

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC. AND JUNIPER NETWORKS, INC.,¹
Petitioners,

v.

ORCKIT CORPORATION,
Patent Owner.

Case IPR2023-00401
U.S. Patent No. 7,545,740

PATENT OWNER'S SUR-REPLY

¹ Juniper Networks, Inc. filed a motion for joinder and a petition in IPR2024-00026, which were granted. Accordingly, Juniper Networks, Inc. has been joined as a petitioner in this proceeding.

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I. INTRODUCTION

The challenged claims require using a first group of physical links to couple one or more network interface modules to a network node, coupling each module to a communication network using a second group of physical links arranged in parallel, and selecting a link from the first and second group with a single computation.

The prior art fails to render the challenged claims obvious. For example, Bruckman discloses using a single trace to couple each of its concentrators to the network, such that none of the concentrators are coupled by a second group of physical links arranged in parallel. Further, selecting a first link in Bruckman and/or Basso leaves *no choice* as to a second link, thus precluding the second claimed selection, let alone with a single computation.

To overcome the dispositive defects in Petitioner's grounds, the Reply asserts that: (i) parallel links need not share endpoints, (ii) the claims allow for the first link to correspond to one specific second link (and that it is possible to meet the second claimed selecting step by determining a second link from only one available option), and (iii) the prior art uses a "single computation" for two selections, notwithstanding that it indisputably determines the second link by selecting a first link. Petitioner is wrong.

First, both experts testified that traces—like those in Bruckman—connecting different internal components are not “in parallel.” Second, the patent disavows prior art with first links “fixed” to a specific second link, and *all* embodiments show first links corresponding to a group of second links. Third, as Petitioner admits, the prior art determines a second link by selecting a first link, thus obviating a second selection. Crediting Petitioner’s assertion that the prior art performs the obviated second selection with a “single computation” would improperly render the “single computation” superfluous.

Accordingly, and as explained below, the Board should find the claims patentable.

II. CLAIM CONSTRUCTION

A. **“Selecting, in a single computation ... a first physical link out of the first group and a second physical link out of the second group”**

Petitioner asserts that PO has improperly “read[] a limitation from the written description into the claims.” Reply, 9 (citing *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)). But the *SciMed* court rejected Petitioner’s argument as an “[in]accurate characterization” of a district court decision and held that “claims must be read in view of the specification, of which they are a part.” *Id.* See also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005).

Consistent with *SciMed*, the structural limitation “wherein the first physical link is not fixedly assigned to the second physical link” is required by the claims read in the context of the patent. As Petitioner admits, the claims require selecting two links. Reply, 11. Selecting the first link must not also determine the second because, as the specification explains:

- “[u]nlike some known network element configurations, ... each user port is [not] fixedly assigned to a specific backplane trace” (EX1001 [’740 Patent], 1:66-24); and
- “there is no pre-assigned relationship or connection between any given user port 24 and a specific backplane trace 56, as in some conventional network elements.” *Id.*, 5:13-21.

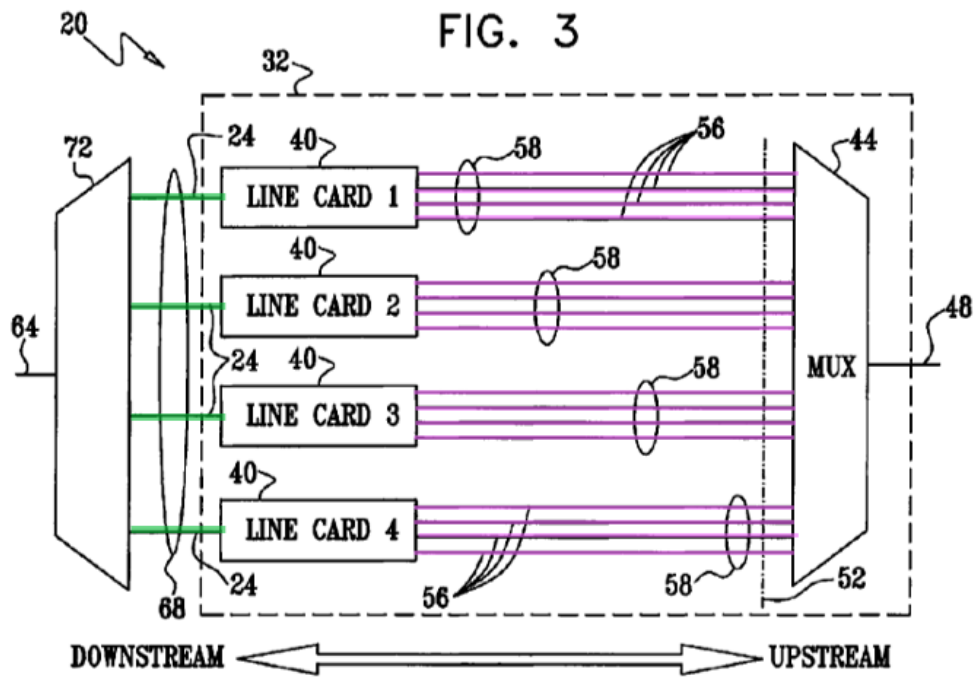
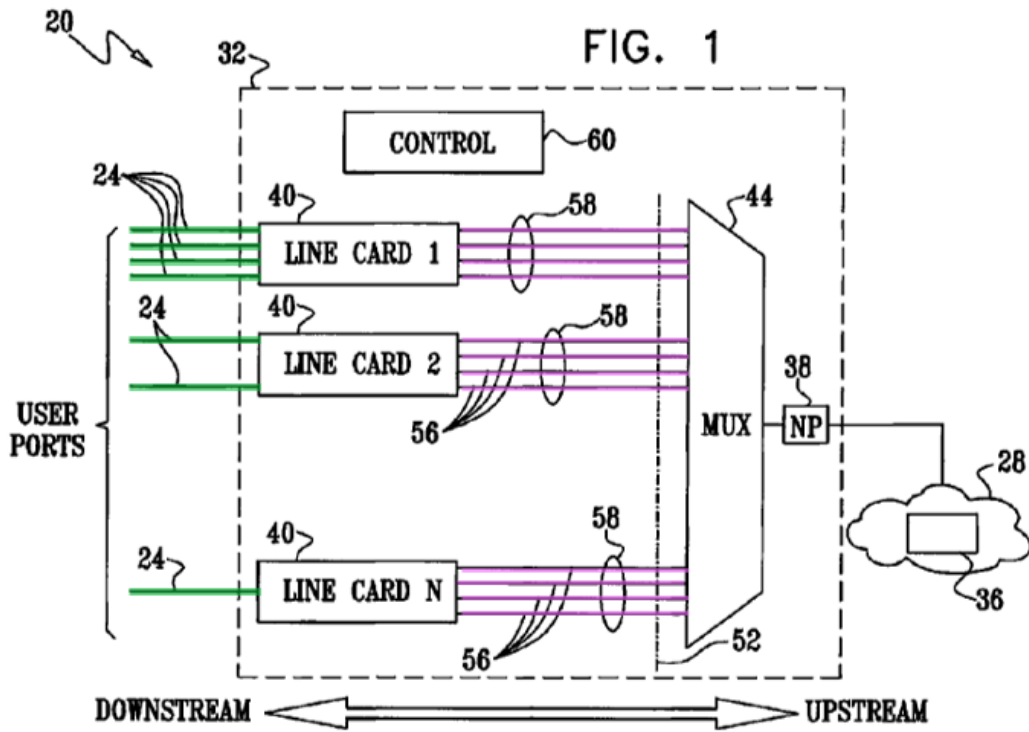
POR, 38-39.

