

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.,
Petitioner,

v.

CORRECT TRANSMISSION, LLC,
Patent Owner.

IPR2021-00814
Patent 7,768,928 B2

Before BRYAN F. MOORE, JOHN R. KENNY, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

BELISLE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Case Posture

Juniper Networks, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 (“Challenged Claims”) of U.S. Patent No. 7,768,928 B2 (Ex. 1001, “the ’928 patent”). Petitioner identifies itself as a real party in interest. Pet. x. Correct Transmission, LLC (“Patent Owner”) identifies itself as a real party in interest (Paper 4, 1), and timely filed a Preliminary Response to the Petition (Paper 6, “Prelim. Resp.”). In addition, with prior authorization from the Board, the parties filed supplemental briefing concerning the Preliminary Response. Paper 9 (“Reply-1”); Paper 10 (“Reply-2”); Paper 11 (“Sur-Reply-1”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2020). We may not institute an *inter partes* review “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Applying those standards, and upon consideration of the information presented in the Petition, Preliminary Response, and supplemental briefing, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to any of challenged claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 of the ’928 patent. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Accordingly, constrained by the record before us, we deny institution of an *inter partes* review of the ’928 patent.

B. Related Proceedings

The parties indicate that the '928 patent is involved in two U.S. district court actions, namely, *Correct Transmission, LLC v. Juniper Networks, Inc.*, No. 6:20-cv-670 (W.D. Tex.); and *Correct Transmission, LLC v. Adtran, Inc.*, No. 6:20-cv-669 (W.D. Tex.). Pet. x; Paper 4, 1.

Patent Owner also indicates that the following matters may affect, or be affected by, a decision in this case: *Juniper Networks, Inc. v. Correct Transmission, LLC*, IPR2021-00469 (PTAB); *Juniper Networks, Inc. v. Correct Transmission, LLC*, IPR2021-00571 (PTAB);¹ and *Juniper Networks, Inc. v. Correct Transmission, LLC*, IPR2021-00682 (PTAB). Paper 4, 1; see Pet. x.

C. The '928 Patent

The '928 patent is titled “Connectivity Fault Management (CFM) in Networks With Link Aggregation Group Connections,” and issued on August 3, 2010, from U.S. Patent Application No. 11/483,650, filed July 11, 2006. Ex. 1001, codes (10), (21), (22), (45), (54).

The '928 patent generally relates to “Connectivity and Fault Management (CFM) and, more particularly but not exclusively, to implementing CFM techniques over networks that put into practice link-aggregation mechanisms.” Ex. 1001, 1:8–11.

The '928 patent summarizes the invention as follows:

[A] maintenance entity operable in an Ethernet Connectivity Fault Management (CFM) domain. The maintenance entity comprises a port definer module and a connection configured to

¹ On August 30, 2021, the Board denied institution of an *inter partes* review of U.S. Patent No. 7,127,523 B2 in IPR2021-00571. Paper 10.

be connected to a group of aggregated links. The port definer module is configured to examine *a designated link* of the group by forwarding at least one CFM message *via the designated link*. Ex. 1001, 3:7–14 (emphases added). The '928 patent explains that the Ethernet CFM domain is “preferably defined according to recognized Standards such as IEEE 802.lag and ITU-T SG 13 Q5 WG. *Id.* at 7:5–7. It also explains that “aggregated links” or a “link aggregation group (LAG)” “may be understood to describe parallel usage of network cables and ports for increasing the bandwidth of a single logical link beyond the limits of any one single cable or port,” and that “[t]he [l]ink aggregation is based on a networking Standard known as IEEE 802.3ad.” *Id.* at 7:8–15; *see id.* at 1:55–58 (“A LAG is a group of two or more network links bundled together to appear as a single link. For instance, bundling two 100 Mbps network interfaces into a single link creates one 200 Mbps link.”).

Figure 3 of the '928 patent is reproduced below.

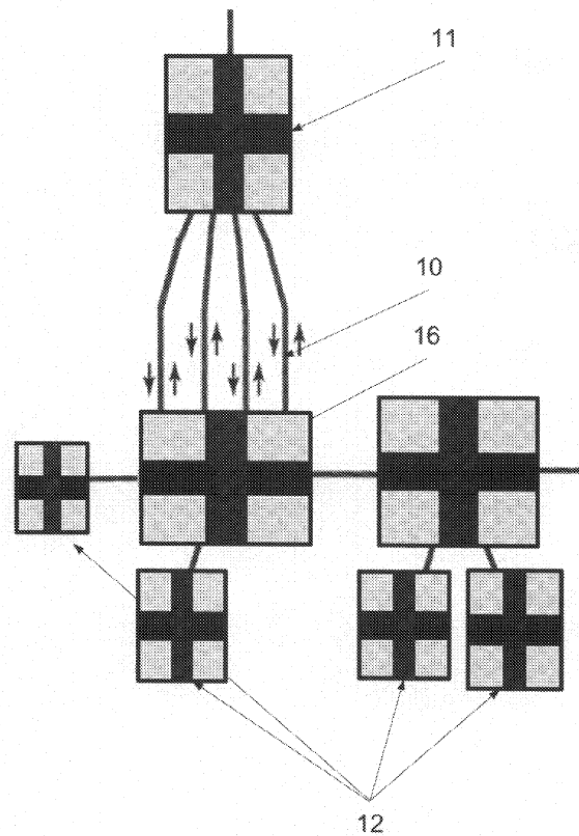


FIG. 3

Figure 3 is a schematic illustration of an exemplary network arrangement, which defines a maintenance domain having a LAG connection.

