

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.,
Petitioner,

v.

PORTSMOUTH NETWORK CORP.,
Patent Owner.

IPR2024-00913
IPR2024-00989
Patent 8,014,394 B2

Before JUSTIN T. ARBES, CHARLES J. BOUDREAU, and
PETER D. SHAPIRO, *Administrative Patent Judges*.

SHAPIRO, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314
Consolidating Proceedings
35 U.S.C. § 315(d); 37 C.F.R. § 42.122

I. INTRODUCTION

A. *Background and Summary*

Petitioner Juniper Networks, Inc. filed two Petitions collectively requesting *inter partes* review of claims 1, 2, 4, 6–12, 14, and 16–18 of U.S. Patent No. 8,014,394 B2 (Ex. 1001, “the ’394 patent”) pursuant to 35 U.S.C. § 311(a), and Patent Owner Portsmouth Network Corp. filed a Preliminary Response in each proceeding pursuant to 35 U.S.C. § 313, as shown in the following chart.¹

Case Number	Challenged Claims	Petition	Preliminary Response
IPR2024-00913	1, 2, 4, 6, 7, 11, 12, 14, 16, 17	Paper 2 (“Pet.”)	Paper 6 (“Prelim. Resp.”)
IPR2024-00989	8–10, 18	Paper 2 (“-989 Pet.”)	Paper 7 (“-989 Prelim. Resp.”)

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and any preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” See 37 C.F.R. § 42.4(a) (2023) (“The Board institutes the trial on behalf of the Director.”). For the reasons that follow, we institute an *inter partes* review as to claims 1, 2, 4, 6–12, 14, and 16–18 of the ’394 patent on all grounds of unpatentability asserted in the Petitions. To administer the proceedings more efficiently, we also exercise our authority under 35 U.S.C. § 315(d) to consolidate the two proceedings and conduct the proceedings as

¹ Unless otherwise noted with prefix “-989,” references herein are to the papers and exhibits filed in IPR2024-00913.

one trial. *See also* 37 C.F.R. § 42.122(a) (“Where another matter involving the patent is before the Office, the Board may during the pendency of the *inter partes* review enter any appropriate order regarding the additional matter including providing for the stay, transfer, consolidation, or termination of any such matter.”).

B. Related Matters

The parties indicate that the ’394 patent is the subject of parallel proceedings, *Portsmouth Network Corp. v. Cisco Systems, Inc.*, 2:23-cv-00441 (E.D. Tex.) (“the Cisco case”) and *Portsmouth Network Corp. v. Juniper Networks, Inc.*, 23-cv-12201-PGL (D. Mass) (“the Juniper case”). *See* Pet. 5; Paper 4, 2 (Patent Owner’s Mandatory Notices). Petitioner has also filed a petition challenging an unrelated patent asserted in the Juniper case. *See* IPR2024-00893, Paper 2. In addition, Cisco Systems, Inc. (“Cisco”) filed a petition challenging claims 1, 2, 4–12, and 14–18 of the ’394 patent, based upon which we instituted an *inter partes* review on October 3, 2024. *See* IPR2024-00506, Papers 2, 8.

C. The ’394 Patent

The ’394 patent, titled “High-Speed Processing of Multicast Content Requests,” issued September 6, 2011, from U.S. Application No. 12/369,011, filed on February 11, 2009. Ex. 1001, codes (21), (22), (45), (54). The ’394 patent relates to delivery of multicast traffic streams over a communication network through a “network element.” *Id.* at code (57). The goal of the ’394 patent is to enable the fast delivery of multicast content with minimal latency for processing events associated with changing the multicast forwarding configuration. *Id.* at 4:58–62.

More specifically, the ’394 patent describes:

Some multicast content applications are highly sensitive to the response time to change in the forwarding configuration. For example, in an Internet Protocol Television (IPTV) application, when a user switches (“zaps”) from one television channel to another, the user’s set-top box initiates a process of stopping to receive one multicast packet stream and starting to receive another multicast stream. The zapping time, i.e., the time from the moment the user switches the channel in his or her set-top box until the new channel is displayed, is determined by the time needed by the network to apply this forwarding change. Fast zapping time is particularly difficult to achieve when the rate of change requests is high, such as during a commercial break in which a large number of users switch channels almost simultaneously.

Embodiments of the present invention provide improved methods and systems for performing selective multicast forwarding in packet networks. The disclosed methods and systems are particularly effective in adapting rapidly to requests to change the multicast forwarding configuration.

Ex. 1001, 4:44–62.

The network element described in the ’394 patent to accomplish this is illustrated in Figure 1 which is reproduced below.

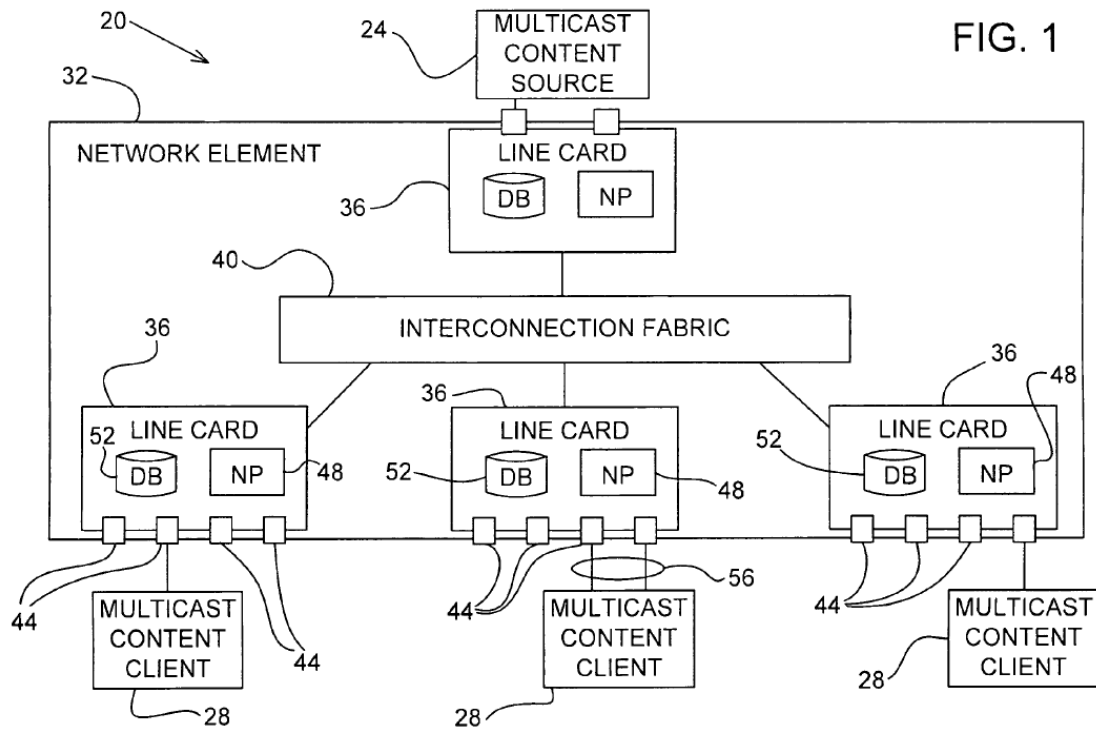


Figure 1 shows a network element 32, which processes communication packets received on its ports 44 from a packet network 20. Ex. 1001, 1:53–56, 5:57–64. The network element has line cards 36, each of which has an NP (network processor) 48, a database 52, and ports 44. *Id.* at 6:23–46. “The line cards are interconnected by an interconnection switch fabric 40.” *Id.* at 6:24–25. Once packets are received on a port in a line card, the corresponding network processor 48 responsible for that port processes them. *Id.* at 6:32–35. “Each line card 36 further comprises a filtering database 52, which holds a list of multicast streams that are permitted for forwarding by the network element” *Id.* at 6:35–38.

Figure 1 also shows a multicast content source 24, such as live IP Television (IPTV), connected to the top line card through its left port. Ex. 1001, 5:64–6:3. Three multicast content clients 28 are shown on the

bottom of Figure 1, one connected to each of the bottom three line cards. *Id.* at 6:4–6. “In an IPTV application, the multicast clients may comprise set-top boxes.” *Id.* at 6:15–17. For some multicast streams, “two or more ports 44 are aggregated to form a high-capacity port 56, in order to provide high traffic capacity and redundancy to a certain content client or content source.” *Id.* at 6:61–64. A common communication protocol used to broadcast and receive multicast streams is Internet Group Management Protocol (IGMP). *Id.* at 1:21–23.

“In order to avoid unnecessary congestion and processing load, network element 32 forwards multicast streams from source 24 to clients 28 selectively, rather than flooding . . . all ports.” Ex. 1001, 7:10–13. “For this purpose, filtering database 52 in each line card 36 holds a list of multicast streams, which are permitted for forwarding by the network element.” *Id.* at 7:13–16. “[T]he filtering databases also indicate the specific port or ports to which each permitted multicast stream is to be forwarded.” *Id.* at 7:16–18. “When the network element receives a given multicast stream from source 24, NP 48 in a given line card 36 forwards this stream to the designated ports only if the stream appears in its filtering database.” *Id.* at 7:18–21.

“The filtering databases in the different line cards are updated by monitoring request messages, which are sent by the multicast clients in order to start or stop receiving certain multicast content.” Ex. 1001, 7:23–26. Figure 2, which shows how the databases are updated when a request for new multicast content is received, is reproduced below.