Petitioner incorrectly disputes that the specification disavows prior art in which the first link is “fixedly assigned” to the second link. Reply, 9. Disavowal “need not be explicit” and can be effected, for example, “when the specification distinguishes or disparages prior art based on the absence of [a] feature.” *Poly-America, L.P. v. API Industries, Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016) (statement that “extended short seals” made “secur[ing] over trash receptable lips” easier disavowed prior art without feature). The ’740 Patent disparages as

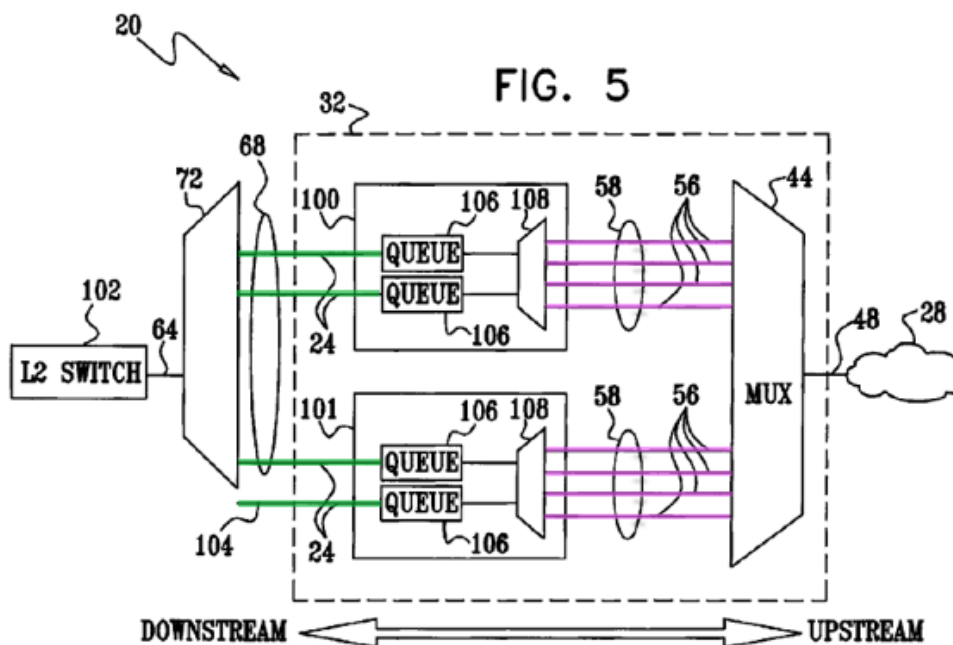
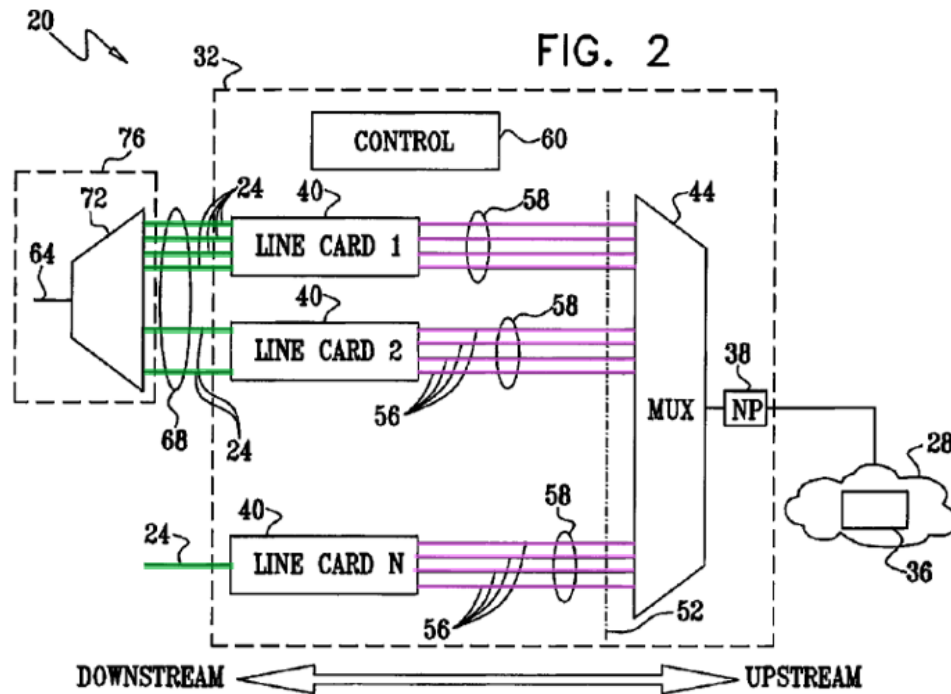
“conventional” prior art elements in which each port is “fixedly assigned” to a specific trace and touts the claimed devices for *lacking* a “pre-assigned relationship between any given user port 24 and a specific backplane trace 56.” *Supra*. The patent thus clearly disavows the prior art based on this feature.

Petitioner incorrectly contends that Figs. 1 and 3 show configurations “where in the downstream direction multiple links are indeed ‘fixedly assigned’ to one link.” Reply, 10-11. As shown below, in both Figs. 1 and 3, each **port 24** corresponds to several **traces 56**, such that no port “is fixedly assigned” to a specific trace and selecting a port does not determine the corresponding trace:²

² Petitioner argues that some backplane traces correspond to a single port, for example, in line cards “having only one user port.” Reply, 10. Petitioner misreads the patent, however, since the patent nowhere requires that each *trace* must correspond to *several ports*; only that each *port must not correspond to a specific trace* (but rather to several traces). *See, e.g.*, EX1001, 1:66-2:4, 5:13-21.



Likewise, the remaining embodiments depict each port 24 corresponding to several traces 56 via line cards 40 (in Fig. 2) and 100-101 (in Fig. 5):



Thus, consistent with PO's construction and contrary to Petitioner's assertions, every disclosed embodiment features a "first physical link [that] is not fixedly assigned to the second physical link."