Ex. 1001, 5:51–53, Fig. 3. Figure 3 above depicts an exemplary network section having LAG 10, which is used for connecting between maintenance entity 11, which is preferably defined as a maintenance end-point (MEP), and several other maintenance entities 12, which are configured as MEPs or maintenance entity group (MEG) intermediate points (MIPs). *Id.* at 8:63–67, 1:30–32 (“A flow point at the edge of a CFM domain is a maintenance end-point (MEP).”), 1:32–33 (“A flow point inside a domain and visible to an MEP is a maintenance entity group (MEG) intermediate point (MIP).”).

Each one of LAG members 10 is “a bidirectional connection that adds a certain bandwidth, of preferably 100 Mbps or 1000 Mbps, to the logical connection between the source point 11 and a target point 12.” *Id.* at 9:8–12.

According to the '928 patent, “[p]ackets of the CFM messages are transferred, as any other packets, over the physical connections that connect among different entities in the network.” Ex. 1001, 9:47–49. Source point 11 “usually balances the packets which are transferred thereto in order to efficiently utilize the bandwidth of the links of the LAG,” which is achieved using “known balancing algorithms.” *Id.* at 10:27–37. If distribution of a CFM message, which has been configured for checking a specific LAG member, is done regardless of the packet source destination, “the CFM message which is designated to pass through a specific LAG member . . . is routed *according to the balancing algorithm*,” which may “*mislead* the sending” maintenance entity. *Id.* at 10:49–57 (emphases added).

According to the '928 patent, “[i]n order to avoid such errors, each source point is configured for identifying CFM messages and to forward them via an associated LAG member.” Ex. 1001, 10:58–60. “[W]hen the source point receives or generates a CFM message, it does not forward it via an LAG member which has been chosen using a balancing algorithm such as a hashing function, but forwards the CFM message via the LAG member which it specifies.” *Id.* at 10:60–64. This processing flow is shown in Figure 4, reproduced below:

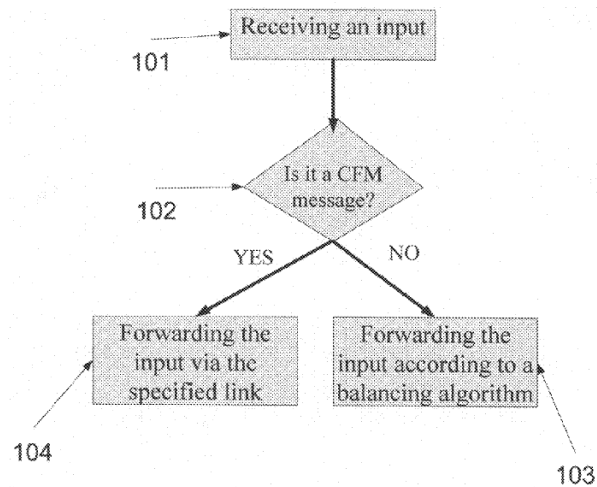


FIG. 4

Figure 4 is a flowchart of a forwarding process.

Ex. 1001, 5:54–55, Fig. 4. According to the '928 patent, configuring the source point to identify CFM messages and forward them to a designated LAG member “enables system operators to define the exact path of Ethernet CFM frames in a decisive and accurate manner” and further determine whether the designated LAG member is experiencing a failure. *Id.* at 10:60–64, 11:24–28, 12:55–57.

D. Illustrative Claim

The '928 patent includes thirty-two claims, of which claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 are challenged. Claims 1, 14, 22, and 32 are the challenged independent claims. Claim 1 is illustrative and reproduced below.

1. A maintenance entity in an Ethernet Connectivity Fault Management (CFM) domain, comprising:
 - a port definer module;
 - a connection configured to be connected to a group of aggregated physical links, said group of links comprising a single logical link to which packets are directed;said port definer module being configured to designate any one physical link of said logical link as required for examining of said designated physical link of said logical link, said designation comprising forwarding at least one CFM message to said logical link in such a way as to be forwarded over said logical link specifically via said designated physical link, said designation being available for each physical link separately, thereby allowing examination according to requirement of any physical link of said logical link.

Ex. 1001, 14:51–67.

E. Applied References

Petitioner relies upon the following references:

Hayami et al., U.S. Patent No. 6,198,726 B1 (Ex. 1006, “Hayami”), filed August 28, 1997, issued March 6, 2001.

Bruckman et al., U.S. Patent No. 6,957,369 B2 (Ex. 1007, “Bruckman”), filed May 30, 2002, issued October 18, 2005.

ITU-T Recommendation Y.1731: OAM Functions and Mechanisms for Ethernet Based Networks, listed as approved May 22, 2006 (Ex. 1005, “Y.1731”).

Pet. 2.

Petitioner submits Y.1731 “is a printed publication from ITU’s Telecommunication Standardization Sector, which published on May 22, 2006,” and “is prior art under at least §102(a).” Pet. 2–3. Petitioner also submits the Declaration of Mr. Huub van Helvoort (Ex. 1033), who testifies,

inter alia, that “ITU-T published a version of Y.1731 on its website to ITU members shortly after SG13 approval of the final draft,” and that “this publication occurred no later than June 1, 2006.” Ex. 1033 ¶ 8; *see* Reply-1, 2. Patent Owner opposes. Prelim. Resp. 31–36. Because we deny institution of an *inter partes* review of the ’928 patent on the merits, even assuming Y.1731 is a printed publication and properly qualifies as prior art in this case, we need not and do not reach herein whether Y.1731 qualifies as a printed publication.

F. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 of the ’928 patent based on the following grounds.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 6, 7, 9–15, 18–24, 26, 27, 30–32	103(a) ²	Y.1731, Hayami
1–3, 6, 7, 9–15, 18–24, 26, 27, 30–32	103(a)	Bruckman

Pet. 2. Petitioner relies upon the Declarations of Yaling Yang, Ph.D. (Ex. 1003) and Mr. Huub van Helvoort (Ex. 1033).

II. ANALYSIS

A. Applicable Law

Petitioner challenges the patentability of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 of the ’928 patent on grounds that the claims would have been obvious under 35 U.S.C. § 103 in light of various references

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the ’928 patent was filed before March 16, 2013, the effective date of the relevant amendment, the pre-AIA version of § 103 applies.

including: Y.1731, Hayami, and Bruckman. “In an [*inter partes* review], the petitioner has the burden from the onset to show *with particularity* why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)) (emphasis added). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when of record, objective evidence of obviousness or non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations may include the following: “commercial success, long felt but unsolved needs,

failure of others, etc.”³ *Id.* The totality of the evidence submitted may show that the challenged claims would not have been obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art, at the time of the effective filing date of the '928 patent:

would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a closely related field, and one to two years of experience in the design and development of network communication systems. Alternatively, a POSITA would have a Master's degree or similar post-graduate work in electrical engineering, computer engineering, computer science, or a closely related field, and less years of design and development experience.

Pet. 7 (citing Ex. 1003 ¶¶ 67–71). Patent Owner does not present an alternative definition at this stage of the proceeding. Prelim. Resp. 30.

We regard Petitioner's proposed definition as reasonable, and consistent with the prior art before us. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (determining that the Board of Patent Appeals and

³ At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

Interferences did not err in concluding that the level of ordinary skill in the art was best determined by the references of record). Accordingly, we apply the level of skill set forth above, which also is consistent with the testimony of Dr. Yang (Ex. 1003 ¶¶ 67–71).

C. Claim Construction

Petitioner does not propose any claim terms for construction. Pet. 7 (“For purposes of this proceeding, Petitioner construes each of the ’928 claim terms as having its ordinary and custom[ary] meaning.”). Although, Petitioner does submit that, “[f]or purposes of this IPR only, Petitioner relies on the claim scope positions Patent Owner has advanced in district court for ‘port definer module.’” Pet. 8. Similarly, Patent Owner argues each claim term should have its ordinary and customary meaning, except that, as in the parallel district court proceeding, the function of alleged means-plus-function term “port definer module” should be construed to be “designating any one physical link of the logical link and examining the designated link of the logical link.” Prelim. Resp. 11–12. We note that, in the Preliminary Response, Patent Owner does not appear to identify any structure in the Specification for performing that function. *See generally* Prelim. Resp. Regardless, we do not find that the express construction of any term is necessary for this decision. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

D. Obviousness of the Challenged Claims over the Combination of Y.1731 and Hayami (Ground 1)

Petitioner contends claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Y.1731 (Ex. 1005) and Hayami (Ex. 1006). Pet. 9–55. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 30–48. Based on our review of the Petition and Preliminary Response, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that any of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 is unpatentable as obvious over the combination of Y.1731 and Hayami, as discussed below. We begin with an overview of Y.1731.

1. Overview of Y.1731

Y.1731 generally “provides mechanisms for user-plane OAM [Operation, Administration and Maintenance] functionality in Ethernet networks,” and “is designed specifically to support point-to-point connections and multipoint connectivity in the ETH layer [Ethernet MAC layer network].” Ex. 1005, 3, 12–13.⁴ Such OAM mechanisms “offer capabilities to operate and maintain the network and service aspects of ETH layer,” including detecting loss of continuity (LOC) between any pair of Maintenance Entity Group End Points (MEPs) in a Maintenance Entity Group (MEG). *Id.* at 3, 13, 19, 67 (I.1).

⁴ We refer to exhibit page numbering (i.e., the page numbering added by Petitioner), and not to the original pagination of Exhibit 1005.

Figure II.1 of Y.1731 is reproduced below.

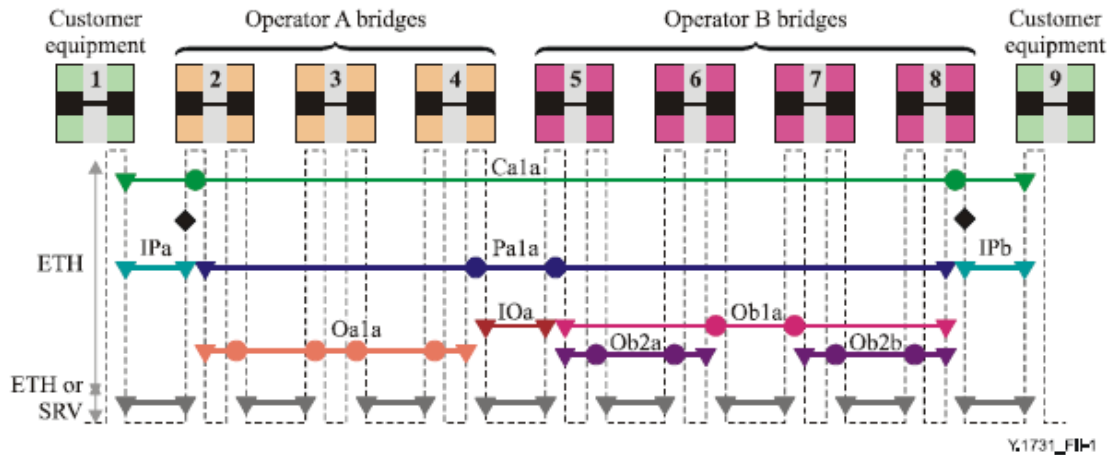


Figure II.1 is an example MEG level assignment for shared MEG levels.

