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Paper 16
Date: November 23, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CLOUDFLARE, INC.,
Petitioner,

v.

SABLE NETWORKS, INC.,
Patent Owner.

IPR2021-00969
Patent 6,977,932 B1

Before STACEY G. WHITE, SCOTT B. HOWARD, and JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

DIRBA, *Administrative Patent Judge.*

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

On May 21, 2021, Cloudflare, Inc. ("Petitioner") and SonicWall Inc.[1] filed a Petition requesting *inter partes* review of claims 1–32 of U.S. Patent No. 6,977,932 B1 (Ex. 1001, "the '932 patent"). Paper 1 ("Pet."). Sable Networks, Inc.[2] ("Patent Owner") timely filed a Preliminary Response. Paper 8 ("Prelim. Resp."). With our authorization, Petitioner filed a pre-institution Reply (Paper 10 ("Prelim. Reply")), and Patent Owner filed a pre-institution Sur-Reply (Paper 12 ("Prelim. Sur-Reply")).

An *inter partes* review may not be instituted unless "the information presented in the petition . . . and any 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." 35 U.S.C. § 314(a).

Having reviewed the parties' papers and the evidence of record, we are not persuaded to discretionarily deny institution, and we determine that Petitioner has shown a reasonable likelihood it will prevail in establishing the unpatentability of at least one challenged claim. Accordingly, we institute an *inter partes* review.

I. BACKGROUND

A. Related Matters

The parties indicate that the '932 patent has been asserted in several district court lawsuits, including *Sable Networks, Inc. v. Cloudflare, Inc.*, 6:21-cv-00261 (W.D. Tex.) (the "Litigation") and *Sable Networks, Inc. v. SonicWall Inc.*, 6:21-cv-00190 (W.D. Tex.). Pet. x; Paper 5, 1–2.

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[1] SonicWall Inc. was subsequently terminated from this proceeding following a settlement with Patent Owner. Paper 15 (Termination Order).

[2] Patent Owner also identifies Sable IP, LLC as a real party in interest. Paper 5, 1.

In addition, the parties identify two Board proceedings that involved the '932 patent: IPR2021-00063 and IPR2021-00203. Paper 5, 2; Pet. 68. Both of these proceedings were terminated due to settlement before Patent Owner's preliminary responses were due. *Palo Alto Networks, Inc. v. Sable Networks, Inc.*, IPR2021-00063, Paper 13 (PTAB Feb. 11, 2021) (Termination Order); *Palo Alto Networks, Inc. v. Sable Networks, Inc.*, IPR2021-00203, Paper 13 (PTAB Feb. 11, 2021) (Termination Order); *see also* Pet. 68.

B. The Petition's Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 1):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 6–16	103(a)[3]	Nomura[4], Forslöw[5]
3–5, 17–32	103(a)	Nomura, Forslöw, Reeves[6]

In support of its contentions, Petitioner relies on the testimony of Dr. Kevin Jeffay. Ex. 1003.

[3] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. Because the challenged patent was filed before March 16, 2013, we refer to the pre-AIA version of § 103.

[4] US 2001/0019554 A1, filed March 5, 2001, published Sept. 6, 2001 (Ex. 1005).

[5] US 6,973,057 B1, filed Jan. 18, 2000, issued Dec. 6, 2005 (Ex. 1006).

[6] US 7,260,083 B2, filed Oct. 17, 2001, issued Aug. 21, 2007 (Ex. 1007).

C. Summary of the '932 Patent

The '932 patent is titled "System and Method for Network Tunneling Utilizing Micro-Flow State Information," and the application that led to this patent was filed on January 16, 2002. Ex. 1001, codes (54), (22).