FIG. 2

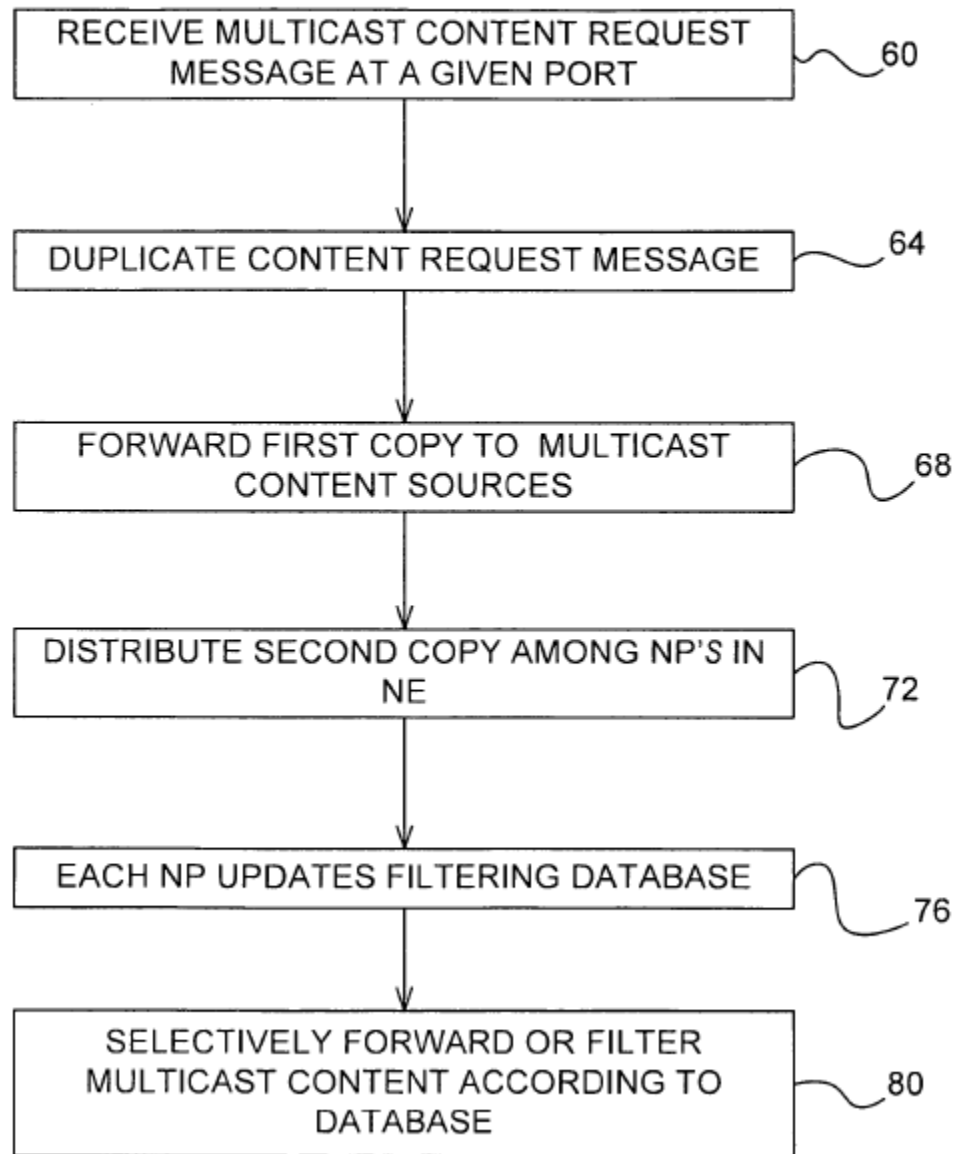


Figure 2 “is a flow chart that schematically illustrates a method for updating database 52 based on multicast content requests.” Ex. 1001, 7:27–29. As shown on the top of the flowchart, “network element 32 receive[s] a multicast content request message, at a request reception step 60.” *Id.* at

7:30–32. “The request is sent from a given multicast client 28, is addressed to a certain multicast source and arrives at one or [more] ports 44 of the network element.” *Id.* at 7:34–36. “The multicast content request may comprise, for example, a request to join a certain multicast service (i.e., to start receiving certain multicast content) or to leave a certain multicast service (i.e., to stop receiving certain multicast content).” *Id.* at 7:40–43. “For example, in an IPTV application, when a multicast client 28 (e.g., a set-top box) switches (‘zaps’) from one television channel to another, the client sends a request to stop receiving the content of the previous channel and to start receiving the content of the new channel.” *Id.* at 7:46–50.

Next, step 64 in the flowchart shows that the “line card duplicates the request.” Ex. 1001, 7:53. In step 68, “[t]he first copy of the request is forwarded to the appropriate multicast sources.” *Id.* at 7:54–55. At step 72, a “second copy of the request is forwarded to all the NPs in the network element.” *Id.* at 7:56–57. At step 76, “[e]ach NP receiving the distributed copy updates its respective database 52.” *Id.* at 7:63–64. “[T]he distributed copy comprises an indication of the ingress port, i.e., the port via which the request arrived at the network element.” *Id.* at 8:3–5. “If the request comprises a request to receive a certain multicast stream, the NPs update their filtering databases to permit forwarding of the request multicast stream . . . to [the ingress] port [of the request].” *Id.* at 8:9–18. “If the request comprises a request to stop receiving a certain multicast stream, the NPs remove the corresponding entry from their filtering databases.” *Id.* at 8:22–24. Finally, at step 80, “[t]he network element selectively forwards the incoming multicast streams in accordance with the updated filtering

databases,” i.e., by sending them out of the ingress port where the request came from which is now stored in the filtering databases. *Id.* at 8:25–27.

The ’394 patent also describes how limits can be placed on the number of streams allowed on a given port. Ex. 1001, 8:36–59. “In some embodiments, the network element allows only a limited number of multicast streams to be forwarded over any given port, so as not to exceed the maximum bandwidths of the ports. For example, a maximum allowed number of multicast streams may be set to each port.” *Id.* at 8:36–40. “In these embodiments, filtering databases 52 hold port counters, which are indicative of the number of multicast streams that are permitted for forwarding over each port” *Id.* at 8:41–45.

Typically, the port counter of a given port is initialized to the maximum allowed number of [multicast streams]. The counter is decremented when a new multicast stream is permitted for forwarding to the port, and is incremented when an existing multicast stream is removed from the port. Thus, a port counter that is equal to zero indicates that the maximum allowed number of streams have already been permitted for this port.

Id. at 8:51–58.

D. Illustrative Claim

Challenged claims 1, 8, 11, and 18 of the ’394 patent are independent. Dependent claims 2, 4, 6, and 7 depend from claim 1. Dependent claims 9 and 10 depend from claim 8. Dependent claims 12, 14, 16, and 17 depend

from claim 11. Claim 1 recites (with letter designations used in the Petition to refer to the various limitations):

1. [p] A method for communication, comprising:
 - [a.i] operating a network element, wherein the network element further comprises multiple interconnected processing units and multiple ports,
 - [a.ii] wherein each processing unit is assigned to a different subset of the multiple ports of the network element, and wherein each processing unit contains a processor for processing packets communicated over the different subset of the multiple ports to which the processing unit is assigned;
 - [b] storing in each processing unit a respective list, each list indicating all of one or more multicast packet streams that are permitted for forwarding by the network element, and further indicating which of the one or more ports each multicast packet stream is permitted to be forwarded to;
 - [c] receiving from a client a request relating to reception of a given multicast packet stream;
 - [d] distributing the request among the multiple processing units within the network element, and updating the respect list in each processing unit responsively to the request, and
 - [e] selectively forwarding multicast packets associated with the given multicast packet stream by the processing units in accordance with the respective updated lists,
 - [f] wherein operating the network element comprises aggregating two or more of the ports to form a high-capacity port, and
 - [g.i] wherein aggregating the ports comprises setting an upper limit on a number of the multicast packet streams that are permitted for forwarding over the high-capacity port,
 - [g.ii] wherein the request indicates that the given multicast packet stream is to be forwarded over the high-capacity port, and

[g.iii] wherein updating the list comprises modifying the list to indicate that the given multicast packet stream is permitted for forwarding over the high-capacity port only when the number of the multicast packet streams that are permitted for forwarding over the high-capacity port, including the given multicast packet stream, does not exceed the upper limit.

E. Evidence

Petitioner relies on the following prior art:

U.S. Patent No. 7,983,205 B1 (Ex. 1005, “Blease”);

U.S. Patent No. 8,068,416 B2 (Ex. 1007, “Hu”);

U.S. Patent No. 8,102,848 B1 (-989 Ex. 1024, “Rao”);

U.S. Patent Application Publication No. 2005/0041665 A1 (Ex. 1006, “Weyman”); and

U.S. Patent Application Publication No. 2009/0290585 A1 (Ex. 1008, “Deng”).

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1, 2, 4, 6–12, 14, and 16–18 would have been unpatentable on the following grounds:

Case Number	Claim(s) Challenged	35 U.S.C. §	References/Basis
IPR2024-00913	1, 2, 4, 6, 7, 11, 12, 14, 17	103(a) ²	Blease, Weyman, Hu
IPR2024-00913	16	103(a)	Blease, Weyman, Hu, Deng
IPR2024-00989	8, 18	103(a)	Blease, Weyman
IPR2024-00989	9	103(a)	Blease, Weyman, Hu

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the ’394 patent issued was filed before this date, the pre-AIA version of § 103 applies.

Case Number	Claim(s) Challenged	35 U.S.C. §	References/Basis
IPR2024-00989	10	103(a)	Blease, Weyman, Deng ³
IPR2024-00989	8, 18	103(a)	Blease, Weyman, Rao
IPR2024-00989	9	103(a)	Blease, Weyman, Rao, Hu
IPR2024-00989	10	103(a)	Blease, Weyman, Rao, Deng

II. PROCEDURAL CONSIDERATIONS

As an initial matter, Patent Owner argues that we should exercise discretion to deny the Petitions under § 314(a) in view of the Board’s precedential decisions in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”) and *General Plastic Industrial Co. v. Canon Kabushiki Kaisha*, Case IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential) (“*General Plastic*”). Prelim. Resp. 17–30. Petitioner argues that we should not. Pet. 66–68.

A. Discretionary Denial Under 35 U.S.C. § 314(a) — *Fintiv* Factors

Institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an [inter partes review (IPR)] proceeding.”); 35 U.S.C. § 314(a) (2018) (“The Director *may* not authorize an inter partes review to be instituted unless the Director determines that the

³ Petitioner lists this asserted ground as based on “Blease in view of Weyman and Deng” (-989 Pet. 7), but lists “Blease, Weyman, Hu, and Deng” (*id.* at 58) and “Blease in view of Chen, Hu, and Deng” (*id.* at 60) in the headings for the applicable section of the Petition. The section headings appear to be typographical errors, as Petitioner’s substantive arguments refer to modifying “the system of Blease and Weyman” based on Deng. *See id.* at 58–62.

information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” (emphasis added)).

The Board has held that the advanced state of a parallel district court action is a factor that may weigh in favor of denying a petition under § 314(a). *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019), 58 & n.2, *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>. We consider the following factors to assess “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding”:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Fintiv at 5–6. In evaluating these factors, we “take[] a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* at 6.

We also consider “several clarifications” made by the Director of the United States Patent and Trademark Office (“USPTO”). *See* USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation, 2 (June 21, 2022) (“Director’s Memo”), *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

Patent Owner argues that we should exercise our discretion to deny institution based on the Cisco case (which does not involve Petitioner) for *Fintiv* factors 2 and 3 and the Juniper case asserted against Petitioner for factors 1, 4, and 5.⁴ Prelim. Resp. 17–21. According to Patent Owner, the “trial in the related Cisco case is set to occur approximately 7 months before the projected statutory deadline for a final written decision,” which “weighs in favor of discretionary denial.” *Id.* at 18. Petitioner argues that we should decline to use our discretion to deny institution based on the applicability of the *Fintiv* factors in view of both cases. Pet. 66–68. Upon consideration of the relevant factors and the clarifications, which are discussed below, we decline to exercise our discretion to deny the Petition.