Ex. 1005, 71, Fig. II.1/Y.1731. “Figure II.1 provides an example scenario with the default assignment of MEG Levels, where the Customer, Provider, and Operator roles share the MEG Levels. In the figure, triangles represent MEPs, circles represent MIPs [MEG Intermediate Points], and diamonds represent TrCPs [Traffic Conditioning Points].” *Id.* at 13–18, 71.

Figure II.2 of Y.1731 is reproduced below.

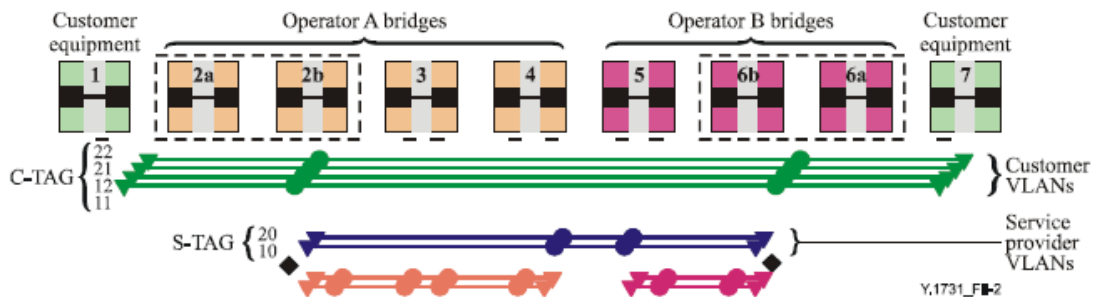


Figure II.2 is an example MEG level assignment for independent MEG levels.

Ex. 1005, 72, Fig. II.2/Y.1731. “Figure II.2 provides an example scenario where the customer and service provider do not share the MEG Levels.

However, the service provider and operator share the MEG Levels. In the figure, triangles represent MEPs, circles represent MIPs, and diamonds represent TrCPs.” *Id.* at 13–18, 72.

2. Independent Claims 1, 14, 22, and 32

a. Physical/Logical Link Limitations

Independent claims 1, 14, 22, and 32 each require, through various phrasing, aggregated *physical* links with a single *logical* link to which packets are directed. *See* Ex. 1001, claim 1 (“a group of aggregated physical links, said group of links comprising a single logical link to which packets are directed”), claim 14 (“at least one group of aggregated physical links comprising a single logical link”), claim 22 (“connecting first and second maintenance entities via a link aggregation group (LAG), said LAG comprising a single logical link made up of a plurality of physical links”), claim 32 (“a group of aggregated physical links, said group of links comprising a single logical link to which packets are directed”). We refer to these limitations collectively as the Physical/Logical Link Limitations.

The parties dispute, *inter alia*, whether Petitioner’s cited evidence adequately supports Petitioner’s contention that Y.1731 discloses the Physical/Logical Link Limitations, as recited in each of challenged independent claims 1, 14, 22, and 32. *See, e.g.*, Prelim. Resp. 36–39; Pet. 16–19, 52.

Petitioner contends Y.1731 discloses the Physical/Logical Link Limitations. Pet. 16. But Petitioner does not direct us to any explicit disclosure in Y.1731 of such features. Instead, Petitioner cites to a sentence in Y.1731 stating, “[t]he architectural basis for this Recommendation is the Ethernet specification G.8010/Y.1306 *which also accounts for IEEE*

802.1D, 802.1Q, and 802.3” (Ex. 1005, 9 (emphases added)), and argues “Y.1731 teaches applying point-to-point and multipoint Ethernet connections to operate in conjunction with connections and architectures standardized in 802.3” (Pet. 16). Petitioner then argues “the 802.3ad Standard (and the omnibus 802.3 Standard which includes 802.3ad) describes ‘one or more links to be aggregated together to form a Link Aggregation Group, such that a MAC Client can treat the Link Aggregation Group as if it were a single link’ through the establishment of logical links.” Pet. 17. Petitioner also contends “Figure II.2, Y.1731 describes aggregated virtual connections to implement OAM functions on a network between MEPs.” Pet. 16. Petitioner concludes that “[b]ased on Y.1731’s teachings and its discussion of 802.3, a POSITA would have understood Y.1731 discloses a LAG for creating a single logical link for packet transfer.” Pet. 17.

Patent Owner argues:

With regard to the required aggregation of physical links, or LAG, Petitioner claims Y.1731 “discloses these claim elements.” Pet. at 16. Yet Petitioner does not point to any substantive element in Y.1731, but instead relies on the 802.3ad Standard to state that one or more links can be aggregated together to form a LAG. Pet. at 17. Notably, 802.3ad is not even mentioned in the cited Y.1731 Patent. Recognizing this fact, Petitioner apparently interprets Y.1731 to “encourage investigation of the entire 802.3 standard.” Pet. at 17, FN 57. As a result of this handwaving, Petitioner comes to the conclusion of “Based on Y.1731’s teachings and its discussion of 802.3, a POSITA would have understood that Y.1731 discloses a LAG.” Pet. at 17. The only reference Petitioner makes to Y.1731 is to Figure II.2, which purportedly discloses “aggregated virtual connections” as opposed to the required “aggregation of physical links.”