In its background, the '932 patent explains that "Multi-protocol Label Switching (MPLS)" is a network tunneling technique where packets travel through the network along a particular label switched path (LSP). Ex. 1001, 1:25–35, 1:52–58; *see also id.* at 1:61–64 (explaining that LSP "defines an ingress-to-egress path through the network domain"), 5:51–57 (defining "micro-flow"). Within the MPLS network, label switched routers (LSRs) forward a packet based on its label while ignoring the packet's network layer header. *Id.* at 1:65–67. According to the '932 patent, "conventional MPLS networks generally do not maintain flow state information on each individual micro-flow within a particular LSP," which limits the ability to provide quality of service (QoS) in the network. *Id.* at 2:10–14.

To adequately provide and maintain QoS, the '932 patent teaches that "flow state information for each micro-flow routed through the network" and "statistics . . . for each micro-flow transmitted along each LSP" should be stored. Ex. 1001, 2:32–34, 2:40–42. Specifically, an ingress LSR creates a flow block storing "unique flow state information for the identified micro-flow." *Id.* at 10:24–51; *see also id.* at 12:22–29 (describing creation of egress flow block). An aggregate flow block is also created to store information for an associated LSP (such as its statistics). *Id.* at 12:35–43, 12:48–59. The '932 patent states that creating an aggregate flow block avoids the need to search all flow blocks to identify information associated with the flow blocks assigned to a particular LSP. *Id.* at 3:61–4:8, 13:33–40.

D. Challenged Claims

Petitioner challenges all 32 claims of the '932 patent. Of these, claims 1, 9, 17, 24, and 32 are independent. For purposes of this Decision, independent claim 1 is illustrative:

> 1. A method for network tunneling utilizing flow state information, comprising the operations of:
>
> creating a flow block having flow state information for a received first data packet of a micro-flow;
>
> storing a tunnel identifier for the micro-flow in the flow block, the tunnel identifier identifying a selected network tunnel to be used to transmit the data packet;
>
> indexing an aggregate flow block using the tunnel identifier, the aggregate flow block having tunnel specific information for the selected network tunnel; and
>
> transmitting the data packet using the selected network tunnel based on the tunnel specific information;
>
> wherein statistics for the selected network tunnel are stored using the aggregate flow block.

Ex. 1001, 19:12–25.

II. CONSIDERATION OF DISCRETIONARY DENIAL

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314 and deny institution given the status of the Litigation. *See* Prelim. Resp. 35–42; Prelim. Sur-Reply. Petitioner argues that discretionary denial is unwarranted. *See* Pet. 68–73; Prelim. Reply.

A. Legal Standard for Exercising Discretion under Section 314(a)

Under § 314(a), the Director has discretion to deny institution of an *inter partes* review. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter

committed to the Patent Office's discretion."); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review . . . ." (emphasis omitted)); *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 IPR proceeding.").

In determining whether to exercise discretion on behalf of the Director, we are guided by the Board's precedential decision in *NHK Spring Co. v. Intri-Plex Techs, Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential). In *NHK*, the Board found that the "advanced state of the district court proceeding" was a "factor that weighs in favor of denying" the petition under § 314(a). *NHK*, Paper 8 at 20. The Board determined that "[i]nstitution of an *inter partes* review under these circumstances would not be consistent with 'an objective of the AIA . . . to provide an effective and efficient alternative to district court litigation.'" *Id.* (citing *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushuki Kaisha*, IPR2016-01357, Paper 19, 16–17 (PTAB Sept. 6, 2017) (precedential in relevant part)).

The Board's precedential decision in *Fintiv* sets forth six factors that we consider when determining whether to use our discretion to deny institution due to the advanced state of a parallel proceeding. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 3 (PTAB Mar. 20, 2020) (precedential) (Order) ("*Fintiv*"). When determining whether to exercise discretion to deny institution under *NHK* due to an earlier trial date, we consider the following factors ("*Fintiv* factors"):

> 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.

Id. at 6. "These factors relate to 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." *Id.* 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.* (citing Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019 ("CTPG"),[7] 58). We address the *Fintiv* factors below.