⁴ Patent Owner does not specifically identify the Juniper case in the section of its Preliminary Response arguing for discretionary denial under § 314(a) for *Fintiv* factors 4 and 5, instead referring to a “parallel district court proceeding,” but based on the arguments presented, it is clear that reference is to the Juniper case. Prelim. Resp. 19–21. Patent Owner argues that Petitioner failed to offer a stipulation for factor 4, and that Petitioner “is a defendant in a parallel district court proceeding” for factor 5. *Id.* Patent Owner must be relying on the Juniper case for those factors since neither of those arguments would be accurate with regard to the Cisco case where Petitioner is not a party.

First, we find no basis for exercising our discretion to deny institution with regard to the Juniper case because that case does not yet have a scheduling order in place, and, as Petitioner points out, the median time to trial in that district is 34.6 months, which puts the trial in approximately July 2026, so there is nothing in the record to indicate that a trial will occur before our deadline for a final written decision in these proceedings. *See Fintiv* at 5 (“When the patent owner raises an argument for discretionary denial under *NHK due to an earlier trial date*, the Board’s decisions have balanced [*Fintiv*] factors [1–6].” (emphasis added)); Pet. 67 (arguing that “the court has neither entered a schedule nor set a trial date”); Prelim. Resp. 18 (acknowledging that “the court has not yet entered a schedule or set a trial date for the Juniper case”).

Second, following submission of the papers in these proceedings, the Cisco case was dismissed on December 26, 2024. Ex. 3001. Accordingly, there will be no trial in the Cisco case and thus we are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking our authority under 35 U.S.C. § 314(a) to deny institution.

B. Discretionary Denial — General Plastic

Patent Owner also argues that Petitioner’s filing of two parallel petitions addressing the same patent places significant burdens on the Board and separately warrants denial, and that Petitioner’s filings also implicate our precedential decision *General Plastic* that warrant us denying institution of serial petitions in our discretion in view of Cisco’s earlier-filed petition in IPR2024-00506. Prelim. Resp. 23–30. For the following reasons, we disagree.

First, contrary to Patent Owner's assertion, we do not find that the filing of the two simultaneous petitions runs afoul of the admonition in the Patent Trial and Appeal Board's Consolidated Trial Practice Guide that "one petition should be sufficient to challenge the claims of a patent in most situations," and we instead accept Petitioner's explanation that extra words were needed to adequately address the different limitations in claims 8 and 18 that are addressed in the -989 Petition. Prelim. Resp. 24; Paper 3, 1 ("[T]he two petitions are pursued solely for word count purposes that preclude all claims from being challenged in [a] single petition."). The petitions do not address any overlapping claims, and while they do rely on overlapping prior art, the issues presented based on the limitations in the challenged claims are different. We are also consolidating the proceedings to maximize efficiency going forward.

Next, we address Patent Owner's argument related to the *General Plastic* factors. *General Plastic* sets forth a list of seven non-exclusive factors that the Board considers in determining whether to exercise discretion under § 314(a):

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;

5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

General Plastic at 9–10.

Petitioner filed both of its petitions in the instant proceedings on the same day, May 31, 2024, and the prior petition in IPR2024-00506 was filed by a different party previously sued for infringement of the '394 patent in a different district court case. Therefore, there are no serial petitions, as that term is used in *General Plastic*, filed in these IPRs. However, “our application of the *General Plastic* factors is not limited solely to instances when multiple petitions are filed by the same petitioner. Rather, when different petitioners challenge the same patent, we consider any relationship between those petitioners when weighing the *General Plastic* factors.”

Valve Corp. v. Elec. Scripting Prods., Inc., IPR2019-00062, Paper 11 at 9 (PTAB Apr. 2, 2019) (precedential).

Petitioner argues that “no significant relationship exists” between it and Cisco, as they were “accused of infringing the '394 patent with different products in different court proceedings . . . and have not coordinated regarding the '394 patent, the separately accused products, or the filing of petitions for IPR.” Pet. 70. Patent Owner provides no evidence of a significant relationship between Petitioner and Cisco, but nonetheless argues that factors 1–5 favor discretionary denial anyway, because Petitioner had knowledge of the Cisco petition, citing the Board’s decision in *Ericsson Inc.*

v. Uniloc 2017, LLC, IPR2019-01550, Paper 8 at 11–12 (PTAB Mar. 17, 2020) (“*Ericsson*”), for the proposition that Petitioner’s use of the Cisco petition as a roadmap ties the interests of the petitioners together. Prelim. Resp. 26. We are not persuaded by this assertion. First, *Ericsson* is not a precedential or informative decision and is not binding on us or informative to our analysis. Moreover, in that case there were five prior petitions that covered all of the challenged claims, and the petitioner admitted crafting its petition based on its review of the prior petitions. *Ericsson* at 3, 11.

Petitioner here has not made such a concession, and moreover, Patent Owner has not presented any evidence that Petitioner actually did use the petition in IPR2024-00506 as a roadmap. Under the circumstances, we find no evidence that Petitioner used the prior petition filed by Cisco as a roadmap, particularly when none of the timing associated with the prior petition was within its control.

We find no significant relationship between Petitioner and Cisco. “[W]here, as here, the first and second petitioners are neither the same party, nor possess a significant relationship under *Valve, General Plastic* factor one necessarily outweighs the other *General Plastic* factors.” *Videndum Prod. Sols., Inc. v. Rotolight Ltd.*, IPR2023-01218, Paper 12 at 6 (Vidal Apr. 19, 2024). Accordingly, based on the particular facts of these proceedings, including the points addressed above, we decline to exercise our discretion to deny the Petitions on that basis.

III. ANALYSIS

A. *Legal Standards*

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “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.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a) (2006)). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).⁵

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination based on a combination of references requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016).

“Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed

⁵ Additionally, “secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or non-obviousness, these inquiries may have relevancy.” *Graham*, 383 U.S. at 17–18. Here, however, the parties have not asserted at this stage of the proceeding that any such considerations are relevant, and we have no other evidence of such indicia currently before us.

invention.”” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); accord *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’”); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

B. Level of Ordinary Skill in the Art

Petitioner argues that at the time of the filing date of the ’394 patent (February 11, 2009), a person of ordinary skill in the art (POSITA) would have had

a bachelor’s degree in computer science, computer or electrical engineering, or a related field, and approximately two or more years of experience in computer and networking technology. Education could substitute for professional experience, and vice versa.

Pet. 13 (citing Ex. 1003 ¶¶ 74–82). Patent Owner does not dispute this assertion or present its own contention regarding the level of ordinary skill in the art. Based on the record presented, including our review of the ’394 patent and the types of problems and solutions described in the ’394 patent

and the cited prior art, we agree with Petitioner’s proposed definition of the level of ordinary skill for purposes of this Decision.

C. Claim Construction

We interpret each challenged claim

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b). Petitioner asserts that claim terms should be given their “ordinary and customary meaning as understood by a POS[IT]A in light of the specification and prosecution history.” Pet. 13. Patent Owner also states that it applies the ordinary and customary meaning to the ’394 patent’s claim terms and does not propose any express interpretations. Prelim. Resp. 5. In view of these positions, we find that no express interpretation of any claim term is necessary to determine whether to institute an *inter partes* review in this proceeding. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“Because we need only construe terms ‘that are in controversy, and *only to the extent necessary* to resolve the controversy,’ we need not construe [a particular claim limitation] where the construction is not ‘material to the . . . dispute.’” (citation omitted and emphasis added)).

D. Ground 1

Petitioner contends that claims 1, 2, 4, 6, 7, 11, 12, 14, and 17 are unpatentable as obvious over Blease in view of Weyman and Hu, citing the

testimony of Tal Lavian, Ph.D., as support. Pet. 14–62; Ex. 1003. Patent Owner opposes. Prelim. Resp. 10–16. We are persuaded that Petitioner has established a reasonable likelihood of prevailing on its asserted ground based on Blease in view of Weyman and Hu as to at least independent claims 1 and 11 for the reasons discussed below.

1. Blease

Blease is a U.S. patent titled “Outgoing Interface Mapping for Multicast Traffic.” Ex. 1005, code (54). Similar to the ’394 patent, Blease describes a “network device [that] transmits multicast traffic to [] subscriber devices.” *Id.* at code (57).

In particular, the network device may receive membership requests for a multicast group from the subscriber devices via the network switch on a first interface, i.e., a mapping interface. The network device sends a multicast stream associated with the multicast group to the network switch on a second interface, i.e. an outgoing interface (OIF). Upon receiving a membership request, the network device maps the membership request to an OIF dedicated to the multicast group. In this way, when multiple subscriber devices connected to the same switch request the same multicast stream, each membership request will map to the same OIF. The network device sends one copy of the multicast stream to the network switch on the dedicated OIF.

Id.

Figure 4 of Blease shows an example of such a network device, described as a router, and is set forth below.

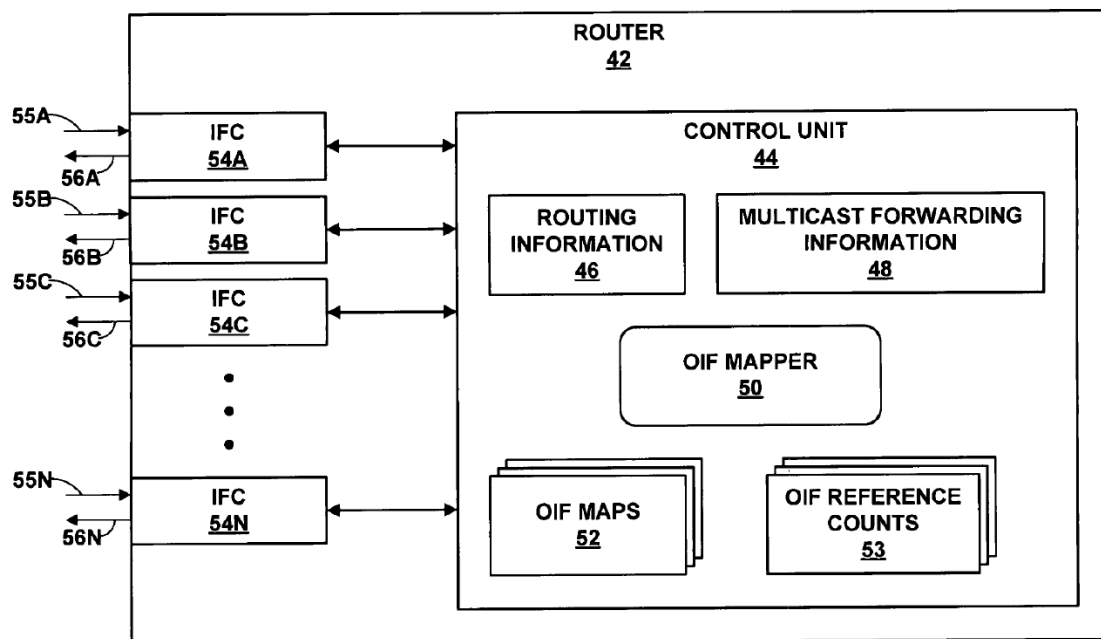


FIG. 4

Figure 4 shows “a block diagram illustrating an exemplary router 42 in accordance with an embodiment of the invention.” Ex. 1005, 8:39–40. “Router 42 may provide subscriber devices access to a network . . .” *Id.* at 8:43–44. “In general, router 42 is capable of receiving membership requests for multicast groups on a first interface and sending multicast streams associated with the multicast groups on a second interface that may be dedicated to a network switch servicing the subscriber device from which the requests may be received.” *Id.* at 8:46–52.