Petitioner incorrectly asserts that the two link selections are "interrelated ... because they occur in a single computation." Reply, 9-10. The patent explains that each port is not fixed to a specific trace, thus selecting the trace creates complexity that the "single computation" mitigates. EX2024, ¶¶ 38, 72-75; POR, 28-30. Unlike the patent, in the prior art, because each port is fixed to a specific trace such that selecting the port also determines the trace, there is no complexity to mitigate and no need for a single computation. EX2024, ¶104; POR, 53. The "single computation" thus further establishes that ports are not fixedly assigned to a specific trace, as PO proposes. Indeed, construing the "selecting" limitation to exclude prior art in which the first link is assigned to a specific trace is required to avoid improperly rendering the "single computation" superfluous (as the prior art determines—rather than selects—the second link thus obviating the need for a single computation). *Wasica Fin. GMBH v. Cont'l Auto. Sys., Inc.*, 853 F.3d at 1288 n.10 (Fed. Cir. 2017) ("It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.").

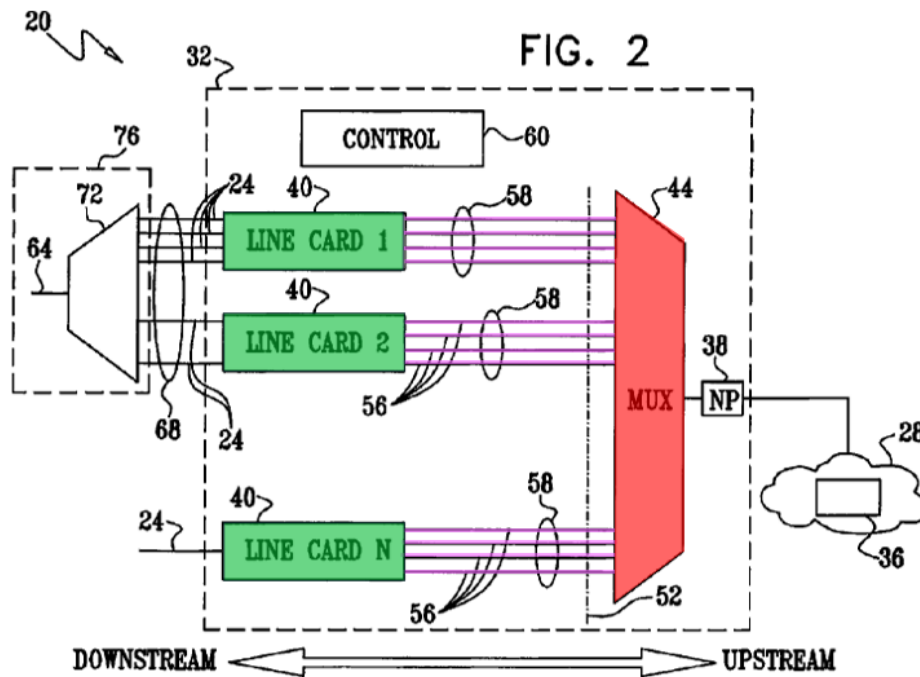
Petitioner argues that statistical multiplexing is not required by the claims but admits that “the claimed invention is beneficial in ... implementations” that utilize it. Reply, 13. Statistical multiplexing is enabled by the load balancing recited in dependent claims 7 and 22. EX1001 [’740 Patent], 1:66-2:4 (“the load balancing ... of the present invention enables statistical multiplexing ... in which there is no direct relationship or connection between user ports and backplane traces”). Fixing the ports to specific traces—a configuration not disclosed but disparaged by the patent—as Petitioner proposes, would thwart the only type of load balancing (i.e., with statistical multiplexing) disclosed in the patent, which a POSITA would understand is performed by the structures recited in the independent claims. The disclosed load balancing and multiplexing thus provide additional support for PO’s construction.

Accordingly, because the claims and every disclosed embodiment agree, and the patent disavows prior art inconsistent with PO’s construction, the Board should adopt PO’s construction.

B. “Arranged in parallel”

Contrary to Petitioner’s assertion that PO advances an implicit construction (Reply, 14), the requirement that parallel links terminate at the same relevant endpoints is how a POSITA would understand “arranged in parallel” consistent with the claims and specification. EX2024, ¶¶80-96.

A POSITA would understand that the relevant endpoints for *internal backplane traces 56* are the *internal* components at which those terminate: *line cards 40* and *MUX 44*:



See, e.g., EX2024, ¶¶86-88.

Petitioner incorrectly asserts that links in LAG 68 of Fig. 2 terminating at different line cards are described as “parallel.” Reply, 14. First, LAG 68 comprises two sets of ports, each corresponding to one of line cards 1 and 2. Consistent with a POSITA’s understanding of “parallel,” the ports in each set terminate at the same endpoints.

Second, nothing in the patent requires all LAG 68 links to have the same endpoints. The patent offers a general background description of link aggregation

but does not state that all links in LAG 68 are “in parallel.” EX1001, 1:10-14. Further, Dr. Houh testified that this description, an identical version of which is found in Bruckman, is not a definition but only an example:

Q. You state here: As explained by the prior art, link aggregation is a technique by which a group of parallel physical links between two end points in a data network can be joined into a single logical link. ...

...

Q. Do you consider this statement from Bruckman to be a definition of link aggregation?

A. I think it's just a statement. I'm not saying it's a definition here. It's a description of something that Bruckman is saying that link aggregation can be, and it's simply an example given in Bruckman[.]

EX2026, 66:25-68:7. Thus, LAG 68 includes links with different physical endpoints consistent with the patent's description of link aggregation.

Third, LAG 68 is “referred to as an external” LAG (EX1001, 6:21-26) that connects network element 32 to an *external* node. A POSITA looking at external LAG 68 would recognize that the relevant endpoints of its ports are network element

32 and “user equipment 76, separate and distinct from network element 32.”³ EX1001, 6:27-38. Thus, the ports of external LAG 68 are in parallel because they have the same external endpoints. In contrast, as both experts testified, *internal* traces 56 are in parallel because they terminate at the same *internal* endpoints (the MUX and line cards of network element 32) but would not be in parallel if their internal endpoints were different. EX2024, ¶86-88; EX2026, 60:5-63:6.