B. Analysis of Fintiv Factors

1. Factor 1: Whether a Stay Exists or Is Likely to Be Granted if a Proceeding Is Instituted

The parties agree that no stay has been requested in the Litigation. Pet. 69; Prelim. Resp. 37. Although Patent Owner argues that the district court "has expressly stated on multiple occasions that a stay is disfavored," Patent Owner does not point to any evidence regarding the Litigation specifically. Prelim. Resp. 37.

[7] *Available at* https://www.uspto.gov/TrialPracticeGuideConsolidated.

This factor does not weigh in favor of or against exercising our discretion because no stay has been requested and there is no evidence regarding the likelihood of a stay in the Litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (Institution Decision) ("*Fintiv II*") (holding that "[t]his factor does not weigh for or against discretionary denial" when neither party requested a stay); *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) ("In the absence of specific evidence, we will not attempt to predict how the district court in the related district court litigation will proceed . . . .").

Accordingly, we determine that this factor is neutral.

2. Factor 2: Proximity of the Court's Trial Date to the Board's Projected Statutory Deadline

Petitioner argues that "no trial date has been scheduled in the related litigation." Pet. 70. Patent Owner responds that the district court "expects trial to begin January 12, 2023," approximately a month after the final written decision would be due in this proceeding. Prelim. Resp. 38–39 (citing Ex. 2002;[8] Ex. 2004). Petitioner replies that this is merely an estimate based on the court's "Order Governing Proceedings" (OGP). Prelim. Reply 1–2 (citing Ex. 2002; Ex. 2003, 11 & n.11; Ex. 2004). According to Petitioner, the court's OGP creates "at most a placeholder," and the district court has not actually scheduled a trial date for the Litigation.

[8] It appears that Patent Owner may have included only the most recent email in the relevant email chain in this exhibit. *Compare* Ex. 2002, *with* Ex. 1043. We caution Patent Owner not to include unidentified and unexplained redactions in its exhibits.

Id. at 2. Patent Owner does not dispute this characterization. *See* Prelim. Sur-Reply 2.

There is no trial date scheduled for the Litigation. The evidence indicates that trial may be scheduled at the conclusion of the upcoming *Markman* hearing. Ex. 2003 (OGP), 11; Ex. 2004 (parties' proposed scheduling order); *see also* Ex. 2002 (scheduling *Markman* hearing for January 12, 2022). Given the absence of a scheduled trial date, significant uncertainty surrounds when a trial will occur.

Accordingly, we determine this factor weighs against exercising discretion to deny institution.

3. Factor 3: Investment in the Parallel Proceeding by the Court and Parties

Petitioner argues that this factor strongly favors institution because the Litigation is in the early stages. Pet. 71. Patent Owner argues that there has been relevant activity in the Litigation because the court scheduled a *Markman* hearing for January 12, 2022. Prelim. Resp. 39–40 (citing Exs. 2002–2004). At the time of the Preliminary Reply, Petitioner's invalidity contentions had been due recently (on September 15, 2021), and claim construction proceedings had not begun. Prelim. Reply 3.

The Litigation is in its very early stages. According to the parties' exhibits, Patent Owner has served preliminary infringement contentions, Petitioner has served preliminary invalidity contentions, and the parties have begun identifying their claim construction positions. Ex. 2004, 1–3. However, the *Markman* hearing has not yet occurred, and fact and expert discovery have not yet begun. *Id.* at 3–4; Ex. 2002. Because we consider the investment "at the time of the institution decision," not at some later date

(*Fintiv*, Paper 11, 9–10), the *Markman* hearing does not show investment in the parallel proceeding. Accordingly, we determine that the parties and the court have invested minimal resources in the Litigation, which weighs against discretionary denial.

Moreover, the undisputed evidence here shows that Petitioner acted diligently, filing its Petition only nine weeks after service of the complaint and before preliminary infringement contentions were served. Pet. 69, 71; *see also* Ex. 2004. This further weighs against discretionary denial. *See Fintiv*, Paper 11 at 11 (explaining that, in cases where the petitioner acted expeditiously, "this fact has weighed against exercising the authority to deny institution under *NHK*").