Blease describes how this is accomplished, stating that “[a]fter control unit 44 authenticates the user information an interface profile is created which may contain access filters to permit or deny the subscriber device from requesting certain multicast groups.” Ex. 1005, 9:11–14. “For example, the subscriber device may comprise a set-top box for IPTV. In that case, the requested multicast group . . . comprises an IPTV channel that a

subscriber wants to receive.” *Id.* at 9:14–17. “[R]outer 42 receives a membership request for a multicast group [] device via a network switch on an interface of one of IFCs 54.” *Id.* at 10:6–8. “OIF mapper 50 is capable of interfacing with the [multicast protocol] used to signal the membership request.” *Id.* at 10:14–15. “OIF mapper 50 identifies which of OIF maps 52 is configured for the mapping interface.” *Id.* at 10:20–22. Blease continues:

When the membership request matches an entry in the identified one of OIF maps 52, OIF mapper 50 maps the membership request to the OIF given in the identified OIF map. In this way, when two or more subscriber devices connected to the same network switch and request the same multicast stream, OIF mapper 50 maps both of the membership requests to the same OIF. If the identified one of OIF maps 52 contains no entries or if the OIF map configured for the mapping interface does not exist, OIF mapper 50 does not map any membership requests.

Id. at 10:39–48.

Once the mapping is finished, “OIF mapper 50 then accesses multicast forwarding information 48.” Ex. 1005, 10:49–50. “Multicast forwarding information 48 controls replication and forwarding of multicast packets to subscriber devices.” *Id.* at 10:50–52. “Control unit 44 updates multicast forwarding information 48 based on messages received from the subscriber devices that indicate a desire to join or leave multicast groups, i.e., to receive or stop receiving multicast streams.” *Id.* at 10:52–55.

“In response to a join request, OIF mapper 50 determines whether multicast forwarding information 48 indicates [whether the stream] is currently forwarded to the network switch, i.e., whether another subscriber device connected to the same network switch is currently receiving the requested multicast stream.” Ex. 1005, 10:55–61. If it is not, then “OIF

mapper 50 adds the mapped OIF to multicast forwarding information 48” and “initializes the one of OIF reference counts 53 associated with the mapped OIF.” *Id.* at 10:62–66. “If the multicast is already forwarded to the network switch, the entry in multicast forwarding information 48 remains unchanged. OIF mapper 50 increments a corresponding one of OIF reference counts 53” *Id.* at 10:67–11:3. “In this manner, OIF reference counts 53 keep track of the number of subscriber devices currently receiving the associated multicast streams for each OIF.” *Id.* at 11:5–6.

Once the membership is established, “when router 42 receives a multicast packet via one of inbound links 55, control unit 44 forwards the packet on a set of outbound links 56 in accordance with multicast forwarding information 48.” Ex. 1005, 8:64–67.

Blease also states that a server application using the invention “may aggregate output” into “a higher-speed uplink” to the network device. Ex. 1005, 4:24–26.

2. *Weyman*

Weyman is a U.S. patent titled “System and Method for Distributed Multicast Routing.” Ex. 1006, code (54). Similar to the ’394 patent, Weyman describes a “distributed router composed of individual units” which “appears to be a single network entity” for communicating multicast packets. *Id.* at code (57).

Figure 5 in Weyman illustrates a distributed router with multiple units and is reproduced below.

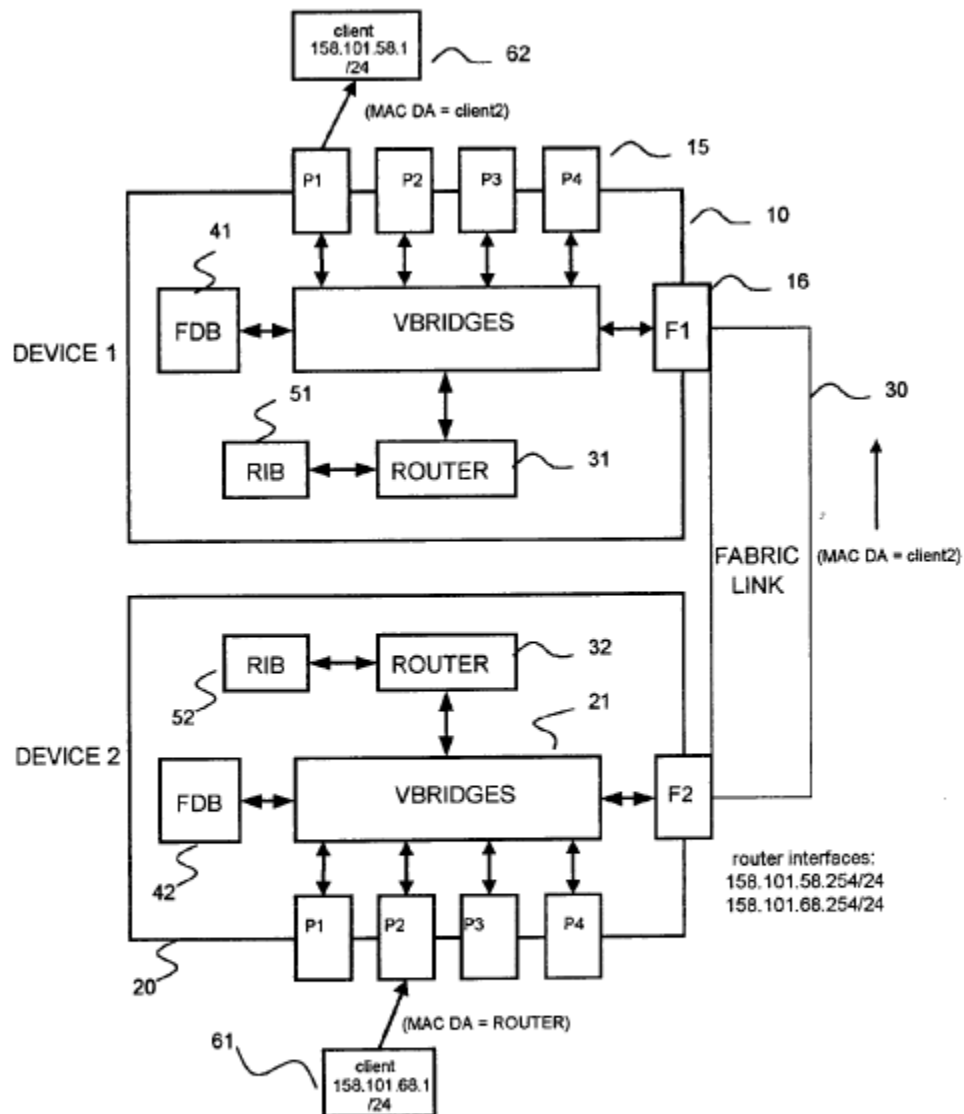


FIG.5

Figure 5 shows how two units, Device 1 (labeled 10) and Device 2 (labeled 20), are connected to each other by a Fabric Link 30 via ports F1 and F2 to form one distributed router. Ex. 1006 ¶ 64. Each unit (device) has four user ports P1–P4 (collectively labelled 15) that can connect to other devices in the network such as routers and clients. *Id.* Each unit also has a

bridge labelled Vbridge 21 and a forwarding database used by the bridge called a FDB, labelled 41 and 42 on devices 1 and 2, respectively. *Id.* Each bridge also has a router, labelled 31 and 32, and a router forwarding database called a RIB (router information base), labelled 51 and 52. *Id.* All of the individual routers in a distributed router have the same RIB that causes them to collectively operate as one distributed router. *Id.* ¶¶ 65–71; Ex. 1003 ¶¶ 65–66.

The distributed router can handle multicast streams. Ex. 1006 ¶¶ 65–71; Ex. 1003 ¶¶ 65–66. Figure 11 of Weyman helps illustrate how this works and is reproduced below.

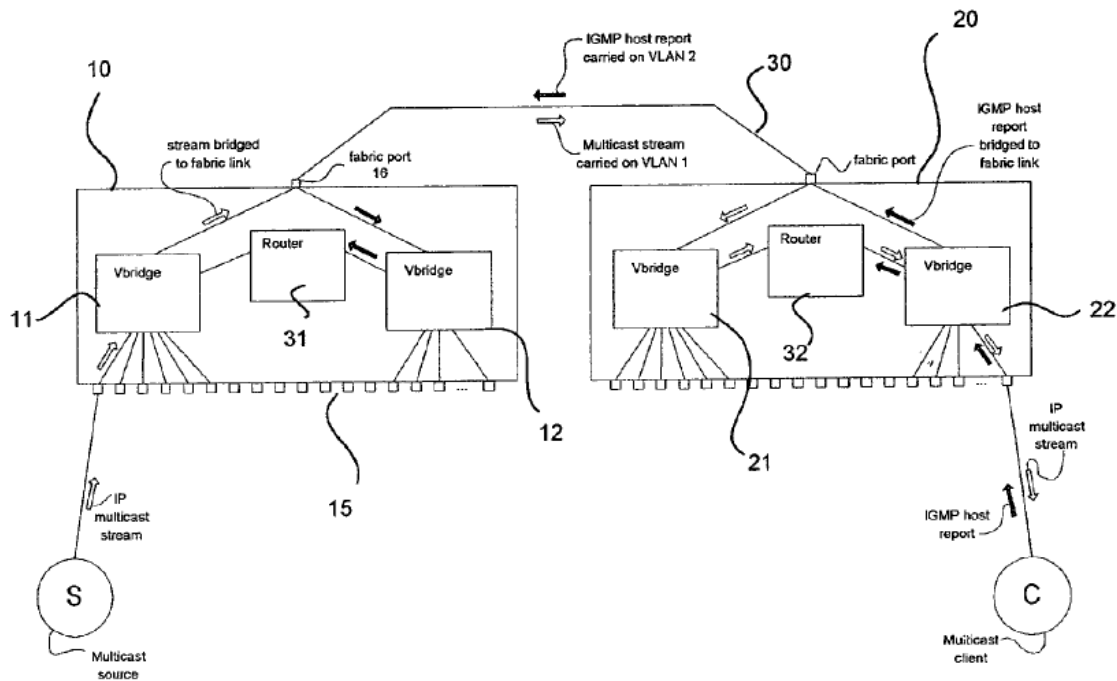


FIG.11

Figure 11 helps show how a multicast client, shown connected to the rightmost user port of unit 20, can request a multicast stream from the source

connected to the leftmost port in unit 10. Ex. 1006 ¶ 136. When client C wants to join the multicast stream, it sends a request, an IGMP report, to unit 20. *Id.* ¶¶ 137, 162. Unit 20 sends the request to its internal router 32 and also to the fabric port for forwarding to router 31 in unit 10. *Id.* Then “the router[s] in both units would snoop the IGMP report and would use the report in the construction of the multicast forwarding tables.” *Id.* ¶ 139. In this way, all router forwarding tables, RIBs, have the same entries. *Id.* ¶¶ 65, 162. The Vbridge forwarding databases, FDBs, are populated in a similar way from the addresses of the packets involved in the IGMP report request message. *Id.* ¶¶ 45–46. Once the forwarding information has been created, the Vbridges and routers will coordinate to deliver the multicast stream from the source to the client. *Id.* ¶¶ 103, 127.