Prelim. Resp. 37–38. Patent Owner also argues “Petitioner, instead of citing actual language from Y.1731, improperly relies on the ’928 Patent as a *roadmap* to its obviousness analysis, which does not meet the required burden.” Prelim. Resp. 37 (emphasis added). Patent Owner further argues “Petitioner recognizes that Y.1731 does not disclose implementation of a LAG interface, and instead attempts to push together a variety of references not even mentioned in Y.1731, without providing any rationale as to *why* a POSITA would understand Y.1731 to include more than [it] explicitly discloses.” Prelim. Resp. 38 (emphasis added). We find Patent Owner’s arguments persuasive.

Petitioner has not explained sufficiently, let alone with particularity, *why* the skilled artisan, but for hindsight, would have (1) taken Y.1731, which says nothing concerning aggregated physical links with a single logical link to which packets are directed; (2) then turned to the architectural basis for Y.1731, namely “Ethernet specification G.8010/Y.1306”; (3) then turned to standards “IEEE 802.1D, 802.1Q, and 802.3,” which are “account[ed] for” by G.8010/Y.1306, and specifically selected to pursue 802.3 from among those; (4) then, without any reference or indication in Y.1731 itself, turned specifically to standard IEEE 802.3ad within the set of 802.3 standards, and specifically to its disclosure of aggregated physical links with a single logical link; and then (5) upon making all of these connections, understood Y.1731 *itself* to disclose or teach aggregated physical links with a single logical link, particularly in the context of the Challenged Claims as a whole. *See InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (“It appears that [the expert] relied on the [] patent itself as her roadmap for putting what she referred to

as pieces of a ‘jigsaw puzzle’ together.”); *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (citing *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (“To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability.”). Although “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton” (*KSR*, 550 U.S. at 421), the Federal Circuit has observed that “‘the prejudice of hindsight bias’ often overlooks that the ‘genius of invention is often a combination of known elements which in hindsight seems preordained.’” *Polaris Industries, Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1068 (Fed. Cir. 2018).

In this case, Petitioner contends as “Ground 1” that “[t]he combination of Y.1731 and Hayami renders obvious all Challenged Claims.” Pet. 9. Thus, the question before us is not whether aggregated physical links with a single logical link to which packets are directed, as a disparate puzzle piece, were known in the art—the ’928 patent itself tell us that puzzle piece was known. *See* Ex. 1001, 1:41–2:9 (“Such a solution, which has been adapted by many network planners, is a link aggregation group (LAG) mechanism. A LAG is a group of two or more network links bundled together to appear as a single link. . . . In other words, the two or more network links are used in parallel in order to increase the logical link speed beyond the physical limits of any one of them.”). Rather, the question before us is whether the skilled artisan would have understood Y.1731 alone (or in combination with Hayami) to teach the Physical/Logical Link Limitations. Petitioner acknowledges Y.1731 itself does not explicitly

disclose this limitation, but as outlined above, asks us to leap from Y.1731 to IEEE 802.3ad, a specific standard not cited, let alone discussed, in Y.1731, and infuse hand-picked teachings from IEEE 802.3ad into Y.1731 as if taught therein *ab initio*. See Pet. 16–19. On the record before us, we find Petitioner does not provide particular evidentiary support and explanation for such a leap. See 35 U.S.C. § 312(a)(3) (The *petition* must identify supporting evidence “with particularity.” (emphasis added)); 37 C.F.R. § 42.104(b)(4) (“The *petition* must specify where each element of the claim is found in the prior art” (emphasis added)).

Additionally, even if we were to assume that the skilled artisan was aware of each of the hand-picked teachings from Y.1731 and standard IEEE 802.3ad individually, we find Petitioner does not provide with particularity any rationale to combine such teachings, i.e., “whether the relevant skilled artisan had a motivation to combine pieces of prior art in the way eventually claimed in the patent at issue.” *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1343 (Fed. Cir. 2017) (citing *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48, 1051 (Fed. Cir. 2016) (en banc)) (emphasis added).

For the foregoing reasons, and constrained by the Petition, we are not persuaded that the cited evidence adequately supports Petitioner’s contention that Y.1731 discloses the Physical/Logical Link Limitations, as recited in independent claims 1, 14, 22, and 32.

b. Designating Limitations

Independent claims 1, 14, 22, and 32 also each require, through various phrasing, designating any one *physical* link of the *logical* link for examination of the physical link. See Ex. 1001, claim 1 (“port definer

module being configured to designate any one physical link of said logical link as required for examining of said designated physical link of said logical link”), claim 14 (“port definer module of said first maintenance entity being configured to designate any physical link as required of said single logical link”), claim 22 (“using said first maintenance entity to select one of said physical links as a designated link for forwarding a CFM message via a designated link of said LAG . . . each of said physical links being selectable as said designated link, thereby to provide for examination as required for any physical link of said group comprising said single logical link”), claim 32 (“port definer module being configured to designate any one physical link of said logical link as required for sending an Ethernet packet via said designated physical link of said logical link”). We refer to these limitations collectively as the Designating Limitations.

The parties dispute, *inter alia*, whether Petitioner’s cited evidence adequately supports Petitioner’s contention that Y.1731 discloses the Designating Limitations, as recited in each of challenged independent claims 1, 14, 22, and 32. *See, e.g.*, Prelim. Resp. 39–42; Pet. 19–24, 52–53.