Accordingly, this factor weighs strongly against exercising discretion to deny institution.

4. Factor 4: Overlap Between Issues Raised in the Petition and in the Parallel Proceeding

In the Petition, Petitioner stipulates that "Petitioners will not raise invalidity challenges to the '932 Patent in the litigation relying on the grounds or the prior art references (i.e., Nomura, Forslöw, and Reeves) asserted in this IPR if instituted." Pet. 71. Petitioner contends that this "strongly favors institution." *Id.* at 71–72. According to Patent Owner, Petitioner's "narrow stipulation does not eliminate the possibility that substantially similar art and arguments will be raised in the [Litigation]," and thus, this factor "favors denying institution." Prelim. Resp. 40.

Petitioner's stipulation here is slightly broader than the stipulation made by the petitioner in *Sand Revolution*. *See* Paper 24 at 11–12. There, the Board found the "stipulation . . . mitigate[d] to some degree the concerns

of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions," and weighed marginally in favor of institution. *Id.* at 12. Here, Petitioner also stipulates not to raise invalidity challenges relying on the same asserted references, which further mitigates these concerns, even though it does not eliminate the possibility of overlap.

Accordingly, we determine this factor weighs against exercising discretion to deny institution.

5. *Factor 5: Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party*

Although Petitioner is the defendant in the district court action, the final written decision will likely issue before the trial begins. If this were the outcome, the fact that Petitioner is the defendant in the district court case would actually weigh in favor of institution. *See MED-EL Elektromedizinische Geräte Ges.m.b.H v. Advanced Bionics AG*, IPR2020-00190, Paper 15 at 14–15 (PTAB June 3, 2020) (Institution Decision) (explaining that overlap of issues and parties, especially with an uncertain trial date, weighs in favor of institution because petitioner would be estopped in district court from raising the same issues upon issuance of the Board's final written decision).

Accordingly, we determine this factor weighs against exercising discretion to deny institution.

6. *Factor 6: Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits*

Petitioner contends that the Petition's strong merits weigh in favor of institution. Pet. 72. Petitioner further argues that the challenged patent "is

asserted in four different district court lawsuits," where the Board can "resolve unpatentability in a single, centralized venue." *Id.* at 72–73.

Patent Owner contends that this proceeding would be inefficient because the parties likely will litigate the validity of other patents' claims in the Litigation. Prelim. Sur-Reply 1–2; *see also* Prelim. Resp. 38. Patent Owner explains that the Litigation involves three other patents that are also directed to "computer networking technologies." Prelim. Sur-Reply 1; Prelim. Resp. 38. According to Patent Owner, Petitioner filed petitions challenging those other patents, but did not challenge some of the asserted claims. Prelim. Resp. 38.

The parties' arguments for this factor are unavailing. We do not agree that other patents (even those asserted in the Litigation) or other proceedings (even those involving the challenged patent) are germane to whether we should institute this *inter partes* review, which currently involves only one Petitioner and one challenged patent. In particular, the parties have not persuaded us that those other patents or proceedings are relevant here.[9] Moreover, we find that Petitioner has demonstrated a reasonable likelihood it will prevail, and such a determination weighs neither for nor against the exercise of discretion to deny institution of *inter partes* review.

Accordingly, we determine that this factor is neutral.

[9] Contrary to Patent Owner's argument (*see* Prelim. Resp. 38), we consider "the patentability disputes between the parties" that relate to *the challenged patent*, not any and all patentability disputes between the parties. *See Fintiv*, Paper 11 at 9.

7. Balancing the Fintiv Factors

We have considered the circumstances and facts before us in view of the *Fintiv* factors. Because our analysis is fact driven, no single factor is determinative of whether we exercise our discretion to deny institution under § 314(a). Further, we take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review" when evaluating these factors. *Fintiv*, Paper 11 at 6. Having evaluated all of the factors on this record, we do not exercise our discretion under § 314(a) to deny institution of *inter partes* review.