Weyman also teaches that a unit’s ports can be combined to form an “aggregated link” in order to provide “resilience in a distributed router.” Ex. 1006 ¶¶ 50, 86. An aggregated link “comprises a multiplicity of physical connections [i.e., ports] constituting a single logical connection.” *Id.* ¶¶ 50, 88–89.

3. *Hu*

Hu is a U.S. patent titled “System and Method of Communicating a Media Stream.” Ex. 1007, code (54). Similar to Blease and Weyman, Hu discloses using communication devices to deliver multicast content. *Id.* at 2:13–19. In Hu, multicast streams are managed using a “Content Switch” which is illustrated in Figure 1, and is reproduced below.

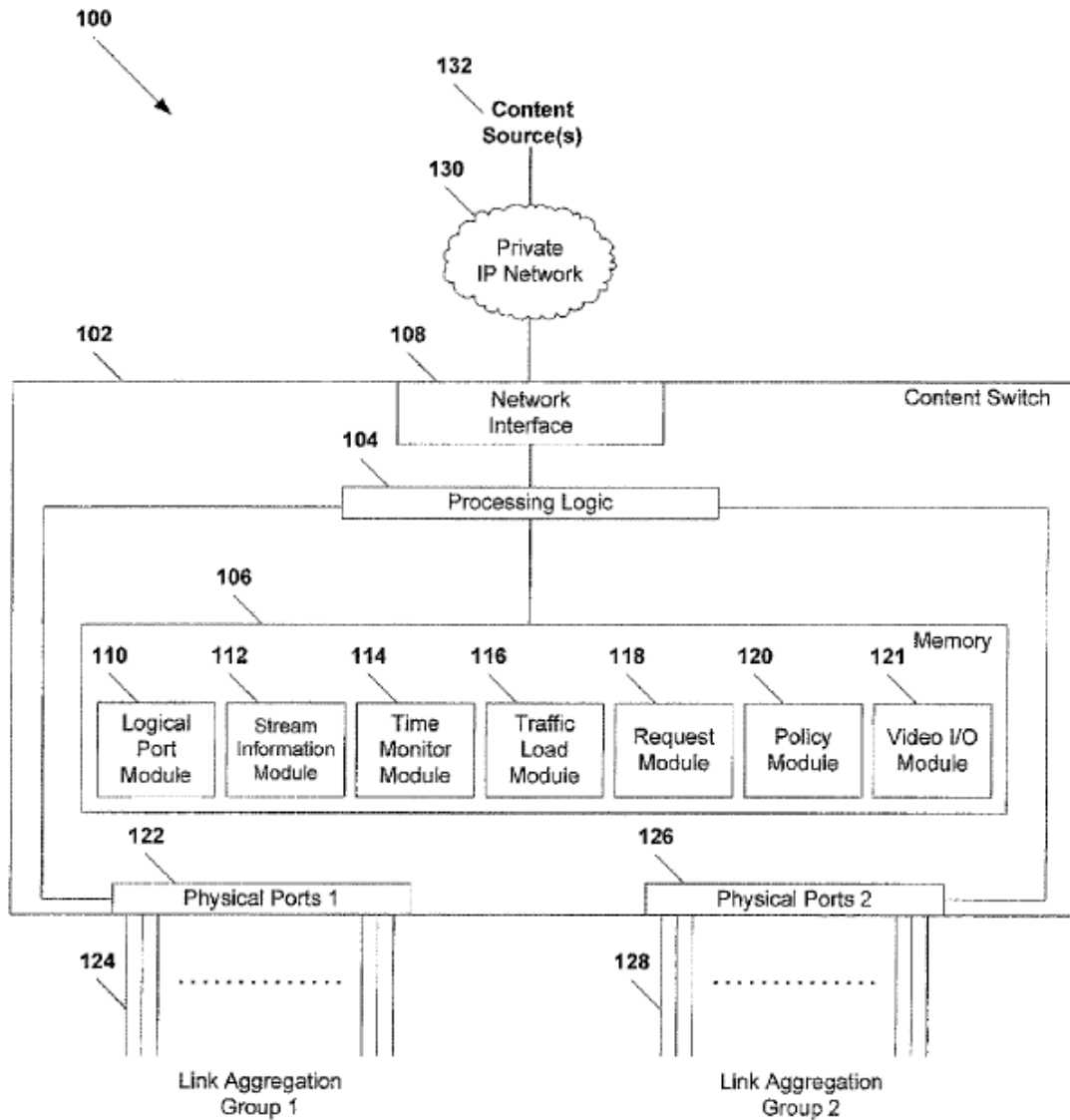


FIG. 1

Figure 1 shows a content switch 102, which “communicates with a plurality of content sources 132.” Ex. 1007, 2:62–63. “[C]ontent switch 102 can include processing logic 104” and “a network interface 108 to communicate with the private IP network 130.” *Id.* at 3:7–12. It can also

include “multiple physical ports, which may be logically grouped as illustrated by a first plurality of physical ports 122 and a second plurality of physical ports 126.” *Id.* at 3:12–16. “Each plurality of physical ports 122,[] 126 is associated with a link aggregation group and can be treated by the content switch 102 as a single logical port” *Id.* at 3:16–18. “A link aggregation group refers to a set or group of physical ports, such as the first plurality of physical ports 122, which are logically grouped to form a single logical port to provide the high-bandwidth link.” *Id.* at 3:23–26.

For example, the first plurality of physical ports 122 can be associated with a first link aggregation group 124 and can be treated by the content switch 102 as a first logical port. Similarly, the second plurality of physical ports 126 can be associated with a second link aggregation group 128 and can be treated by the content switch 102 as a second logical port.

Ex. 1007, 3:27–32.

In the embodiment shown in Figure 1, “the memory 106 can include a policy module 120 that stores data indicating threshold video traffic loads.” Ex. 1007, 5:14–16. “The policy module 120 can . . . compare the video data traffic load at each of the first plurality of physical ports 122 with a pre-defined threshold.” *Id.* at 5:16–19. “If video traffic loads at all of the first plurality of physical ports 122 exceed the pre-defined threshold, policy module 120 can . . . reject the request for the video stream.” *Id.* at 5:19–22. Alternatively, even if the traffic load exceeds the threshold, the “system determines whether an existing data stream can be dropped at any of the ports associated with the link aggregation group, such that a total traffic load at the port at which the existing data stream is dropped is lower than the pre-defined threshold.” *Id.* at 6:65–7:3. “If such a data stream can be dropped

. . . the requested video stream can be assigned to the port at which the existing data stream is dropped.” *Id.* at 7:3–6.

4. *Analysis of Claim 1*

Petitioner asserts that Blease in view of Weyman and Hu teaches or suggests all of the limitations of claim 1. Pet. 29–54.

Petitioner asserts Blease teaches the preamble, “[a] method for communication comprising,” by disclosing “a method for communication (*e.g.*, communicating traffic between a network, network devices and subscriber devices).” Pet. 29. Patent Owner does not dispute that Blease teaches this element. Prelim. Resp. 7–16. We agree that, based on the current record, Blease teaches the preamble, regardless of whether it is limiting. *See* Ex. 1005, code (57), 3:34–58, Figs. 1–3; Ex. 1003 ¶¶ 97–101.

a) *Limitation 1a.i — operating a network element, wherein the network element further comprises multiple interconnected processing units and multiple ports;*

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation and that a POSITA would have been motivated to combine Blease with the teachings in Weyman. *See, e.g.*, Pet. 31–36; Ex. 1005, 1:28–33, 2:15–22, 3:65–4:9, 8:39–67, 9:25–42, 10:6–13, 11:54–57; Ex. 1006 ¶¶ 122, 162, Fig. 10; Ex. 1003 ¶¶ 102–108. Petitioner contends that Blease teaches operating a router (router 42), which has interconnected interface cards (IFCs 54A–54N) and multiple ports (links 55A–55N and 56A–56N). *See* Pet. 31–32. Additionally, Weyman teaches “distributed control units for processing multicast traffic are interconnected by a fabric link for communication and are kept synchronized.” Pet. 33 (citing Ex. 1006 ¶¶ 122,

162, Fig. 10). According to Petitioner, a POSITA would have been motivated to apply these teachings of Weyman to Blease because they are in the same field and both relate to delivering multicast traffic, and Blease describes using routing information to forward multicast streams to subscribers but leaves to the POSITA how to implement specific configurations, while Weyman gives example implementations. Pet. 22–23. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation or that a POSITA would have been motivated to apply the teachings of Weyman to Blease.

b) Limitation 1a.ii — wherein each processing unit is assigned to a different subset of the multiple ports of the network element, and wherein each processing unit contains a processor for processing packets communicated over the different subset of the multiple ports to which the processing unit is assigned;

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease (alone or in view of Weyman) teaches this limitation by describing that each processing unit for processing packets (IFC 54A–54N) is assigned to multiple ports (inbound links 55A–55N and outbound links 56A–56N) in the router 42 shown in Figure 4. See Pet. 36–37; Ex. 1005, 8:39–67, 9:25–42, 10:6–13, Fig. 4; Ex. 1003 ¶¶ 109–111. Patent Owner does not dispute that Blease teaches this limitation.