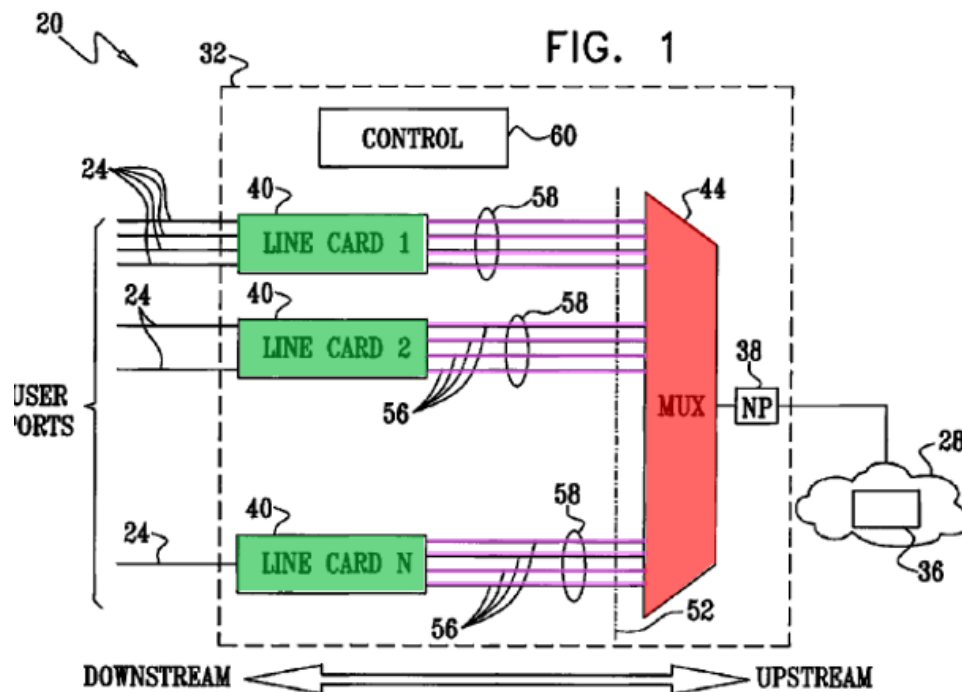
Accordingly, the Board should reject Petitioner’s assertion that a POSITA would not understand that physical links “arranged in parallel” do not have the same relevant endpoints.

The Board should also reject Petitioner’s proposed construction “lines that transfer data between a user node and a communication network.” First, the construction is improperly raised in reply. 37 C.F.R. § 42.104(b)(3); *see also SAS*

³ Dr. Houh confirmed that the relevant endpoints of a physical link are informed by the “level” at which a POSITA would examine the device. EX2026, 110:12-17 (“Q. [A]t the level of just looking at the line cards, they are not parallel. Correct? A. [I] think that's an example where ... the end points are... different. But there are many levels where you can look at it and you realize there are different end points.”).

Institute Inc. v. Iancu, 138 S.Ct. 1348, 1351 (2018) (“the statute confirms [that the] petition [] should guide the life of the litigation.”).

Second, Petitioner’s argument that **“each UIM is connected to the communication network using two or more physical links arranged in parallel”** (Reply, 15) actually supports PO’s construction, since these **links 56** share the same endpoints, *i.e.*, **MUX 44** and **UIMs 40**, as shown in Fig. 1 and every other embodiment:



Third, Petitioner’s construction improperly (i) reads traces 56 coupled to the same UIM out of claimed embodiments when they are used to serve different users (*e.g.*, via different user ports 24 coupled to the same UIM), or when only one trace is used (*e.g.*, to transmit a single frame); and (ii) renders the claims indefinite, since

the same traces may or may not be “arranged in parallel” depending on how many traces are used or whether those traces serve the same or different users. *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334–35 n.6 (Fed. Cir. 2003) (construction rendering claims indefinite contradicted “canon that courts should attempt to construe claims to preserve their validity.”).

For these reasons, the Board should apply the plain and ordinary meaning of “arranged in parallel” as explained by Mr. Gomez.

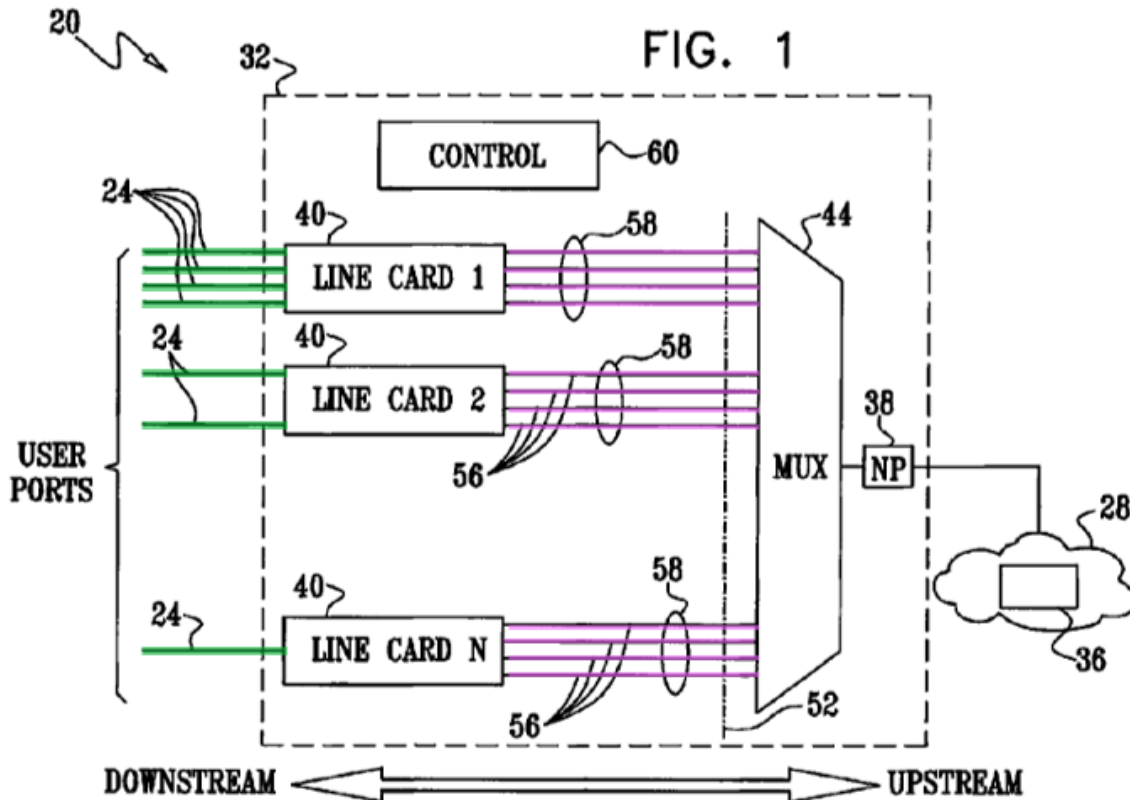
**III. THE PRIOR ART FAILS TO DISCLOSE OR RENDER OBVIOUS
CRITICAL LIMITATIONS OF THE INDEPENDENT CLAIMS
BECAUSE THEY ARE DIRECTED TO FUNDAMENTALLY
DIFFERENT ARCHITECTURES**

The independent claims of the '740 Patent require (i) “coupling each of the one or more interface modules to a communication network using a second group of second physical links arranged in parallel” [1.3]⁴ and (ii) “selecting, in a single computation... a first physical link out of the first group and a second physical link out of the second group” [1.6].⁵

⁴ See claims 1, 4-5, 13, 14-15, 17, 19-20, and 28-30 (reciting limitation with minor variations).