III. ANALYSIS

A. The Level of Ordinary Skill in the Art

Petitioner asserts that the level of ordinary skill in the art corresponds to "an undergraduate degree (or equivalent) in electrical engineering, computer science, or comparable subject" and "2–3 years of academic or industry experience in computer networking with a focus on network management and routing or comparable experience." Pet. 6–7 (citing Ex. 1003 ¶ 23).

At this stage, Patent Owner does not address the level of ordinary skill in the art. *See generally* Prelim. Resp.

We are satisfied that Petitioner's proposed definition generally comports with the level of skill necessary to understand and implement the teachings of the '932 patent and the asserted prior art. This definition is also supported by the testimony of Dr. Jeffay. *See* Ex. 1003 ¶ 23. For purposes of this Decision, we adopt Petitioner's proposed level of skill, as articulated above.

To the extent the level of ordinary skill in the art is in dispute or makes a material difference in the obviousness analysis, the parties should brief their respective positions in this regard during trial.

B. Claim Construction

1. Overview

We interpret claim terms 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)." 37 C.F.R. § 42.100(b) (2020). Under the principles set forth by our reviewing court, the "words of a claim 'are generally given their ordinary and customary meaning,'" as would be understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

Petitioner contends that no terms require construction for purposes of this proceeding. Pet. 7. Patent Owner discusses the meaning of "flow state information" (a term recited in each independent claim), but otherwise does not address claim construction. *See* Prelim. Resp.

Below, we analyze the meaning of "flow state information" in the context of the '932 patent. Based on the record before us, we do not find it necessary to discuss the construction of any other claim terms or phrases. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that "we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

During the trial, the parties should directly address any claim construction adopted in this Decision if the party contends we should not maintain that understanding of the claim in the final written decision.

2. "Flow State Information"

Petitioner does not propose a particular construction for the term "flow state information." *See* Pet. 7–8, 19–26. But Petitioner contends that "flow state information" includes, for example, destination IP address, port numbers, and/or protocol for a flow. *Id.* at 23–24 (citing Ex. 1001, 10:44–47, 12:25–29, 16:10–12; Ex. 1003 ¶¶ 80–81, 111). Petitioner also contends that a path identifier and quality assurance parameters qualify as "flow state information." *Id.* at 25 (citing Ex. 1001, 10:44–47, 12:25–29).

Patent Owner disagrees. Prelim. Resp. 14–18, 23–29. According to Patent Owner, "flow state information" requires QoS data for a micro-flow. *Id.* at 14–18 (citing Ex. 1001, 3:61–4:2, 6:33–43, 6:58–62, 10:29–35; Ex. 1010, 5:41–43, 8:47–60, 9:3–10, 9:20–26, 11:16–27, Fig. 3B). In particular, Patent Owner argues that "flow state information—QoS characteristics—means current state information about each micro-flow extracted from the first data packet of each micro-flow." *Id.* at 17; *see also id.* at 18–19 (contrasting information extracted from packet headers). Patent Owner also argues that Petitioner's understanding of the claim scope is wrong because Petitioner misunderstands the Specification. *Id.* at 23–29 (citing Ex. 1001, 5:58–64, 6:21–23, 6:27–28, 6:40–41, 12:25–29, 16:8–12, Figs. 2A, 2B; Ex. 1010, 11:24–29).

On this record, for the reasons explained below, we agree with Petitioner that "flow state information" is a broad term that includes, for example, destination IP address, port numbers, and/or protocol for a flow,

and we disagree with Patent Owner's argument that "flow state information" must include quality of service descriptors.

We start with the claims (*see Phillips*, 415 F.3d at 1314), but they provide little context for the meaning of this term. Each independent claim simply recites: "a flow block having flow state information" for a micro-flow, and a "tunnel identifier" that is included in the flow block. *E.g.*, Ex. 1001, 19:14–17 (claim 1), 19:51–53 (claim 9). None of the claims include additional requirements regarding the contents or purpose of the claimed "flow state information."