c) Limitation 1b — storing in each processing unit a respective list, each list indicating all of one or more multicast packet streams that are permitted for forwarding by the network element, and further indicating which of the one or more ports each multicast packet stream is permitted to be forwarded to;

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See* Pet. 37–39; Ex. 1005, 6:62–63, 8:29–30, 8:64–67, 9:43–44, 10:49–61, 11:5–17, 11:34–57, 14:50–57; Ex. 1006 ¶¶ 106–116, 122–124, 160–162; Fig. 10; Ex. 1003 ¶¶ 66, 112–115. Petitioner contends Blease in view of Weyman teaches that the router includes OIF mapper 50 that uses and/or maintains multicast forwarding information 48 which is distributed among IFCs 54, with each list indicating the one or more streams permitted for forwarding and the one or more ports each stream is permitted to be forwarded to. Pet. 18–20, 37. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

d) Limitation 1c — receiving from a client a request relating to reception of a given multicast packet stream;

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease teaches this limitation. *See* Pet. 39–40; Ex. 1005, 1:48–61, 3:53–58, 8:53–67, 9:14–24, 10:6–12, 14:3–9, Fig. 6A (step 60); Ex. 1003 ¶¶ 116–118. Petitioner contends Blease teaches receiving a client request for a multicast stream, such as a membership request for an IPTV channel. Pet. 39 (citing Ex. 1005, 9:14–24, 10:6–12, 14:3–5). Patent Owner does not dispute that Blease teaches this limitation.

e) Limitation 1d — distributing the request among the multiple processing units within the network element, and updating the respective list in each processing unit responsively to the request; and

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See* Pet. 41–44; Ex. 1005, 6:62–7:2, 10:12–13, 14:10–20, 8:29–38, 11:34–45, Fig. 4; Ex. 1003 ¶¶ 119–128. Petitioner contends Blease in view of Weyman teaches that the request is distributed among multiple processing units (“forwarding the request to control units 44 distributed across IFCs 54, which determines multicast forwarding information 48 to be updated at each IFC 54”), and the respective list in each processing unit is updated in response to the request (“the multicast forwarding information 48 is updated to include the identity of the interface that received the request”). Pet. 40–41 (citing Ex. 1003 ¶¶ 119–128). Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

f) Limitation 1e — selectively forwarding multicast packets associated with the given multicast packet stream by the processing units in accordance with the respective updated lists,

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease teaches this limitation. *See* Pet. 44–45; Ex. 1005, 8:64–67, 10:49–52, 14:50–57, Fig. 6B; Ex. 1003 ¶¶ 129–131. Petitioner contends Blease teaches that once the forwarding tables are updated, the multicast streams will only be forwarded in accordance with those tables (“the multicast stream is pushed to a network switch over the mapped OIF that was mapped by OIF mapper 50 in multicast forwarding

information 48”). Pet. 44. Patent Owner does not dispute that Blease teaches this limitation.

g) Limitations If and Ig.i — wherein operating the network element comprises aggregating two or more of the ports to form a high-capacity port, and wherein aggregating the ports comprises setting an upper limit on a number of the multicast packet streams that are permitted for forwarding over the high-capacity port,

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Hu teaches these limitations and that a POSITA would have been sufficiently motivated to combine Blease in view of Weyman with Hu and have a reasonable expectation of success in doing so. *See* Pet. 45–54; Ex. 1005, 3:10–32, 4:24–27, 5:13–22, 5:30–6:3, 6:39–7:8, 13:9–10; Ex. 1007, 3:10–32; Ex. 1003 ¶¶ 132–140. Petitioner asserts that Hu teaches “aggregating ports 122, 126 of a switch to form LAGs 124, 128 that each provide high-bandwidth links.” Pet. 46 (citing Ex. 1007, 3:10–32, which refers to the ports on switch 102 in Fig. 1). Also, Petitioner argues that Hu teaches setting an upper limit on the number of multicast streams that are permitted for forwarding over the port. Pet. 48 (citing Ex. 1007, 3:10–32). Petitioner also asserts that a POSITA would have been motivated to apply this teaching from Hu to the router described in Blease in order to maintain and avoid degradation of the “quality of service.” Pet. 27 (citing Ex. 1003 ¶¶ 93–94). Petitioner also points out that Blease teaches aggregating outputs into a higher speed link to a network device. Pet. 46 (citing Ex. 1005, 4:24–27).

Patent Owner disputes that Blease teaches aggregation of ports described as in the claimed network element (the router), and asserts that the

port aggregation in *Blease* does “not even concern forwarding multicast traffic streams over a high-capacity port.” Prelim. Resp. 12. According to Patent Owner:

Blease discloses aggregating outputs (e.g., membership requests) from a network switch or subscriber device to a network device (e.g., a router) and not to the end users who request multicast traffic. See E[x.]1005, 4:24–27. *Blease* elaborates that its aggregated output forms an uplink to network device 4 and thus does not operate to allow for the forwarding of multicast packet streams to multicast content recipients. Indeed, the aggregated output described in *Blease* travels towards the network device 4 opposite the direct that multicast content should go, namely towards the subscriber device. Therefore, it is clear that *Blease*’s aggregation does not aggregate two or more ports and is not related to the transmission of multicast packet streams.

Id. at 12–13.

Patent Owner also disputes that a POSITA would have been motivated to modify *Blease*’s “router links to include aggregated ports that form one or more high capacity ports” based on *Hu*. Prelim. Resp. 13. According to Patent Owner, a POSITA would not combine *Blease* with *Hu* because

[c]ontrary to Petitioner’s assertions, *Blease*’s disclosure is clear that the focus of its multicast techniques is to *reduce*, not increase, the amount of multicast traffic flowing through the network. For example, *Blease* discloses that ‘[t]he multicast transmission techniques described herein may *significantly reduce the amount of multicast traffic* between network device 4 and network switches 6.’ E[x.]1005, 4:50–52 (emphasis added). *Blease* seeks to limit the amount of multicast traffic flow in the network, which is precisely the opposite of the purported benefit of implementing *Hu*’s high-capacity ports.

Therefore, *Blease* actually teaches away from utilizing *Hu*'s link aggregation groups.

Prelim. Resp. 14.

Patent Owner also takes issue with Petitioner arguing that a POSITA would have been motivated to combine *Blease* with *Hu* because “*Blease* already discloses aggregating outputs to create high-speed links.” Prelim. Resp. 14 (quoting Pet. 28). According to Patent Owner, “[a]lthough the cited portion of *Blease* mentions aggregating an output, *Blease* is clear that the aggregation is not for a high-capacity port allowing transmission of multicast traffic to subscriber devices.” Prelim. Resp. 15. Rather, according to Patent Owner, *Blease* discloses “aggregating forwarding membership requests to a network device rather than aggregating ports to form a high-capacity port.” *Id.* (citing Ex. 1005, 5:52–55).

Based on the current record, we find that Petitioner has made a sufficient showing that a POSITA would have been motivated to apply *Hu*'s concept of aggregating ports to form a high-capacity port for transmitting multicast streams to the network device disclosed by *Blease*, and we do not agree that *Blease* teaches away from incorporating such aggregation. Both *Blease* and *Hu* are directed to similar subject matter, processing multicast stream requests, and *Hu*'s link aggregation addresses the problem of potentially overloading a port when doing so. *See, e.g.*, Ex. 1005, code (57) (“The network device transmits multicast traffic to the subscriber devices.”); Ex. 1007, claim 17 (“A network device to allocate media streams . . .”), 1:20–29 (disclosing that, if “insufficient bandwidth [is allocated] to video streams, the quality of service degrades”); *see Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380–81 (Fed. Cir. 2023) (“That [two prior art

references] address the same problem and that [one of the references] was a known way to address that problem is precisely the reason that there's a motivation to combine under *KSR* and our precedent.”).

On this record, we are persuaded that applying Hu's port aggregation teaching to Blease's router would be the application of a known technique to improve the router to allow it to provide multicast streams that require higher bandwidth with predictable results. Pet. 28; *see KSR*, 550 U.S. at 415–21. As pointed out by Petitioner, these two concepts could be combined together in a straightforward manner and applied to streams that require high-capacity ports, a technique already applied elsewhere in Blease to other ports, so a POSITA would have had a reasonable expectation of success in doing so. Pet. 28–29; Ex. 1003 ¶¶ 93–94; *see Elekta Ltd. v. Zap Surgical Sys., Inc.*, 81 F.4th 1368, 1377 (Fed. Cir. 2023) (“Evidence of reasonable expectation of success, just like evidence of a motivation to combine, ‘may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or in some cases, from the nature of the problem to be solved.’”) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000)).

On this record, we are unpersuaded by Patent Owner's argument that Blease teaches away from using aggregated ports to form a high-capacity link because “*Blease's* disclosure is clear that the focus of its multicast techniques is to *reduce*, not increase, the amount of multicast traffic flowing through network.” Prelim. Resp. 14. The discussion in Blease of minimizing the bandwidth does not relate to restricting the bandwidth required for a particular stream as Patent Owner seems to assert, but rather to eliminating duplicate transmissions of the same multicast stream to be

delivered to multiple subscribers. *See* Ex. 1005, 2:39–42, 4:50–56 (“The multicast transmission techniques described herein may significantly reduce the amount of multicast traffic For example, regardless of the number of subscriber devices[] connected to the same network switch that request the same multicast stream, [the] network device[] only sends one copy of the multicast stream to the network switch.”). Therefore, aggregating ports to accommodate transmission of a single multicast stream that requires more bandwidth is a different concept that is unrelated to the discussion in Blease about minimizing bandwidth by increasing efficiency.

Finally, Patent Owner does not dispute that Hu teaches aggregating ports to form a high-capacity port, and setting an upper limit on the number of multicast streams that are permitted over the high-capacity port, and for the reasons cited by the Petitioner, based on the current record, we find that it does.⁶

⁶ It is not clear whether Petitioner is also arguing that Blease alone teaches aggregating ports to form a high-capacity port as required by these limitations, as an alternative argument. *See* Pet. 26. Patent Owner refutes that it does because the port aggregation described by Blease relates to the request for the multicast stream rather than delivery of the stream by the router. Prelim. Resp. 12–13. Since we find, based on the current record, that Hu teaches aggregating ports to form a high-capacity port, and that a POSITA would have been motivated to combine that teaching with the router in Blease, we do not need to make a finding at this time about whether Blease, on its own, teaches these limitations.

h) Limitation 1g.ii — wherein the request indicates that the given multicast packet stream is to be forwarded over the high-capacity port, and

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Hu teaches this limitation. *See* Pet. 51; Ex. 1007, 4:14–30, 6:10–78; Ex. 1003 ¶¶ 141–143. Petitioner contends that for the reasons set forth for limitations 1c–1e, Blease teaches that the port on which the request is received will be the port that forwards the multicast stream. Pet. 51. Furthermore, Petitioner argues that such a port can be a high-capacity port as taught in Hu. *Id.* (citing Ex. 1007, 4:14–40, 6:10–7:8). Patent Owner does not dispute that Blease in view of Hu teaches this limitation.

i) Limitation 1g.iii — wherein updating the list comprises modifying the list to indicate that the given multicast packet stream is permitted for forwarding over the high-capacity port only when the number of multicast packet streams that are permitted for forwarding over the high-capacity port, including the given multicast packet stream, does not exceed the upper limit.