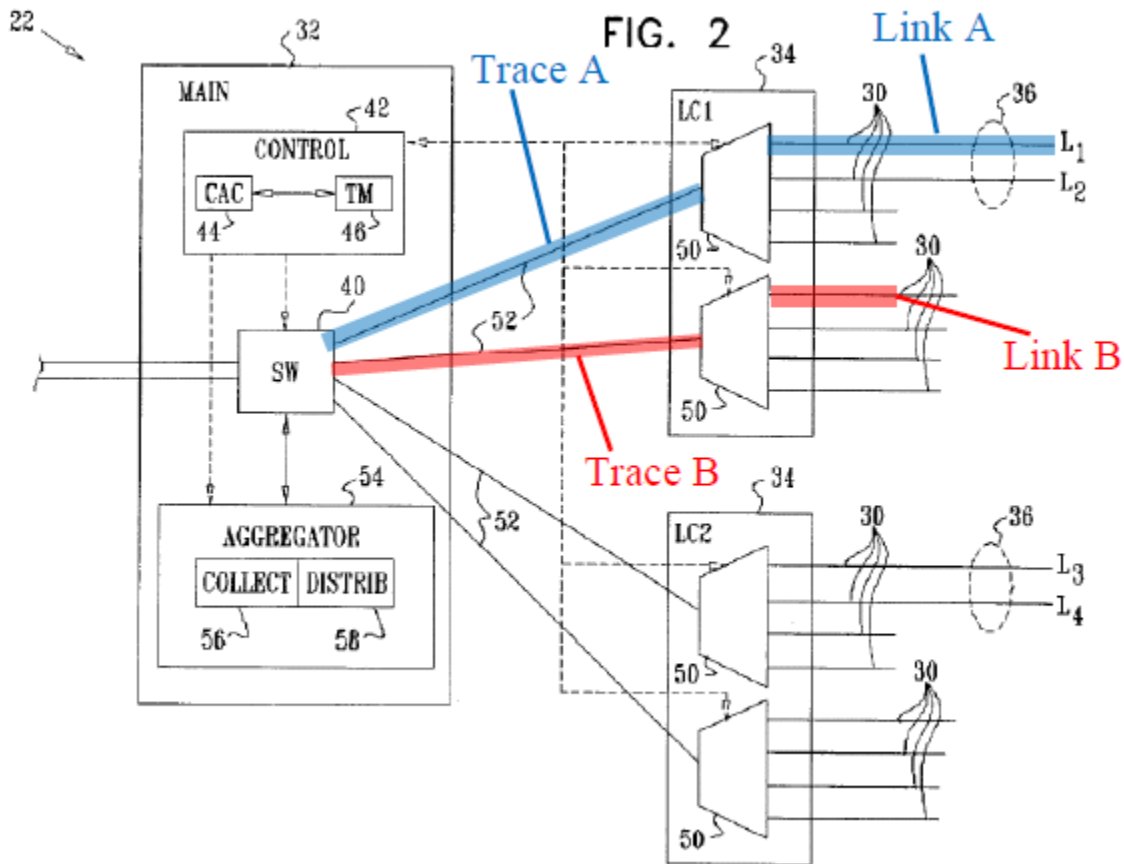
⁵ See claims 1, 4-5, 13, 17, 19-20, and 28 (reciting limitation with minor variations).

As shown, each module 40 is coupled to several links 56 “arranged in parallel;” thus, data sent over first link 24 can follow several paths, depending on which second link 56 is selected:



Selecting the first and second links in a single computation mitigates computational complexity caused by the two selections. Ex2024, ¶104.

In contrast, conventional elements (*e.g.*, Bruckman shown on next page) are less complex because the second links are not in parallel and selecting a first link determines the second:



As discussed below, the prior art fails to render the claims obvious.

A. Bruckman does not teach “coupling each of the one or more interface modules to a communication network using a second group of physical links arranged in parallel”

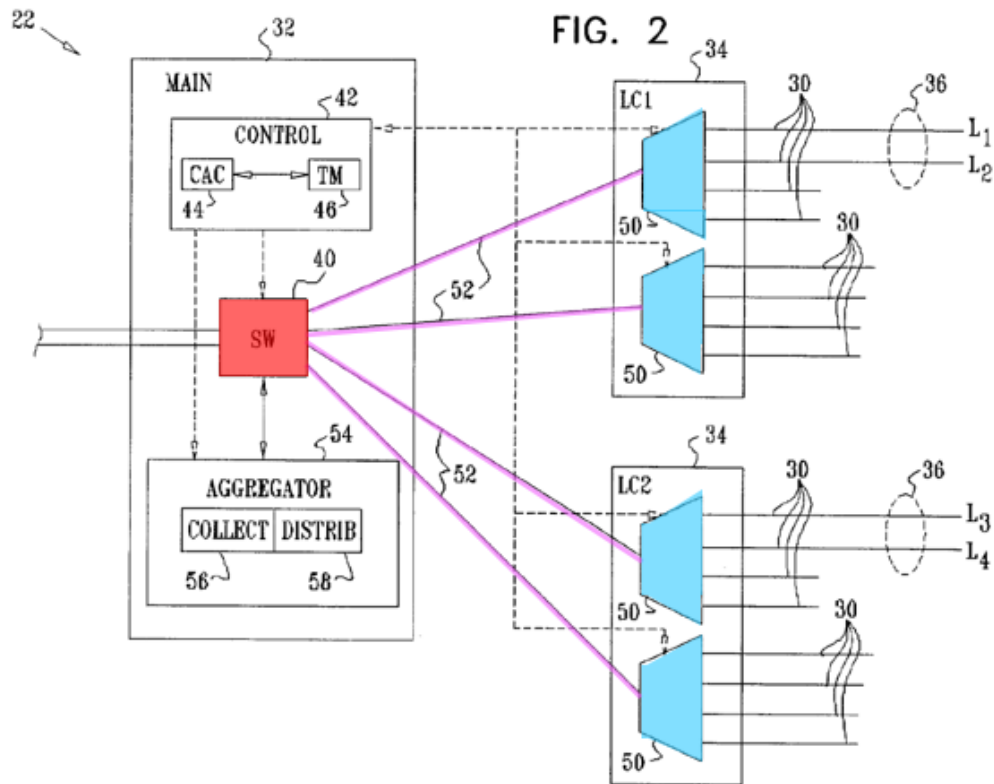
Bruckman does not disclose “coupling each of the one or more interface modules to a communication network using a second group of physical links arranged in parallel” because each of Bruckman’s traces 52 terminates at a different concentrator 50.