Turning to the Specification, the term "flow state information" is used to refer to several different types of information. For example, the Specification describes embodiments where "flow state information" includes: the protocol of a micro-flow, the LSP used for the micro-flow, and physical routing information, such as the egress linecard and port. *E.g.*, Ex. 1001, 16:8–12 ("[F]low state information . . . includ[es] the LSP being used by the micro-flow, the specific egress linecard and port used by the micro-flow, and the protocol being used by the micro-flow."); *see also id.* at 12:25–29, 14:23–29, 15:1–5, 17:29–32 ("[F]low state information . . . includ[es] which LSP the micro-flow is using, the outgoing label, and the label action for the micro-flow."). Also, when discussing the creation of a flow block, the Specification states that "label identifier 245 and QOS identifier 245 [are] stored within a flow block 210, *which will reflect unique flow state information for the identified micro-flow* and is stored in the flow block table 156." Ex. 1001, 10:36–47 (emphasis added). Label field 245 includes "characteristics of the data packets from a single micro-flow," such as "the protocol type, the source address, the destination address, the source

port, and the destination port." *Id.* at 6:21–26. QoS field 240 includes "descriptors that describe QoS constraints of the related micro-flow," including "rate information" such as "a guaranteed rate (GR) value 275, an available rate (AR) value 285, packet discard time limit (D) 265, delay variation (Q) 295 and a weighing factor (W) 265 for available rate traffic." *Id.* at 6:33–43. The parties agree that the Specification indicates that information in QoS identifier 240 qualifies as "flow state information," and on this record, we agree. *See* Pet. 25; Prelim. Resp. 22, 24. By the same token, the Specification indicates that information in label identifier 245 (e.g., protocol type, source address, destination port) also qualifies as "flow state information." *See* Ex. 1001, 10:36–51.

We disagree with Patent Owner's contrary interpretation of the Specification. *See* Prelim. Resp. 23–27. Patent Owner begins by noting that each packet includes label field 245 (which differentiates flows), but only the first packet of a flow includes QoS field 240. *Id.* at 24–26 (citing Ex. 1001, 5:58–64, 6:21–23, 6:27–28, Fig. 2B). From this, Patent Owner concludes that QoS field 240—and not label field 245—includes "flow state information" (*see id.* at 23–26), as the claims require "creating a flow lock *having flow state information for a received first data packet* of a micro-flow" (*id.* at 24 (quoting Ex. 1001, 19:14–15)). Patent Owner's logic is flawed. Patent Owner assumes that "flow state information" must be present in the first data packet and absent from other data packets, but Patent Owner provides no justification for this assumption. In particular, even if the claim requires the first data packet to *include* "flow state information," the current record does not persuade us that the claim *precludes* other packets from also including this information.

Patent Owner's reliance on the '195 patent fares no better. *See* Prelim. Resp. 14–17. The Specification incorporates by reference statements in the specification of the '195 patent,[10] noting that this other document describes preprocess operations including "determining an appropriate QoS 240 and a label 245 for [a] received micro-flow." Ex. 1001, 10:29–35. The '195 patent includes QoS descriptors that are similar to those described in the Specification, and it similarly characterizes them as "state information" stored "within a flow block table." Ex. 1010, 5:41–45, 8:47–60. *Compare* Ex. 1001, Fig. 2B (illustrating similar QoS descriptors), *with* Ex. 1010, Fig. 3B (illustrating a QoS field). But even if this shows that QoS descriptors *qualify as* "flow state information," the current record does not persuade us that "flow state information" *must include* QoS descriptors, as Patent Owner contends.

