EX1001 at 3:9-18 (emphasis added).

The fact that Petitioner is forced to argue that the words of the '775 Patent specification are “incorrect” also underscores the weakness of Petitioner’s interpretation of the claim language. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (“the specification is ‘the single best guide to the meaning of a disputed term’”). An interpretation of the claims that renders the specification “incorrect” cannot be right.

Petitioner is also forced to conflate distinct claim terms “link” and “pseudo-wire.” Petitioner argues that “pseudo-wires and links are not as distinct as PO

suggests” and “a pseudo-wire is comparable to a link.” Reply at 6-7. This argument is again at odds with basic principles of claim interpretation. *Apple Inc. v. Omni MedSci, Inc.*, No. 2023-1034, 2024 U.S. App. LEXIS 15066, at *9 (Fed. Cir. June 21, 2024) (“Well-settled claim construction principles govern this dispute. **‘Different claim terms are presumed to have different meanings.’**”); *Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004) (“the use of both terms in close proximity in the same claim gives rise to an inference that a different meaning should be assigned to each”); EX2006 at ¶42. Petitioner does not even allege that this presumption has been overcome. Petitioner conflates “link” and “pseudo-wire” in an attempt to disregard the claims’ requirements that two pseudo-wires must share one link.

Petitioner cites ’775 specification passages that state “[t]he first and second links constitute a first pseudo-wire pw1” and the second ‘pseudo-wire pw2 consists of the first link L1 and a second link L3.’” Reply at 7. It is undisputed that pseudowires can comprise one or more links; the claims themselves say this, e.g. “a first pseudo-wire comprising a first link ... and a second link.” EX1001 at 12:16-19. But this does not mean that pseudowires and links are the same thing. A bicycle comprises wheels, but this does not imply the terms “bicycle” and “wheel” have the same meaning. The fact that the ’775 Patent consistently uses different words for

these concepts and consistently describes them differently shows these terms have different meanings. *See, e.g.*, Response at 18-20.

D. “Said first link being shared by the first and second pseudo-wires”

Petitioner begins by arguing that Patent Owner “is unable to offer a simple definition of what “said first link being shared by the first and second pseudo-wires” means under PO’s understanding of the ’775 patent.” Reply at 7. That is incorrect. Dr. Mitzenmacher explained it simply: “the first and second pseudowires connect to the same interface of the input router and the same interface of the intermediate router.” EX2006 at ¶78; Response at 37. This is what the plain language of the claims and the agreed construction of “link” require.

Petitioner next argues that PO has incorrectly depicted what it means to share a link, because “[a]lthough the two pseudo-wires pass through the same physical connection between the input router and the intermediate router—the white box labelled ‘L1 (IF1 to IF2)’—they use separate virtual connections—the orange and blue lines within L1.” Reply at 9. For support, Petitioner exclusively cites its supplemental expert declaration in which its expert says “the two pseudo-wires ... *appear* to use separate virtual connections—the orange and blue lines within L1.” EX1042 at ¶12 (emphasis added). Petitioner’s expert cites nothing in support of this statement and provides no further explanation. It seems Dr. Bhattacharjee concluded that PW1 and PW2 “appear” to use different virtual connections based solely on the

presence of different colored lines. Dr. Mitzenmacher never said that PW1 and PW2 use different virtual connections or virtual interfaces, and instead he explained that “the first and second pseudowires connect to the *same interface* of the input router and the *same interface* of the intermediate router.” EX2006 at ¶78 (emphasis added); Response at 37.

As noted above, Petitioner’s arguments about “virtual interfaces” are a total red herring. Prior to petitioner’s Reply, no one had mentioned “virtual interfaces” in this proceeding and they are not mentioned in the ’775 Patent, Bocci, Wainner, or Kamite.

Next, Petitioner and Dr. Bhattacharjee argue that “Dr. Mitzenmacher’s demonstrative does not optimally use resources between the input router and intermediate router” because it must “must needlessly transmit duplicate information from the input router to the intermediate router in case of a fault affecting the first output router.” EX2006 at ¶78; Reply at 11. Neither Petitioner nor its expert cites any support for the idea that the “one link, two pseudowire” configuration would need to transmit any duplicate information. *Id.* There is no need to duplicate packets, given that the first and second psuedowires share the same link. *See* ’775 Patent at 3:1-4 (“This optimizes the use of network resources, for example bandwidth, between the input router and the intermediate router by setting up between them a single link common to the two pseudo-wires.”). Dr. Bhattacharjee does not explain

why such duplication would be needed. Moreover, Petitioner’s arguments are based on specification disclosures about the “back-up pseudo-wire” embodiment, which is not recited in either of challenged claims 1 or 6. Instead, “back-up pseudo-wire” limitations only appear in dependent claims, which Petitioner does not challenge in this IPR.