A POSITA would understand that physical links “arranged in parallel” terminate at the same relevant endpoints. *Supra*, II.B. For example, as both experts

testified, the embodiments in the '740 patent feature backplane traces that are in parallel because they terminate at the same endpoints. II.B *supra*; EX2024, ¶86-88; EX2026, 60:5-63:6.⁶

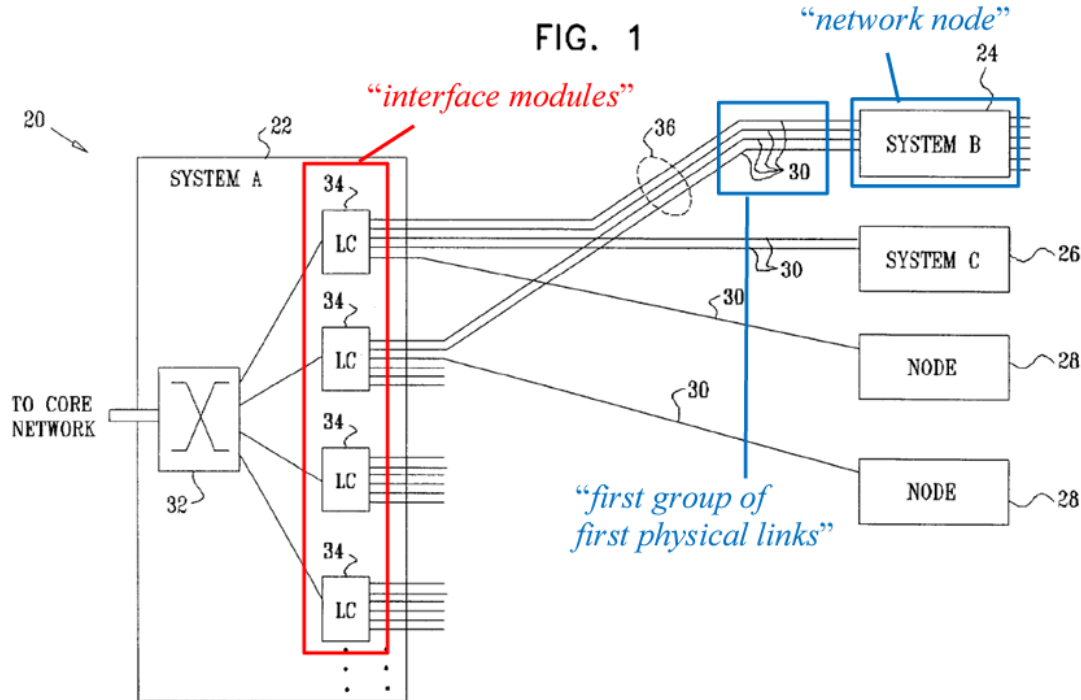
In contrast to *all* embodiments in the '740 patent, each of Bruckman's traces 52 connects the same switching core 40 to a different concentrator 50:

⁶ This can be seen in Fig. 1 (discussed *supra* at 11), Fig. 2, and Fig. 3, in which groups of backplane traces terminate at the same MUX 44 and line cards 40, as well as Fig. 5, which similarly shows backplane traces that terminate at the same MUX 44 and line cards 100-101. EX1001, 3-5.



Indisputably, each trace 52 terminates at a different concentrator 50. A POSITA would thus readily understand that Bruckman's traces 52 are not arranged in parallel, as required by the claims for the group of second links.

Moreover, as also shown in Petitioner's annotated Figure 1, Bruckman uses single traces (shown on the left of the "interface modules") to couple its concentrators to the "core network" and groups of links (shown on the right) to couple the concentrators to "network nodes:"



Pet. 34-35. The plain language of element [1.3] requires “coupling *each of the one or more* interface modules ... using *a second group of second physical links* arranged in parallel.” EX1001, claim 1. Because Bruckman’s traces terminate at different concentrators (*i.e.*, are not “in parallel”), each concentrator is coupled to the network with only a single trace, not a group, as required by the claims. EX2024, ¶¶90-92. Thus, Bruckman fails to teach this limitation.

Petitioner asserts that Bruckman’s traces are arranged in parallel because they can be “part of a link aggregation group,” and link aggregation “is a technique by which a group of parallel physical links between two endpoints in a data network can be joined together into a single logical link.” Reply, 22. Not so.

As Petitioner’s expert testified, Bruckman’s statement is simply an example of link aggregation, not a definition. *Supra* at IIB (discussing EX2026, 66:25-68:7). Accordingly, and as Mr. Gomez also testified, a POSITA would not understand that Bruckman’s traces are “in parallel” from the disclosure that they can be part of a link aggregation group. EX2024, ¶¶92-94. Further, as Dr. Houh testified, a physical link “connects two points.” EX2026, 68:13-25. Each of Bruckman’s traces connects the switching core 40 to a concentrator 50, which are internal components, not network endpoints. EX1005, [0056]. Thus, Bruckman’s generic example of link aggregation as a “technique” applicable to “physical links between two endpoints in a data network” does not apply to Bruckman’s traces, which connect *internal* endpoints.

Petitioner tries to explain away as irrelevant Dr. Houh’s testimony that backplane traces with the same endpoints are arranged in parallel, and backplane traces with *different* endpoints are *not* in parallel. Reply, 25, EX2026, 62:8-63:6. Dr. Houh was asked whether the traces in the ’740 patent would be parallel if they had different “starting and ending points” and answered that traces “going to different places” are *not* “what is thought of as ... parallel” by a POSITA. *Id.*, 62:15-63:6. Dr. Houh’s testimony is relevant to a POSITA’s understanding of “arranged in parallel” and to his invalidity analysis.

Petitioner incorrectly asserts that Bruckman’s traces “are not going to different places” but rather “pass packets between a user node and a core network.” Reply, 25. Just like the traces in the ’740 Patent, Bruckman’s traces can be used to serve different users or the same user (if they are part of a single logical link); but that does not change their *physical* endpoints or their structural arrangement. In contrast to the traces in the ’740 Patent—which are always “in parallel” regardless of how they are used because they have the same internal endpoints—Bruckman’s traces are *never* in parallel because they have *different* endpoints. Construing physical links “arranged in parallel” in a manner that depends upon the use of those links (as Petitioner proposes) would improperly render the claims indefinite, as links would be “in parallel” sometimes—e.g., when they serve the same user—but not others, e.g., when they serve a different user. *Omega*, 334 F.3d at 1334–35 n.6. In any event, Bruckman’s traces never terminate at the same user. Rather, they terminate at different concentrators. As Dr. Houh states, they go to “different places” and are thus not in parallel. EX2026, 62:19-63:2.⁷

⁷ Contrary to Petitioner’s assertions that Dr. Houh clarified his testimony about Bruckman (*see* Reply, 25-26), his testimony confirms that the traces are not in parallel because they have different endpoints. EX2026, 110:12-15 (“Q. But at the