Patent Owner also argues that its construction better aligns with the purpose of its invention (*see* Prelim. Resp. 16–18, 26), but this argument is unavailing. The claim recites "flow state information" and a generalized purpose is insufficient justification for importing a QoS-descriptor limitation into the term. *See Hill-Rom Servs., Inc. v. Stryker Corp*., 755 F.3d 1367,

[10] Patent Owner contends that the '932 patent incorporates by reference the disclosure of U.S. App. No. 09/552,278 ("the '278 application"), which issued as US Patent No. 6,574,195 ("the '195 patent"). Prelim. Resp. 8–9 (citing Ex. 1001, 10:33–35; Ex. 1010 (the '195 patent)). On this record, we agree with Patent Owner that the contents of the '278 application are incorporated by reference into the '932 patent. *See* Ex. 1001, 1:8–11, 10:33–35; *Paice LLC v. Ford Motor Co.*, 881 F.3d 894, 906 (Fed. Cir. 2018). The '278 application issued as the '195 patent (*see* Ex. 1010, code (21)), and for purposes of this Decision, we assume that two documents are identical. As a result, at this stage, we treat the statements in the '195 patent as if they were part of the Specification of the '932 patent.

1373 (Fed. Cir. 2014) ("[T]o deviate from the plain and ordinary meaning of a claim term . . . the patentee must, with some language, indicate a clear intent to do so in the patent."); *Phillips*, 415 F.3d at 1323 ("[T]he line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.").

Finally, Patent Owner also appears to argue that "flow state information" reflects the current state of a micro-flow rather than information derived from packet headers. *See* Prelim. Resp. 18–19, 27–29. However, the alleged distinction is insufficiently explained at this stage of the proceeding. If Patent Owner desires to advance such a position at trial, Patent Owner should explain its position, articulate a particular claim construction, and identify any supporting intrinsic evidence.

Accordingly, on this record, given the Specification's usage of the term,[11] we preliminarily determine that a person of ordinary skill in the art would understand the term "flow state information" broadly. In particular, for purposes of this Decision, we agree with Petitioner that a destination IP address, a port number used for routing the flow, and an identification of the flow's protocol each qualify as "flow state information."

C. Law on Obviousness

The legal question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the

[11] The prosecution history of the '932 patent does not shed light on the term's meaning. *See* Ex. 1002.

prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.[12] *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

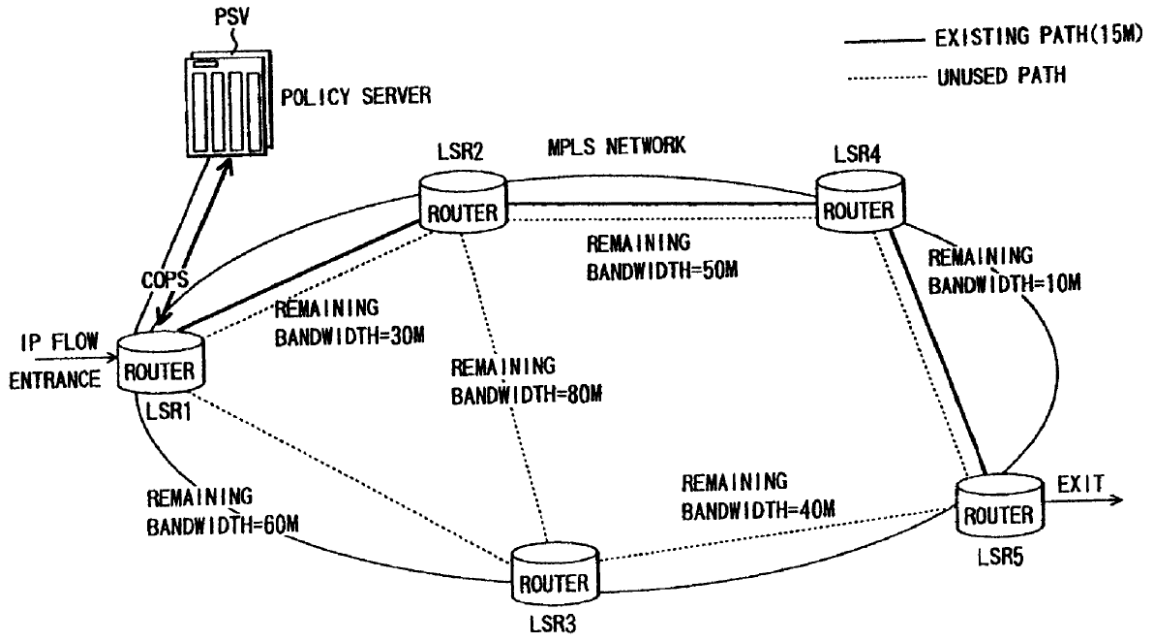
D. Summary of Asserted Prior Art References