Based on the current record, we are persuaded that Petitioner has shown sufficiently that the combination of Blease in view of Hu teaches this limitation, for similar reasons to those discussed above with respect to limitations 1f and 1g.i, because a POSITA would have been motivated to combine Hu’s port control with Blease’s distributed router to implement an upper limit on the number of multicast streams permitted on a port. *See* Pet. 51–54. Patent Owner does not dispute that Blease in view of Hu teaches this limitation.

5. *Conclusion Regarding Ground 1*

Based on the current record, we find that Petitioner has demonstrated a reasonable likelihood of prevailing for claim 1. Petitioner also contends that claim 11, which is an apparatus claim for a network element that otherwise has similar limitations as claim 1, is rendered obvious for the same reasons discussed above for claim 1. Pet. 57–61. Patent Owner opposes Petitioner’s arguments for claim 11 for the same reasons as discussed above for claim 1. Prelim. Resp. 10–16. Based on the current record, we also find Petitioner has demonstrated a reasonable likelihood of prevailing for claim 11. We need not determine at this time whether Petitioner has demonstrated a reasonable likelihood of prevailing as to dependent claims 2, 4, 6, 7, 12, 14, and 17, also challenged in Ground 1. 37 C.F.R. § 42.108(a).

E. *Ground 2*

Petitioner contends that claim 16 is unpatentable as obvious over Blease in view of Weyman, Hu and Deng, citing the testimony of Dr. Lavian as support. Pet. 62–66; Ex. 1003 ¶¶ 160–168. Claim 16 depends from claim 11 and adds:

wherein the processing units are configured to track a use of a permission to forward a certain multicast packet stream over a certain port by monitoring requests relating to the certain multicast packet stream that are received at the network element, and to remove the permission from the respect lists responsively to determining that the permission is aged.

1. *Deng*

Deng is a patent application titled “Data Link Layer Switch [w]ith Multicast Capability.” Ex. 1008, code (54). Deng teaches a switch that is used with multicast streams. *Id.* at code (57). In Deng, requests to join a multicast group are stored in a multicast address table, and a timer is started.

Id. ¶¶ 18, 31, 35–36. When the timer expires, the address is removed from the table. *Id.* ¶ 36. In this way, the multicast address table is kept up to date so that packets will only be sent to the hosts that have currently joined a multicast group. *Id.* ¶ 17.

2. *Claim 16*

Petitioner contends that Deng teaches the additional limitation in claim 16 and that a POSITA would have been motivated to apply the teachings in Deng to the router disclosed in Blease as modified in view of Weyman and Hu. Pet. 62–66. According to Petitioner, “Hu’s teachings ‘may compare statistics to various statistical thresholds’ but otherwise leave[] to the POS[IT]A what statistics or conditions to monitor for dropping existing streams. Deng teaches use of a particular policy to automatically drop streams: to track multicast addresses and remove them after expiration of a timer” Pet. 64–65 (citations omitted). Accordingly, Petitioner argues “[a] POS[IT]A would have been motivated to modify Blease, Wayman, and Hu to track requests and forwarded multicast streams based on” Deng’s teaching “in order to provide a simple time-based method for maintaining sufficient bandwidth and overhead for streams thereby, increasing the quality of service of multicast streams.” Pet. 65 (citations omitted).

Based on the current record, we agree with Petitioner that the timer scheme in Deng teaches the additional limitation in claim 16, and therefore we are persuaded that Petitioner has shown sufficiently that the combination of Blease in view of Weyman, Hu, and Deng teaches the limitation of claim 16. Pet. 63–64. Patent Owner does not dispute that Deng teaches the additional limitation in claim 16 or that a POSITA would have been

motivated to apply the teachings in Deng to the router in Blease in view of Weyman and Hu.

F. Grounds 1 and 4 in the -989 Petition

For Ground 1 of the -989 Petition, Petitioner asserts that Blease in view of Weyman teaches or suggests all of the limitations of claims 8 and 18, rendering them obvious under § 103. -989 Pet. 20–49. Ground 4 is also a § 103 argument against claims 8 and 18 and relies on the same arguments as Ground 1, but Petitioner also asserts an additional reference, Rao, with respect to limitations 8f.ii and 18d.ii, “deactivating the ports to which the new processing unit is assigned.” -989 Pet. 62–66. Patent Owner disputes that the combination teaches limitations 8f.ii and 18d.ii for both Grounds 1 and 4. -989 Prelim. Resp. 10–16.

We have questions as to Ground 1, specifically whether just Blease in view of Weyman (without the Rao reference) teaches or suggests limitations 8f.ii and 18d.ii, but do find, based on the current record, that Petitioner has shown a reasonable likelihood of prevailing on Ground 4 for claims 8 and 18 in view of the additional Rao reference as discussed below. Therefore, we decline to make a finding on Ground 1 at this time, and instead proceed with an analysis of Ground 4 below.⁷

⁷ Ground 2 of the -989 Petition addresses claim 9 which depends from claim 8. Ground 3 addresses claim 10 which depends from claim 8. Both of these grounds rely on Ground 1 for the analysis of independent claim 8, and therefore, because we do not currently make a determination as to Ground 1, we also decline to address Grounds 2 and 3 which rely on it. Grounds 5 and 6 address claims 9 and 10, respectively, and rely on Ground 4 instead of Ground 1 for independent claim 8, and we address both those grounds below.

1. Rao

Rao is a U.S. patent titled “Multicast High Availability Enhancements for Faster Convergence.” -989 Ex. 1024, code (54). It relates to “multicast data packet forwarding internal to a router switch, and more particularly to router management failover behaviors for multicast data packets.” -989 Ex. 1024, 1:8–11. Rao teaches a method for switching to a standby card when a card in a router that is forwarding multicast data fails. *Id.* at 9:3–17. This involves querying “IGMP hosts” to solicit routing information for the multicast streams and starting a “delay timer.” *Id.* Once all the responses have been received, or if the delay timer runs out, the old route entries from the card being replaced are pruned, thereby ensuring that the entries in the replacement card are current. *Id.* at 9:47–65. Once this process finishes, the replacement card is activated and begins forwarding multicast data. *Id.* at 9:57–59, 11:20–22, 11:29–32, 11:33–44; -989 Ex. 1003 ¶¶ 75–76, 174.

2. Analysis of Claims 8 and 18

Petitioner asserts Blease teaches the preamble, “[a] method for communication comprising,” by disclosing “a method for communication (*e.g.*, communicating traffic between a network, network devices and subscriber devices).” -989 Pet. 27 (emphasis omitted). Patent Owner does not dispute that Blease teaches this element. Prelim. Resp. 13–16. We agree that, based on the current record, Blease teaches the preamble, regardless of whether it is limiting. *See* -989 Ex. 1005, code (57), 3:34–58, Figs. 1–3; -989 Ex. 1003 ¶¶ 99–101.

a) Limitation 8a.i — operating a network element, wherein the network element further comprises multiple interconnected processing units and multiple ports;

Based on the current record, for the same reasons discussed above for limitation 1a.i, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation, and that a POSITA would have been motivated to combine Blease with the teachings in Weyman. *See, e.g.,* -989 Pet. 29–34; -989 Ex. 1005 1:28–33, 2:15–22; 3:65–4:9, 8:39–67, 10:6–13; -989 Ex. 1006 ¶¶ 122, 162, Fig. 10; -989 Ex. 1003 ¶¶ 103–109. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation or that a POSITA would have been motivated to apply the teachings of Weyman to Blease.

b) Limitation 8a.ii — wherein each processing unit is assigned to a different subset of the multiple ports of the network element, and wherein each processing unit contains a processor for processing packets communicated over the different subset of the multiple ports to which the processing unit is assigned;

Based on the current record, for the same reasons discussed above for limitation 1a.ii, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.,* -989 Pet. 34–35; -989 Ex. 1005, 8:39–67, 9:25–42, 10:6–13, Fig. 4; -989 Ex. 1003 ¶¶ 110–112. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

c) Limitation 8b — storing in each processing unit a respective list, each list indicating all of one or more multicast packet streams that are permitted for forwarding by the network element, and further indicating which of the one or more ports each multicast packet stream is permitted to be forwarded to;

Based on the current record, for the same reasons discussed above for limitation 1b, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.,* -989 Pet. 35–37; -989 Ex. 1005, 8:64–67, 9:43–44, 10:49–61, 14:50–57; Fig. 4; -989 Ex. 1003 ¶¶ 113–116. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

d) Limitation 8c — receiving from a client a request relating to reception of a given multicast packet stream;

Based on the current record, for the same reasons discussed above for limitation 1c, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.,* -989 Pet. 37–38; -989 Ex. 1005, 3:53–58, 8:53–67, 9:14–24, 10:6–12, 14:3–5; -989 Ex. 1003 ¶¶ 117–118. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

e) Limitation 8d — distributing the request among the multiple processing units within the network element, and updating the respective list in each processing unit responsively to the request; and

Based on the current record, for the same reasons discussed above for limitation 1d, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.,* -989 Pet. 38–42; -989 Ex. 1005, 5:38–50, 6:62–7:3, 8:29–38, 9:14–24, 10:12–13, 11:34–

45, 11:54–57, 14:10–20, Fig. 4; -989 Ex. 1003 ¶¶ 120–129. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

f) Limitation 8e — selectively forwarding multicast packets associated with the given multicast packet stream by the processing units in accordance with the respective updated lists,

Based on the current record, for the same reasons discussed above for limitation 1e, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.*, -989 Pet. 42–43; -989 Ex. 1005, 8:47–67, 10:49–61, 14:50–57, Fig. 6B (step 82); -989 Ex. 1003 ¶¶ 130–132. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

g) Limitation 8f.i — wherein operating the network elements comprises initializing a new processing unit added to the network element by:

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman teaches this limitation. *See, e.g.*, -989 Pet. 43–44; -989 Ex. 1006 ¶¶ 69, 156; -989 Ex. 1003 ¶¶ 133–135. Petitioner asserts that Weyman teaches adding a processing unit to the router which includes updating the new unit’s configuration and that a POSITA would have been motivated to apply this to the router in Blease. -989 Pet. 43–44. Patent Owner does not dispute that Blease in view of Weyman teaches this limitation.

h) Limitation 8f.ii — deactivating the ports to which the new processing unit is assigned; while the ports to which the new processing unit is assigned are deactivated, sending a multicast status request, receiving multicast membership reports sent by multicast clients in response to the multicast status request, constructing the list by the new processing unit based on the received multicast membership reports; and after constructing the list, activating the ports to which the new processing unit is assigned.