Petitioner also attacks Mr. Gomez’s opinion about a POSITA’s understanding of “arranged in parallel,” asserting it is based on evidence about “electrical circuits” from “outside the context of networking” and “not pertinent to the ’740 patent.” Reply, 26. Again, not so. Mr. Gomez offered opinions about the ’740 patent backplane traces in the context of networking, a field in which he has extensive expertise. EX2024, ¶84 (“In the context of networking, a POSITA would understand...”); EX2025, 1 (detailing Mr. Gomez’s “thirty-five years of experience in the design and development of hardware and software technology used in telecommunications, data communications, *networking* and storage infrastructure.”). Moreover, Petitioner’s expert Dr. Houh opined that “a POSITA would have had a bachelor’s degree in electrical engineering[.]” EX1003, ¶9. A POSITA’s understanding of parallel circuits is indisputably foundational to electrical engineering, *i.e.*, *the discipline that Petitioner used to define the level of ordinary skill*, and therefore the context in which a POSITA would understand the claimed terms.

level of just looking at the line cards, they are not in parallel. Correct? A. I think that’s an example where ... the end points are ... different.”).

Petitioner also asserts that Mr. Gomez’s opinion contradicts the specification’s disclosure about link aggregation and LAG 68. Reply, 27. As also discussed *supra* at IIB, Petitioner’s assertion fails because: (i) the patent’s generic description of link aggregation does not describe LAG 68; (ii) the links in each of the two sets of LAG 68 share the same physical endpoints with the other links in the same set, thus Mr. Gomez’s testimony about LAG 68 is consistent with a POSITA’s understanding of “arranged in parallel” and the patent’s description of link aggregation; (iii) both experts testified that the patent only provides an example of link aggregation, which does not thus limit embodiments of link aggregation (e.g., LAG 68) to parallel links; and (iv) because LAG 68 is an external LAG, a POSITA would understand that its relevant endpoints are the user node and the network element (just like for internal backplane traces the relevant endpoints are internal components). Thus, Mr. Gomez’s opinions and testimony about “arranged in parallel” are perfectly consistent with the patent.

Accordingly, the Board should find that Bruckman does not teach this limitation.

B. Bruckman and Basso do not teach “selecting, in a single computation... a first physical link out of the first group and a second physical link out of the second group”

1. Bruckman does not teach two “selecting” steps

Petitioner asserts that Bruckman discloses selecting links 30 *and* traces 52 because “a packet will pass through one of the traces 52,” which Petitioner reasons must be selected “regardless of whether the selection of link 30 informs that selection[.]” Reply, 16-19. Petitioner is incorrect.⁸

First, selection of a link 30 in Bruckman does not simply “inform” the selection of a trace 52. Petitioner admits that selecting link 30 leaves only one trace and corresponding path available for data to pass, since each link 30 is coupled to exactly one trace 52. Reply, 19. There is thus no selection of a trace 52 because, as

⁸ Petitioner points to its analysis for dependent claim 11 for “further details on how these links are separately selected through two separate sets of bits.” This argument fails for the reasons set below in this section. In addition, Petitioner did not raise this argument with respect to Claim 1. *Apple Inc. v. MPH Technologies OY*, 2022 WL4103286, * (Fed. Cir. 2022) (affirming Board’s decision not to consider with respect to Grounds 1 and 3 arguments raised by Petition only with respect to Ground 2). The Board should thus decline to consider it here with respect to element [1.6].

Dr. Houh admitted, “if there’s one path, you don’t really have a choice[.]” EX2026, 73:12-18; EX2024, ¶¶100-106. Given that selecting a first link indisputably leaves no choice as to the second, finding that Bruckman’s transmission over the only available trace 52 amounts to “selecting” from a group of traces would improperly render the second “selecting” step void and meaningless. *Wasica*, 853 F.3d at 1288 n.10 (“It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.”).

Second, contrary to Bruckman’s architecture, the claims require that each first link selected for data transmission must correspond—via an interface module—to a group of traces that can be selected.⁹ As discussed *supra* in II.A (at 4-6), this is depicted in every embodiment of the ’740 patent (Figs. 1-3 and 5) in which each port 24 (or first link) corresponds to a group of backplane traces 56 (or second links).

⁹ The claims require “coupling each of the one or more interface modules to a communication network using a second group of second physical links.” EX1001, Claim 1. The claims also require “coupling a network node to [the same] interface module using a first group of first physical links.” *Id.* Thus, the claims require that each of the first links corresponds to a group of second links, also connected to the same interface module.

Consistent with these embodiments, the claims require selecting a second link *from a group* that corresponds to the first link that is selected. Bruckman does not allow for such a selecting step because each of its links 30 corresponds, via a concentrator, to single traces 52, not groups of traces (EX1005, Fig. 2), thus leaving no choice as to the trace once the first link is selected. Accordingly, Bruckman's structure does not disclose or render obvious two "selecting" steps, as required by the claims.

Petitioner's assertions about the absence of a "temporal requirement" or that PO has failed to show "how" the two selections must be discrete (Reply, 20) are misplaced. First, PO does not argue for a "temporal requirement." Second, as Mr. Gomez testified, the '740 Patent discloses a hash function that is used for selecting two links with a single computational result. EX2024, ¶¶72-75. Indisputably, the claims require selecting two links, "one from a first group ... and another from a second group" (Reply, 11), used for coupling the same interface module. *Supra*, 24. Thus, the claimed single computational result reflects selections from both groups. In contrast, as discussed *infra*, Bruckman's hash function is a computation used for selecting one link, as there is no choice as to the second link—and thus no second selection to be computed with the same hash function.

Accordingly, Bruckman fails to disclose selecting a second link.

2. Bruckman and Basso do not teach selecting a first and second link “in a single computation”

Petitioner proposes construing selecting two links from two groups “in a single computation” as making those selections with a “single computational result.” Pet. at 19-20. Consistent with this construction, the ’740 patent discloses selecting both links with a hashing function that produces a single result that accounts for the potential data paths available based on the number of ports and corresponding backplane traces. EX1001, 7:25-30; EX2024, ¶¶74-75. This single result reflects that there are several selectable traces for every selectable port. *Id.*

Petitioner asserts that the hashing functions in Bruckman and Basso satisfy this limitation because they also produce a single computational result. Reply, 29. But those hashing functions are used for selecting *one link*, not two, as required by the claims. EX2024, ¶¶105-106, 112. It is thus not enough (and irrelevant) that they use a single result. Indeed, upon closer inspection, a POSITA would readily recognize that the potential paths in both Bruckman and Basso are equal to the number of first links: the links 30 in Bruckman and the ports 404 in Basso. Ex1005, Fig. 2; Ex. 1006, Fig. 4.