Petitioner contends Y.1731 discloses the Designating Limitations, but does so based on the premise that “Y.1731 discloses a group of aggregated physical links appearing as a single logical link for packet transfer” (Pet. 19), of which we are not persuaded, as discussed above. Petitioner argues “Y.1731 discloses [that] an MEP [maintenance end-point] includes structure *capable of* performing the function ‘designating any one physical link of the logical link’” (Pet. 20 (emphasis added)), but does not direct us with particularity to any actual teaching in Y.1731 of such a designating function involving both physical and logical links. Petitioner also argues

“Y.1731’s MEP forwards frames to predefined ports,” and concludes that the skilled artisan “would have understood Y.1731 describes the functionality of designating any one physical link of the logical link” (Pet. 20–21), but does so without explaining *why* the skilled artisan would have had such an understanding. As with the Physical/Logical Link Limitations (*see supra*), Petitioner again hand-picks certain disclosure in standard IEEE 802.3ad concerning “Link Aggregation Control,” converts it to a teaching of Y.1731, and concludes that “[b]y Y.1731 operating with 802.3-based connections and architectures, a POSITA would have understood Y.1731 discloses or suggests its MEP includes a processor-based electrical circuit capable of performing the function designating any one physical link of the logical link.” Pet. 21–22 (citing, *inter alia*, Ex. 1013, Fig. 43-2).

Patent Owner argues:

Petitioner provides no evidence from Y.1731 that the cited MEP “designates any one physical link” as required by the [Challenged Claims]. Petitioner doesn’t even attempt to identify what action by the MEP would constitute a purported “designation.” In fact, as Petitioner states, the MEP of Y.1731 forwards frames to predefined ports, as opposed to the MEP designating a port for examination, which is required by the [C]hallenged [C]laims.

Prelim. Resp. 41. Patent Owner also argues, given Petitioner’s infusion of standard IEEE 802.3ad disclosures into Y.1731, “Petitioner does not reconcile how Y.1731’s purported designation of ‘predefined ports’ complies with the 802.3ad standards.” Prelim. Resp. 41. Patent Owner further argues “Petitioner fails to show how the MEP of Y.1731 designates a physical link within the purported LAG of 802.3ad.” Prelim. Resp. 41–42.

We find Patent Owner’s arguments persuasive. We also again find, on the record before us, Petitioner simply does not provide particular (or clear) evidentiary support and explanation for leaping from Y.1731 to standard IEEE 802.3ad, or for *how* Y.1731 allegedly teaches the Designating Limitations in combination with the Physical/Logical Link Limitations as embodied in the Challenged Claims. *See* 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b)(4).

We recognize that a reason to combine teachings “need not be found in prior art references, but equally can be found in the knowledge generally available to one of ordinary skill in the art,” and such knowledge may be established through “the testimony of an expert witness.” *Alza Corp. v. Mylan Lab’ys, Inc.*, 464 F.3d 1286, 1294 (Fed. Cir. 2006). In this case, however, Petitioner’s expert does not sufficiently evidence or explain *why* a person of ordinary skill in the art would have been motivated to modify Y.1731 in view of the hand-picked disclosures from standard IEEE 802.3ad to achieve the features of the Designating Limitations, or *why* a person of ordinary skill in the art would “understand” Y.1731 itself to allegedly teach such features, in the context of the Challenged Claims as a whole. *See* Pet. 19–27; Ex. 1003 ¶¶ 91–101. We give such conclusory, unsupported assertions by Petitioner’s expert little or no weight. *See In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”); *Rohm and Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) (noting that a fact finder is not required to “credit the unsupported assertions of an expert witness”); 37 C.F.R. § 42.65(a) (“Expert

testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”).

Notably, Petitioner appears to take inconsistent positions regarding the Designating Limitations. On the one hand, Petitioner relies only on Y.1731 for allegedly teaching the Designating Limitations (*see* Pet. 19–27), but on the other hand, Petitioner admits Y.1731 “doesn’t expressly disclose designating one of its physical links to examine the designated link” (Pet. 14). Petitioner also admits that the Examiner allowed the Challenged Claims based on the Designating Limitations. Pet. 6. We find Y.1731 not only does not “expressly disclose” the Designating Limitations, but as discussed above, Petitioner has not shown with particularity (and clarity) how it otherwise does so.

For the foregoing reasons, and constrained by the Petition, we are not persuaded that the cited evidence adequately supports Petitioner’s contention that Y.1731 discloses the Designating Limitations, as recited in independent claims 1, 14, 22, and 32.

3. Summary

For the foregoing reasons, we determine that Petitioner has not demonstrated a reasonable likelihood of success in establishing the unpatentability of any of independent claims 1, 14, 22, and 32, and claims 2, 3, 6, 7, 9–13, 15, 18–21, 23, 24, 26, 27, 30, and 31, which depend therefrom, as obvious over the combination of Y.1731 and Hayami.

E. Obviousness of the Challenged Claims over Bruckman (Ground 2)

Petitioner contends claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 are unpatentable under 35 U.S.C. § 103 as obvious over Bruckman

(Ex. 1007). Pet. 55–86. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 48–65. Based on our review of the Petition and Preliminary Response, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that any of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 is unpatentable as obvious over Bruckman, as discussed below. We begin with an overview of Bruckman.

1. Overview of Bruckman

Bruckman relates generally “to diagnostic testing of electronic equipment, and specifically to nonintrusive self-testing of communication systems.” Ex. 1007, 1:5–7. Bruckman discloses:

A method for self-testing of an electronic system that includes a main module and subsidiary modules, which are connected to the main module by data lines, at least some of which may be idle. One of the idle lines is selected to serve as an aid line, and the subsidiary module to which the aid line is connected is instructed to loop back traffic reaching the subsidiary module via the aid line. Another idle line is selected for testing, and a switch in the main module is configured to link the aid line and the line under test. The subsidiary module to which the line under test is connected transmits test traffic over the idle line to the main module. If the test traffic does not return to the subsidiary module within a predetermined period of time, a failure is reported.