Next, Petitioner argues that in “PO’s configuration, each pseudo-wire is still an independent, unrelated connection between the input router and different output routers—they are impermeable tubes, as described above.” Reply at 12-13. This is simply not correct. Neither Patent Owner nor Dr. Mitzenmacher have ever characterized the first and second pseudowires in the “one link, two pseudowires” configuration as being “unrelated” or “impermeable tubes.” Nor does the ’775 Patent or the alleged prior art teach this. Dr. Bhattacharjee cites no support for his supplemental opinions on this subject. EX2006 at ¶18.

Next, Petitioner claims “PO’s argument contradicts what PO previously represented to the Board about the ’775 patent” because “PO distinguished a prior art reference that disclosed ‘two links that use different interfaces but share the same physical path.’” Reply at 14. This is entirely consistent with what Patent Owner is arguing here. As Dr. Mitzenmacher explained, the first and second pseudowires in the “one link, two pseudowires” configuration must “connect to the *same interface* of the input router and the *same interface* of the intermediate router.” EX2006 at

¶78 (emphasis added); Response at 37. The “one link, two pseudowires” configuration shares the *same* interfaces on the input router and the intermediate router. *Id.* Merely sharing the same “path” is not sufficient.

Next, Petitioner argues that the “the combination of Kamite’s Figure 3 and Bocci” disclose the claimed shared link, but this is not correct. Reply at 14. “Because there is no teaching in Kamite that the three highlighted pseudowire segments in Figure 3 can share the same interfaces, there is no teaching that they can share the same link.” EX2006 at ¶114; Response at 48. Rather, Kamite describes the three pseudowire segments as having separate interface parameters. EX2006 at ¶117 (“all three highlighted pseudowire segments shown in Figure 3 use separate links”); Response at 47-48. There is no teaching in Kamite (or any of Petitioner’s references) about sharing the same interface.

Next, Petitioner argues that “Figure 3 intentionally uses curly braces ... to indicate that the pseudo-wires comprise the three links fully, rather than just portions of them as in PO’s demonstrative.” Reply at 16. This fundamentally misunderstands Patent Owner’s position. Dr. Mitzenmacher’s figure does not show the PW1 and PW2 only comprising “portions” of the relevant links. Rather, PW1 and PW2 both “fully” comprise their respective links, and both “fully” comprise the first link in that they both connect to the same interface of the input router and the same interface of the intermediate router. EX2006 at ¶78. It is Petitioner and Dr. Bhattacharjee who

have failed to point to any pseudowires in the alleged prior art that “comprise the three links fully” in the manner depicted in Figure 3, in which two pseudowires connect to the same interface of the input router and the same interface of the intermediate router because both share the same link L1.

Next, Petitioner argues that the ’775 Patent invention would be “more accurately depicted” by a diagram in which “the blue and orange connections from PO’s figure combine to form a purple connection between the input router and the intermediate router, indicating that *this connection is shared both physically and virtually* between the two pseudo-wires.” Reply at 16-17 (emphasis added). Petitioner seems to be arguing that the claimed “first link” must be shared both physically and virtually by two pseudowires. To the extent the claims require this, Petitioner cannot meet its burden because it has not shown that Bocci, Wainner, or Kamite disclose either a shared virtual *or* physical link, let alone that they disclose both. *See, e.g.*, EX2006 at ¶40, 106. For example, none of petitioner’s references teach two pseudowires that share the same physical interface, virtual interface, or any kind of interface on the intermediate router.