This is evident if the hashing size parameter disclosed in the ’740 Patent is applied to Bruckman’s links 30 and traces 52 or Basso’s ports 404 and blades 403. *Id.* As Mr. Gomez testified, applying the parameter to a system in which “each port

corresponded to only one [second link] ... would give an erroneous result” because the total number of available paths is equal to the number of ports. EX2024, ¶75. Thus, applying the hashing parameter to Bruckman or Basso would yield the number of links 30 corresponding to one of the concentrators 50 (in Bruckman) or the number of ports 404 corresponding to one of the blades 403 (in Basso), reflecting that there is no second group to select from in either of these two references. In short, the single computational result in those references reflects a single selection, not two. EX2024, ¶¶75, 104-105, 111-112.

Petitioner asserts that PO “ignores” Petitioner’s “analysis” of the single computation limitation and argues for two selections in sequence. Reply, 29-30. Again, not so. First, Petitioner’s “analysis” demonstrates that Bruckman uses a hashing function for selecting links from one group, not two. *Id.*, EX1005, [0063]. Bruckman’s function does not even identify a trace 52 corresponding to the link 30, let alone select it. EX2024, ¶105. Second, PO is not arguing for a temporal requirement. POR, 22-23. However, the claims still require two selections, and neither Bruckman nor Basso disclose computational results reflecting two selections.

Petitioner incorrectly points to Basso’s use of a hash function to select a “blade/port combination.” Reply, 31-32. As Petitioner admits, each of the ports in

Basso is part of (i.e., already combined with) a blade such that selection of a port is indistinguishable and equivalent to selection of a “blade-port combination” (or the second-level line that Petitioner identifies as a second link). POR, 56-57; EX2024, ¶¶112; Reply, 32 (“Because there is a one-to-one correspondence of blades to second-level lines, selection of a particular blade also acts as a selection of the corresponding second-level line.”). A POSITA would thus understand that Basso’s computational result always reflects the number of available ports. In contrast, the single computation in the ’740 Patent reflects the number of selectable links in two corresponding groups (e.g., ports and traces, where no port is fixedly assigned to a specific trace) in a single result.

Petitioner’s argument that the claims do not recite “negative limitations barring a packet from having been previously processed or forwarded” likewise misses the mark. First, assuming a network processor generates a computational result that selects a port *after* a packet reaches its blade, it is not this single computational result that selects both the blade and port because the blade was already selected *before* the computational result was generated. EX2024, ¶¶112-114; POR, 60-62. Second, even assuming the network processor forwards a processed packet to the switch fabric to be redirected to a different port, as Dr. Houh testified in deposition, it is still the switch fabric that directs the packet to an

appropriate blade. *Compare* EX1006, [0046] (“[N]etwork processor 403A may forward the processed packet to switch fabric 401 which may then direct the processed packet to blade 402B/port 404D.”) *with* EX2026 [Houh Dep. Tr.], 177:13-24 (“[Q] In the example you discuss in Paragraph 46, it is the switch fabric which directs incoming packets of data to particular blades. Correct? ... A. Sure. I mean, that's what it ... says...[I]t's ... configured to send an incoming packet to -- to one of the blades.”). Third, even assuming—as Petitioner appears to contend without explanation—that Basso discloses a network processor that selects a “blade/port combination” on a different blade, without an interceding selection of a blade by the switch fabric,¹⁰ Basso’s hash function still performs only a single selection given that the ports in Basso indisputably have a one-to-one correspondence with Basso’s blades, of which they are a part. The same is true of Basso’s second-level lines,

¹⁰ Dr. Houh asserted that even though the switch fabric sends the data to the blade, the “network processor and the system overall determines a port and blade.” EX2026 [Houh Dep. Tr.], 177:25-178:5. But Dr. Houh also admitted that he could not recall analyzing whether the switch fabric performed a hashing function or if that would constitute an additional computation; and he did not analyze this issue in his declaration.

which Petitioner admits have a “one-to-one correspondence” with Basso’s blades. Reply, 32.

C. Bruckman does not teach “selecting from two or more backplane traces”

Petitioner incorrectly asserts that the lack of a “fixed relationship” between the ports and backplane traces is an “unclaimed structural feature” with respect to claims 14, 15, 29, and 30. Reply, 21. Claims 14-15 require “coupling the user ports to one or more interface modules; coupling each user interface module ... using two or more backplane traces arranged in parallel,” and “selecting ... a backplane trace from the two or more backplane traces.”¹¹ The claimed backplane traces thus correspond to a group of ports, as both groups are coupled to the same interface module. It is from the “two or more backplane traces” coupled to the same interface module as the claimed ports that the claimed selection must be made. Thus, the claims require that (i) the claimed ports are connected to an interface module that is also connected to at least two backplane traces and (ii) these backplane traces must be the same as those from which the claimed selection is made. Though there is no temporal limitation, the claimed structure must satisfy both requirements.

¹¹ Claims 29-30 are apparatus claims with similar limitations in which each interface module is coupled to user ports and two or more backplane traces.

As discussed *supra*, neither of these requirements are met by Bruckman or Basso, which disclose first links 30 that correspond to only a single trace 52 (or port 404 and blade 403, respectively in Basso), not two or more as required by the claims. *Supra*, IIIB1. That ***single*** trace (or blade in Basso) is not (i) “two or more” traces corresponding to the same interface module as a claimed port, and (ii) not a selectable trace in any event, because it is determined by the selection of a link 30 in Bruckman or port 404 in Basso. Accordingly, the Board should find claims 14-15 and 29-30 patentable.

IV. THE PETITION DOES NOT ADDRESS OTHER LIMITATIONS

Petitioner argues that “Apparatus for ... modules being bi-directional” was meant to address 29.1 and 29.2 as part of 29.0. Reply, 34. But that does not specify where 29.1 and 29.2 are found in the prior art. Further, 29.2 also requires “and operative to communicate in both an upstream direction and a downstream direction.” Pet., 103. The Reply fails to argue the Petition addressed this limitation. Reply, 34.

Petitioner argues that the limitation “so as to transfer the data frames ...” was addressed in claims 1.3 and 1.5. Reply, 34-35. This limitation is different than limitations 1.3 and 1.5 and missing from the analysis in the Petition. Pet.,

75. Further, the Petition’s analysis of limitation 3.1 does not rely on its analysis of claim 1. Pet., 49.

The Petition’s analysis of 30.2 cites to 29.3, which is similar to limitation 30.3, not the “which are arranged to process ...” limitation (30.2), which the Petition fails to address. Pet., 75.

V. CONCLUSION

For the reasons set forth herein, PO respectfully requests that the Board find the challenged claims patentable.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner's Sur-Reply (the "POSR") consists of 5581 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POSR complies with the type-volume limitation of 5,600 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/ Stephen McBride /

Date: May 10, 2024

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, pursuant to 37 CFR § 42.6(e), a true and correct copy of the foregoing **PATENT OWNER'S SUR-REPLY** has been served electronically via email on counsel of record for Petitioner:

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