Id., Abstract. Figure 1 of Bruckman is reproduced below.

FIG. 1

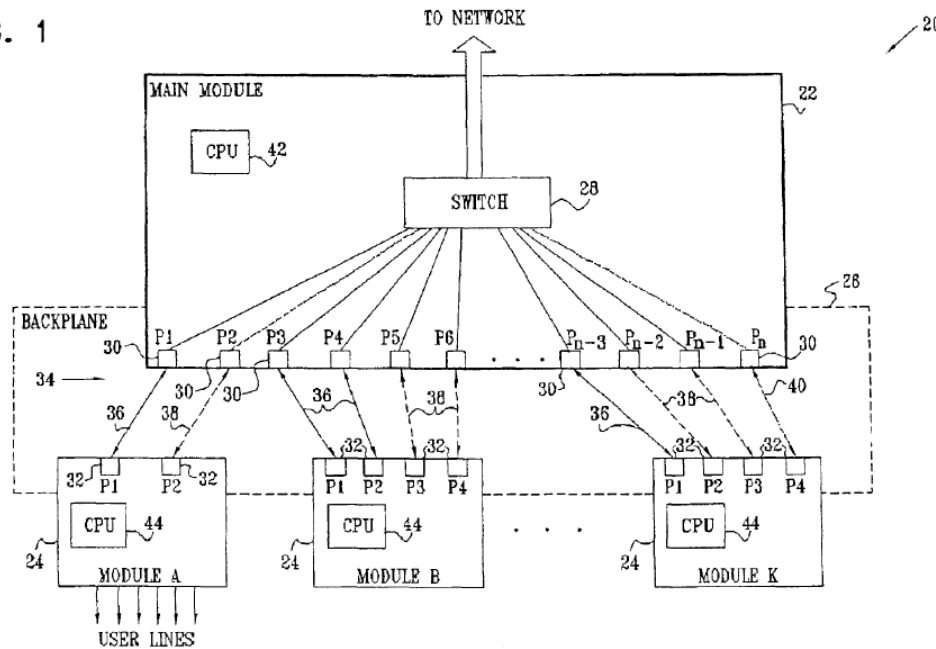


Figure 1 is a block diagram that schematically illustrates a communication system with non-intrusive hidden failure detection capability.

Ex. 1007, 4:43–46, Fig. 1. As shown above in Figure 1, communication system 20 comprises main module 22 and a number of subsidiary modules 24, labeled module A, B, . . . , K. *Id.* at 4:54–58. The main and subsidiary modules plug into backplane 26, which includes traces 34 that connect the modules. *Id.* at 4:58–60. Main module 22 comprises switch 28 and multiple ports 30, labeled P1, P2, . . . , Pn, for connecting to ports 32 of subsidiary modules 24 via the backplane traces. *Id.* at 4:60–63. Ports 30 and 32 typically comprise high-speed physical interface components. *Id.* at 4:63–64.

Bruckman discloses that switch 28 aggregates upstream traffic from ports 30 to an uplink trunk connecting to a high-speed network, and distributes downstream traffic from the network to ports 30 using an appropriate internal protocol. Ex. 1007, 5:1–5. Switch 28 can also be

configured to direct data from any one of main module ports 30 to any other main module port, thus forming a virtual connection between subsidiary module ports 32 that are connected to these main module ports. *Id.* at 5:5–9.

Bruckman also discloses “[t]he physical layer interfaces between the subsidiary modules and the main module are uniform, and the different services are thus transmitted through ports 30 and 32 and are aggregated by switch 28 irrespective of the differences in service type.” Ex. 1007, 5:21–26. In Bruckman, “an operator of system 20 installs subsidiary modules 24 with some spare capacity, to allow provisioning of additional services when requested by users,” and therefore, “some of traces 34 on backplane 26 may be idle at any given time.” *Id.* at 5:26–30. In Figure 1 above, active traces 36 are shown by solid lines, and idle traces 38 are dashed. *Id.* at 5:30–31.

2. *Physical/Logical Link Limitations*

The parties dispute, *inter alia*, whether Petitioner’s cited evidence adequately supports Petitioner’s contention that Bruckman discloses the Physical/Logical Link Limitations, as recited in each of challenged independent claims 1, 14, 22, and 32. *See, e.g.*, Prelim. Resp. 51–53; Pet. 62–64.

Referring to Figure 1 of Bruckman, reproduced above, Petitioner argues “Bruckman includes different groups . . . of aggregated links connecting the main module to the subsidiary modules, where each connection between the main and subsidiary modules comprises multiple links.” Pet. 62. Petitioner also argues “Bruckman connects its main module with ‘a trunk link to a core network’ to subsidiary modules serving network users,” and notes that the ’928 patent specifies “LAG is also known as an

Ethernet trunk.” Pet. 64. Petitioner concludes “[b]ased on Bruckman’s teachings and what was generally known in the art, a POSITA would have understood Bruckman discloses a group of aggregated physical links comprising a single logical link for packet transfer and for connecting first and second maintenance entities.” Pet. 64.