Petitioner argues that the “one link, one pseudo-wire” configuration is functionally identical to what the ’775 patent teaches as the invention.” Reply at 18. This is incorrect, and in arguing this Petitioner contradicts its prior argument. The “one link, one pseudo-wire” configuration *does not* include a connection “shared

both physically and virtually between the two pseudo-wires” as Petitioner says is required. Reply at 16-17. Instead, in the “one link, one pseudo-wire” configuration *no links* are shared by two or more pseudowires. *See, e.g.*, EX2006 at ¶56 (“Because link L1 only includes one pseudowire, it cannot be ‘shared by the first and second pseudowires’”); *id.* at ¶58 (“multisegment pseudowires MSPW1-2 and MSPW1-3 can only connect to routers at the edge of the network and cannot connect to any interface of the intermediate router, so they cannot share the claimed ‘first link.’”).

Finally, Petitioner contends that Patent Owner’s understanding of the claims is at odds with its infringement allegations against Cisco and argues that Patent Owner accused the “one link, one pseudowire” configuration of infringing. Reply at 18-19. This is wrong. Instead, Patent Owner’s complaint against Cisco showed that in Cisco’s accused system, two pseudowires share the same link because they connect to the same interface on the input router and the same interface on the intermediate router. The complaint even identifies the specific shared interfaces by their IP addresses: the shared interface on the PE1 router (the input router) is 209.165.200.225 and the shared interface on the P router (the intermediate router) is 209.165.200.226. EX1033 at ¶¶133-135. The complaint also shows that the connection (denoted “209.165.201.2”) between these interfaces is shared by the first and second pseudowires. *Id.* ¶135.

Thus, Patent Owner’s complaint showed precisely what Petitioner has failed to show: *two* pseudowires that connect to the *same* interface of the input router and the *same* interface of the intermediate router. This is the “one link, two pseudowires” configuration required by the claims. EX2006 at ¶74 (“In order for PW1 and PW2 to share the same link they must necessarily both connect to the same interface on the intermediate router.”). Patent Owner’s complaint identified the specific IP address of the shared interface of the intermediate router (“209.165.200.226”), but Petitioner has failed to identify *any* interface of any intermediate router in Bocci, Wainner, or Kamite that is shared by two pseudowires, because none of these references disclose this.

III. Argument

A. Ground 1: Wainner and Bocci

Petitioner states “Although Wainner refers to each segment as a pseudo-wire, Wainner further discloses that the sequential pseudo-wire segments can be combined to form larger pseudo-wires that span the network.” Reply at 19. This argument highlights two major problems with Wainner.

First, each link in Wainner includes at most *one* pseudowire segment that connects to the interfaces of that link. It is therefore impossible for any of the links in Wainner to be shared by two pseudowires, because each link includes at most one pseudowire. EX2006 at ¶¶84-85 (“Each connection between routers in Wainner

consists of at most one pseudowire, and there are no links shared by more than one pseudowire.”).

Second, when those pseudowire segments are allegedly “combined to form larger pseudo-wires,” those multi-segment pseudowires “span the network,” *i.e.* they only connect to interfaces on the input router and the output routers at the network edge, not interfaces on any intermediate router. As previously noted, Wainner itself never mentions multi-segment pseudowires. *See* Preliminary Response at 10. Instead, Petitioner must import the concept of multi-segment pseudowires from Bocci. *See* Reply at 19. As discussed in detail in the Response and in Dr. Mitzenmacher’s declaration, Bocci’s multi-segment pseudowires “MUST terminate on a T-PE” (*i.e.* an input or output router) and cannot connect to any interface of an intermediate router. Response at 27-32; Mitzenmacher Dec. at ¶¶57-70. The ’775 Patent confirms this understanding of what the prior art taught: “The person skilled in the art has always considered a pseudo-wire as a ***point-to-point*** link set up ***between an input router and an output router.***” EX1001 at 3:9-18.

Petitioner again argues against the teachings of its own references, stating that it would be “non-sensical” for multi-segment pseudowires to only connect to the input and output routers (as described in Bocci) and asks rhetorical questions like “[i]f multi-segment pseudo-wires do not connect to an interface of the intermediate router, how do they send data through that router?” Reply at 20. Petitioner cannot

carry its burden by asking rhetorical questions. Petitioner would need to actually show some disclosure in Wainner or Bocci of two pseudowires connecting to the same interface of the intermediate router, which petitioner cannot and does not do. However, the answer to petitioner's rhetorical question is simple. A single pseudowire (PW22) in Wainner's Figure 2 connects the input router PE1 and the intermediate router PE5. All packets traversing the link between PE1 and PE5 are carried by one pseudowire PW22 along that link. The router PE5 only "sees" incoming packets from PW22—and not from any multi-segment pseudowires—because no multi-segment pseudowires are permitted to connect to any interface of PE5. In contrast, the '775 Patent teaches an invention in which the "intermediate router S-PE 'sees' two pseudowires connected to its interface ifl and can distinguish between these two pseudowires based on the 'label added to the packet' that identifies which pseudowire the packet belongs to." Response at 36; Mitzenmacher Dec. ¶77.