Based on the current record, we are persuaded that Petitioner has shown sufficiently that Blease in view of Weyman and Rao teaches this limitation. *See, e.g.*, -989 Pet. 44–45, 62–66; -989 Ex. 1006 ¶¶ 69, 156; -989 Ex. 1003 ¶¶ 75, 76, 133–135, 174, 175; -989 Ex. 1024, 9:3–65, 11:20–22, 11:29–44. Petitioner asserts that Weyman teaches that when adding a new unit to the router, updating the newly added unit’s configuration involves sending a multicast status request (sending query messages to determine client multicast group membership) and then maintaining a multicast distribution tree based on the responses. -989 Pet. 44 (citing -989 Ex. 1006 ¶¶ 160–162). Furthermore, according to Petitioner, Rao teaches initializing a new card by querying IGMP hosts and starting a timer, and once the timer runs out, pruning the old entries from the card being replaced, and then activating the card, and a POSITA would have been motivated to apply this to the router in Blease implemented with Weyman’s teachings. -989 Pet. 62–66.

Petitioner also asserts that a POSITA would have been motivated to combine Rao with Blease and Weyman because they are all in the same field and all relate to using a router for multicast data packet processing and forwarding. -989 Pet. 63–64. Furthermore, Petitioner alleges, a “POS[IT]A

would have been motivated to look to known implementation procedures, such as those taught by Rao, in implementing the procedure of adding a processing unit to a router, as taught by Blease and Weyman.” -989 Pet. 64. Petitioner asserts that this modification involves “the use of a known technique (*e.g.*, Rao’s teachings of querying memberships and updating tabled prior to activation) to improve similar devices (*e.g.*, improving Blease’s router 42 by initializing a new processing unit) in the same way (*e.g.*, to initialize the processing unit according to the current multicast state).” *Id.* at 65–66.

Patent Owner argues that Petitioner failed to show a POSITA would have been motivated to combine Rao with Blease and Weyman and also disputes that Petitioner has shown that Rao teaches deactivating the ports on the new card before initialization. -989 Prelim. Resp. 13–16. According to Patent Owner, “[a]lthough *Rao* discloses that new multicast entries should be internally consistent, *Rao*’s disclosure is within the specific context of establishing a new master [route processor manager (RPM)] when a failover occurs using a standby RPM, which is not disclosed in either *Blease* or *Weyman*.” *Id.* at 14. Furthermore, Patent Owner contends, “Petitioner’s argument that a POS[IT]A would rely on *Rao* for additional details fails in view of Petitioner’s acknowledgment that *Rao* does not even explicitly disclose deactivating ports to which a new processing unit is assigned.” *Id.* at 15.

Patent Owner goes on to argue that Petitioner's assertions regarding Rao should be "viewed with skepticism" because they are inconsistent as follows:

For example, Petitioner states that "Rao explicitly teaches that the initialization of a processing unit for multicast packet routing takes the steps of deactivating the ports" Yet Petitioner also states that "*Rao* does not explicitly state to first 'deactivat[e] the ports to which the new processing unit is assigned.'" Petitioner's statements highlight the weakness of Petitioner's own arguments. Even though Petitioner asserts that *Rao* discloses certain implementation details regarding limitation 8[f.ii] and 18[d.ii], Petitioner is forced to admit that such detail does not actually exist. . . . Petitioner's statements regarding *Rao* are contradictory and unreliable, and *Rao* itself does not disclose what Petitioner claims.

-989 Prelim. Resp. 15 (citations omitted).

Notwithstanding Patent Owner's arguments, we are persuaded, based on the current record, that a POSITA would have been motivated to combine the teaching from Rao with the router system of Blease in view of Weyman. *See* -989 Pet. 63–64; -989 Ex. 1005, 11:34–45, 11:53–57; -989 Ex. 1006 ¶¶ 69, 122, 156, 159–162; -989 Ex. 1024, 1:7–2:67, 6:10–22, 9:66–10:7, 11:20–22, 11:29–44; -989 Ex. 1003 ¶ 167. As described by Petitioner, all three references relate to very similar subject matter and all disclose network devices used for processing requests for multicast streams and providing those streams. *See Intel*, 61 F.4th at 1380–81. Furthermore, Weyman describes adding new cards to the distributed router, stating "when a unit with a default configuration joins the fabric, it needs to update its configuration to that of the distributed router." -989 Ex. 1006 ¶ 69. Weyman continues, "[i]f a unit with a non-default configuration joins the fabric then there should be a selection mechanism which determines the

distributed router's configuration.” *Id.* As Petitioner points out, Weyman does not describe in detail how this configuration would be accomplished, so a POSITA would look to Rao, which does. -989 Pet. 64–65; *see also* -989 Ex. 1003 ¶¶ 169, 175.

We also are persuaded, based on the current record, that Petitioner has sufficiently shown that Rao teaches this limitation. Rao teaches initializing a new card (processing unit) called a route processor manager (RPM) card when added to the router using a query and a timer. -989 Ex. 1024, 9:3–65, 11:20–22, 11:29–44. The query elicits responses from the multicast clients that are used to update the list, and the timer is used as a countdown for when to purge any old list entries that are still on the card and activate the ports. *Id.* at 9:18–65, Fig. 4. Patent Owner argues that Rao does not disclose “deactivating the ports to which the new processing unit is assigned” because that is not explicitly described in the cited portions. -989 Prelim. Resp. 13–16. On the current record, we are unpersuaded by this argument in view of Rao describing how the new card “activat[es] the internal path IP multicast forwarding information for data path forwarding” once the countdown timer ends, indicating that the ports were deactivated for path forwarding prior to the timer ending. -989 Pet. 62–63; -989 Ex. 1024, 9:47–65, 11:20–22; -989 Ex. 1003 ¶¶ 75–76, 175.

i) Claim 18

Petitioner's Ground 4 also contends that claim 18, which is an apparatus claim for a network element that otherwise has similar limitations as claim 8, with one additional limitation, is rendered obvious for the same reasons discussed above for claim 8. Pet. 47–49, 62–66. Patent Owner opposes Petitioner's arguments for claim 18 for the same reasons as

discussed above for claim 8, and does not dispute the additional limitation in claim 18 is disclosed by the combination of Blease, Weyman, and Rao. -989 Prelim. Resp. 13–16.

The additional limitation is 18b.iv, which is “wherein the processing units are configured to process packets that are communicated over respective subsets of one or more of the ports,” and there is no dispute that Blease describes the processing of packets. -989 Pet. 46; -989 Ex. 1003 ¶¶ 110–112; -989 Ex. 1005, 8:53–67, 11:63–12:3; -989 Prelim. Resp. 13–16.

j) Conclusion

Based on the current record, we find that Petitioner has demonstrated a reasonable likelihood of prevailing for claims 8 and 18 based on Blease, Weyman, and Rao.

G. Ground 5 in the -989 Petition

Petitioner contends that claim 9 is unpatentable as obvious over Blease in view of Weyman, Rao, and Hu, citing the testimony of Dr. Lavian as support. -989 Pet. 49–58, 66–67⁸; -989 Ex. 1007, 5:13–22, 5:31–43, 5:44–56, 6:26–32, 6:39–7:8, 13:8–10, Ex. 1003 ¶¶ 36, 147–153. Claim 9 depends from claim 8 and adds:

wherein updating the list comprises modifying the list to indicate the given multicast packet stream is permitted for forwarding over a given port only when a number of multicast packet streams are permitted for forwarding over the given port, including the given multicast packet stream does not exceed a maximum value.

⁸ Ground 5 of the -989 Petition refers back to Ground 2 so the citations to the Petition for this argument will be to section VII.B under Ground 2.

Substantively the additional limitation in this dependent claim is very similar to limitations 1f and 1g.i, which are discussed above, and the analysis for evaluating Petitioner's assertion that Hu teaches this limitation is similar. *See* -989 Pet. 54–58. Patent Owner does not dispute that Hu teaches the additional limitation, instead relying on its arguments opposing independent claim 8. -989 Prelim. Resp. 16. Accordingly, for the reasons we discussed above for limitations 1f and 1g.i above, we find, based on the current record, that Petitioner has demonstrated a reasonable likelihood of prevailing on claim 9 based on Blease, Weyman, Rao, and Hu.

H. Ground 6 in the -989 Petition

Petitioner contends that claim 10 is unpatentable as obvious over Blease in view of Weyman, Rao, and Deng, citing the testimony of Dr. Lavian in support. -989 Pet. 58–62; 66–67; -989 Ex. 1008 ¶¶ 18, 31, 35–36; -989 Ex. 1003 ¶¶ 71–73, 154–163. Claim 10 depends from claim 8 and adds:

wherein updating the list comprises tracking a use of a permission to forward a certain multicast packet stream over a certain port by monitoring requests relating to the certain multicast packet stream that are received at the network element, and removing the permission from the list responsively to determining that the permission is aged.

Substantively the additional limitation in claim 10 is very similar to the limitation in dependent claim 16, which is discussed above, and the analysis is similar evaluating Petitioner's assertion that Deng teaches this limitation and that a POSITA would have been motivated to apply that teaching to the router in Blease in view of Weyman and Rao. *See* -989 Pet. 58–62. Patent Owner does not dispute that Deng teaches the additional limitation or that a POSITA would have been motivated to make the

combination, instead relying on its arguments opposing independent claim 8. *See* -989 Prelim. Resp. 16. Accordingly, for the reasons we discussed above for dependent claim 16, we find, based on the current record, that Petitioner has demonstrated a reasonable likelihood of prevailing on claim 10 based on Blease, Weyman, Rao, and Deng.

IV. CONCLUSION

Based on the arguments presented in the Petition, we conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '394 patent challenged in each Petition. Accordingly, we institute a trial on all claims and all grounds asserted in the Petitions. 37 C.F.R. § 42.108(a). The Board has not made a final determination under 35 U.S.C. § 318(a) with respect to the patentability of the challenged claims.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 2, 4, 6–12, 14 and 16–18 of the '394 patent is instituted with respect to all grounds set forth in the Petitions;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '394 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 315(d), IPR2024-00913 is consolidated with IPR2024-00989, and all further filings in the consolidated proceeding shall be made in IPR2024-00913;

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FURTHER ORDERED that Petitioner shall, within five business days of this Decision, file any exhibits filed only in IPR2024-00989 in the record of IPR2024-00913; and

FURTHER ORDERED that the case caption in IPR2024-00913 shall be changed to reflect the consolidation.

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