Patent Owner argues:

Communication between the main module and subsidiary modules is made through one of the active lines, such as line 36. Nothing in Bruckman suggests that these lines are comprised of an aggregated group of physical links. Petitioner’s only purported evidence of this is a citation to Dr. Yang [Petitioner’s expert]. Petitioner’s expert states that the LAG term was known in the art, without providing any reasoning as to why Bruckman’s lines would be “aggregated” beyond a conclusory modified drawing. Bruckman discloses that these extra lines are used “to allow provisioning of additional services when requested by users.” Notably, nothing says that these lines are aggregated links, or that the separate idle and active connections of Bruckman can “allow two or more links to be aggregated together in such a manner that a destination entity can treat data that is received as a number of links as a single logical link.” Instead of explaining its position, Petitioner states that based on Bruckman and “what was generally known in the art,” a POSTIA would have “understood” that Bruckman discloses a group of aggregated physical links comprising a single logical link.

Prelim. Resp. 52–53 (citations omitted). We find Patent Owner’s arguments persuasive.

As shown above in Figure 1 of Bruckman, communication system 20 comprises traces 34 for carrying data between connecting ports 30 of main module 22 and ports 32 of subsidiary modules 24, where some traces are active traces 36 (shown by solid lines) and others are idle traces (shown by dotted lines). Ex. 1007, 4:54–67, 5:21–54. According to Bruckman, idle

traces 38 are used “to allow provisioning of additional services when requested by users.” *Id.* at 5:26–31. Given Bruckman’s explicit disclosure of using traces 34 individually, with some active and others idle, we are not persuaded by Petitioner that Bruckman teaches a single logical link to which packets are directed for transmission across aggregated physical links (i.e., across two or more network links used in parallel in order to increase the logical link speed beyond the physical limits of any one of them (Ex. 1001, 1:53–67)). Petitioner does not direct us to any disclosure in Bruckman of bundling together multiple communication links in parallel and transmitting data over such aggregated links as if they were a single link. *See generally* Pet. 62–64. Again, neither Petitioner nor its declarant has explained sufficiently, let alone with particularity, *why* the skilled artisan, but for hindsight, would have understood Bruckman to teach the Physical/Logical Link Limitations. *See InTouch Techs.*, 751 F.3d at 1351; *Sensonics*, 81 F.3d at 1570.

For the foregoing reasons, and constrained by the Petition, we are not persuaded that the cited evidence adequately supports Petitioner’s contention that Bruckman discloses the Physical/Logical Link Limitations, as recited in independent claims 1, 14, 22, and 32.

3. *Designating Limitations*

The parties dispute, *inter alia*, whether Petitioner’s cited evidence adequately supports Petitioner’s contention that Bruckman discloses the Designating Limitations, as recited in each of challenged independent claims 1, 14, 22, and 32. *See, e.g.*, Prelim. Resp. 53–58; Pet. 64–69.

Petitioner contends Bruckman discloses the Designating Limitations, but does so based on the premise that Bruckman discloses the

Physical/Logical Link Limitations (Pet. 64), of which we are not persuaded, as discussed above. Petitioner also argues “Bruckman’s main module selects the lines to be tested and oversees the testing process through use of the subsidiary modules.” Pet. 64; *see* Pet. 65–67. Petitioner also argues “[b]ecause Bruckman’s master module selects the lines for testing by identifying particular connection ports, and oversees and initiates the testing process through use of the subsidiary modules and ports, a POSITA would have understood Bruckman describes the functionality of designating any one physical link of the logical link.” Pet. 67.

Patent Owner responds, and we agree, “Petitioner makes no attempt to explain how *any* purported physical link of Bruckman may be designated for testing, given the fact that Bruckman expressly teaches that only ‘idle lines’ can have test traffic.” Prelim. Resp. 55 (emphasis added). Patent Owner argues, and we agree:

Petitioner only addresses the “idle lines” in a conclusory manner stating that the main module of Bruckman “confirms a specific link.” Petitioner makes no attempt to distinguish idle lines vs. active lines, or explain how an active line could be designated to disclose how “any physical link” could be designated in Bruckman’s system. Instead, Petitioner assumes this is fact and concludes that “a POSITA would have understood” that Bruckman designates any one physical link.

Prelim. Resp. 55–56. On the record before us, we find neither Petitioner nor its declarant provides evidentiary support and explanation of sufficient particularity for *how* Bruckman, which explicitly discloses designating for testing only *idle* physical lines, allegedly teaches designating for testing *any* physical lines associated with a single logical line, or for *why* the skilled

artisan would understand Bruckman to teach doing so. *See* 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b)(4).

For the foregoing reasons, and constrained by the Petition, we are not persuaded that the cited evidence adequately supports Petitioner's contention that Bruckman discloses the Designating Limitations, as recited in independent claims 1, 14, 22, and 32.

4. *Summary*

For the foregoing reasons, we determine that Petitioner has not demonstrated a reasonable likelihood of success in establishing the unpatentability of any of independent claims 1, 14, 22, and 32, and claims 2, 3, 6, 7, 9–13, 15, 18–21, 23, 24, 26, 27, 30, and 31, which depend therefrom, as obvious over Bruckman.

F. Discretionary Denial Under 35 U.S.C. § 314(a)

Because we deny institution upon consideration of the merits of Petitioner's challenges, Patent Owner's arguments that we should exercise our discretion under 35 U.S.C. § 314(a) to deny institution are moot.

III. CONCLUSION

Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to any of claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 of the '928 patent under either of proffered Grounds 1 and 2.

IV. ORDER

For the reasons given, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is not instituted for claims 1–3, 6, 7, 9–15, 18–24, 26, 27, and 30–32 of U.S. Patent No. 7,768,928 B2.

IPR2021-00814
Patent 7,768,928 B2

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