Petitioner also argues that Bocci "says nothing about whether a multi-segment pseudo-wire connects to the interface of an intermediate router." This is a striking admission that Bocci *does not* disclose any multi-segment pseudo-wire connecting to any interface of an intermediate router. Nor does Wainner, because Wainner does not mention multi-segment pseudowires at all. However, Bocci is not merely silent on this issue. Instead, Bocci explicitly teaches that it only allows pseudowire

segments, and not multi-segment pseudowires, to connect to the intermediate router.

See Response at 29-30.

Petitioner argues that “the multi-segment pseudo-wire depicted in Figure 1 [of the ’775 Patent] and described in Bocci connects to an interface of the intermediate router.” Reply at 22. Again, Petitioner argues against the explicit teaching of the ’775 Patent, which says that Figure 1 depicts “a pseudo-wire set up as in the prior art between an *input router and an output router* of a packet switched network” and further states that a “person skilled in the art has always considered a pseudo-wire as a point-to-point link set up *between an input router and an output router*.” ’775 Patent at 3:9-11; 5:40-42. The ’775 Patent does not say that the prior art pseudo-wire in Figure 1 connects any interface of the intermediate router.

Petitioner also argues that Wainner says it “deviates from previous L2VPN concepts that define a point-to-point PW.” Reply at 22. This “deviation” has nothing to do with sharing links. Instead, Wainner says it provides a way to “use a PW as a means of transporting *multicast* data.” EX1030 at ¶20. In other words, Wainner purportedly allows data to be multicast to multiple output routers rather than just a single output router. This has nothing to do with sharing a first link between an input router and an intermediate router.

Petitioner also argues that Wainner’s intermediate router “‘sees’ *an* incoming connection and recognizes that the incoming connection branches out to multiple

output routers.” Reply at 23 (emphasis added). This is another striking admission that there is only *one* pseudowire across the link between the input router and the intermediate router in Wainner. That Wainner “recognizes that the incoming connection branches out to multiple output routers” is irrelevant, because the claims require the connection between the input router and the intermediate router to be shared by two pseudowires. In Wainner there is at most one pseudowire traversing that link, as Petitioner concedes.

B. Ground 2: Kamite and Bocci

Petitioner argues that Patent Owner is in a “double bind” and “either Kamite’s Figure 3 invalidates the claims or Figure 10 does.” Reply at 24. Neither Figure 3 nor Figure 10 satisfy the “said first link being shared” limitation. As explained in the Response, Figure 10 corresponds to the “one link, one pseudowire” prior art configuration and it does not include any shared link: “the link between PE11₁ and P12₁ is not shared because it includes only one pseudowire.” Response at 45. On the other hand, in Figure 3, “[e]ach of the three highlighted pseudowires originates and terminates on a different interface, resulting in a ‘three links, three pseudowires’ configuration.” Response at 48.

Petitioner argues that “there is one physical connection between the input router PE11₁ and intermediate router P12₁, highlighted in blue, and three pseudowires passing through it, highlighted in yellow.” Reply at 26-27. Petitioner cites no

evidence that the line it has highlighted in blue is a “link” or that any links are shared by the three purported pseudowires. Kamite does not label Petitioner’s blue-highlighted line in Figure 3 and Kamite does not describe what that line represents. Kamite certainly does not characterize the blue line as connecting to any interfaces. Thus, petitioner has not and cannot show that the blue line is a “link.” Kamite also does not teach that the purported pseudowires in yellow “pass through” the blue line as Petitioner asserts without evidence.

Rather, the blue line in Kamite appears to represent a connection *path* (not a link) that is traversed by multiple pseudowires each using separate links. This understanding is supported by several statements in Kamite. *First*, Kamite states that Figure 3 uses “conventional pseudo wire technology” in which “there are three instances of traffic between PE111 and P121.” EX1041 at 6; Response at 47. *Second*, Kamite teaches that each pseudowire is assigned its own “Interface Parameter,” and Kamite does not teach that pseudowires can share the same interfaces or the same Interface Parameters. EX1041 at 8. Kamite contains no disclosure of sharing any interfaces.

Petitioner argues “that statement does not suggest that Kamite assigns different interface parameters to each pseudo-wire.” Reply at 27. This argument turns the burden of proof on its head. Petitioner must show some disclosure in Kamite that two or more pseudowires can share the same interfaces on the input

router and the intermediate router, but no such disclosure exists. Moreover, Kamite emphasizes that it uses “conventional pseudo wire technology” in which “there are three instances of traffic between PE111 and P121.” EX1041 at 6. A POSITA reading this statement would have understood a “conventional pseudowire” to be an “unshared link” (EX1010 at 3) and therefore would have understood that each pseudowire must be assigned a different interface parameter. Response at 47-48.

Petitioner also argues that “even if Kamite assigns different interface parameters to each pseudo-wire, the figure above indicates that these would be different virtual interface parameters, which are distinct from the physical interfaces.” Reply at 27. Petitioner has no support in Kamite for this argument. This is another red herring because Kamite never mentions “virtual” or “physical” interfaces at all, nor does it teach that any such interfaces can be shared.

Petitioner next characterizes Kamite Figure 10 as similar to Wainner. Reply at 28. This is correct in the sense that Wainner and Kamite Figure 10 both correspond to the “one link, one pseudowire” configuration. Like Wainner, in Kamite Figure 10 each link includes at most one pseudowire. EX2006 at ¶¶84-85 (“Each connection between routers in Wainner consists of at most one pseudowire, and there are no links shared by more than one pseudowire.”); *id.* at ¶106 (In Kamite Fig. 10 “the link between PE11₁ and P12₁ is not shared because it includes only one pseudowire”).

Next Petitioner argues “[t]his is the same configuration that PO has previously accused of infringing the ’775 patent.” Reply at 28. As explained above, this is not true. The accused system in the Cisco lawsuit included two pseudowires that shared the same link between the input router and the intermediate router, and the complaint explicitly showed how those two pseudowires connected to the same interfaces on the input router and the intermediate router. This is unlike Kamite Figure 10 in which the link between PE11₁ and P12₁ is not shared because it includes only one pseudowire.

Petitioner argues that the single pseudowire between PE11₁ and P12₁ in Figure 10 is actually “a segment of larger pseudo-wires that span the entire network in Figure 10.” Reply at 29. This is essentially the same argument that Petitioner made about multi-segment pseudowires in the context of Wainner, and this argument fails for the same reasons. Bocci teaches that multi-segment pseudowires “MUST terminate on a T-PE” (*i.e.* an input or output router) and cannot connect to any interface of an intermediate router. Response at 27-32; Mitzenmacher Dec. at ¶¶57-70. Therefore, Petitioner’s purported multi-segment pseudowires cannot share a “connection between an interface of an input router PE11₁ and an interface of an intermediate router P12₁.” Response at 48-49.

Petitioner again claims that Patent Owner is in a “double bind” because “either the ’775 patent requires separate pseudo-wires passing through a single physical

connection, as in Kamite's Figure 3, or it requires a single pseudo-wire connection that is shared between larger pseudo-wires that span the network, as in Kamite's Figure 10." Reply at 29. The '775 Patent's claims require two pseudowires to share a "link" (it is unclear what Petitioner means by "physical connection"), and Kamite Figure 3 does not disclose any shared links or shared interfaces, so it does not meet this claim limitation. Similarly, Kamite Figure 10 does not meet this claim limitation because the relevant link only includes "a single pseudo-wire connection" as Petitioner concedes.

Petitioner next repeats its incorrect argument that '775 Patent Figure 1 depicts a multi-segment pseudowire that connects to an interface of an intermediate router. Reply at 29-30. As explained above in the context of Ground 1, Figure 1 does not depict this, and the '775 Patent explicitly teaches that prior art multi-segment pseudowires did not connect to interfaces of intermediate routers.

IV. Conclusion

Monarch respectfully requests that the Board affirm the validity of the claims if the '775 Patent for the reasons stated herein.

Dated: March 11, 2025 Respectfully submitted,

By: /R. Allan Bullwinkel /
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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 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 4,912 words.

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