1. Nomura (Ex. 1005)

Nomura describes a MPLS network that seeks to balance network utilization. Ex. 1005, Abstract, ¶¶ 1, 3, 12–14. Figure 4 (reproduced below) shows an example network.

[12] The current record does not include allegations or evidence of objective indicia of nonobviousness.

FIG.4



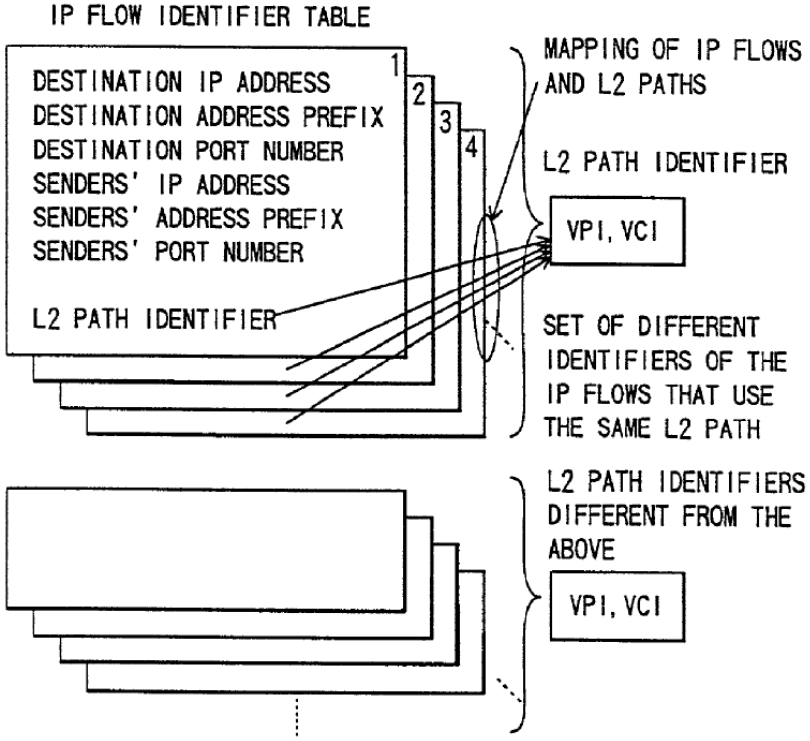
As shown above, Nomura's MPLS network includes a policy server (PSV) and several LSRs, including an "ingress" router (LSR1) where an IP flow enters the network and an "egress" router (LSR5) where it leaves the network. *Id.* ¶¶ 6, 63–64, Fig. 4.

Nomura's policy server collects "the utilization conditions of the links (physical lines)" in the network from the LSRs. Ex. 1005 ¶ 81. When a user requests a new IP flow, the policy server determines whether an existing L2 path can meet the user's transmission quality requirements. *Id.* ¶¶ 71, 75, 84. If not, the policy server searches for a new L2 path and, when found, instructs the ingress LSR to transfer a path set-up instruction to the LSRs along that path. *Id.* ¶¶ 84–92; *see also id.* ¶¶ 55, 66.

After receiving an IP packet belonging to a flow, an ingress LSR identifies the flow's L2 path, adds the corresponding label to the packet, and transfers the packet to the next LSR on the path. Ex. 1005 ¶¶ 67–69; *see also id.* ¶¶ 94–96. As shown in Figure 5 (reproduced below), the LSR

includes an "IP flow identifying table TBL . . . that has entries identifying IP flows uniquely and each entry has a pointer relating the L2 path carrying the IP flow uniquely." *Id.* ¶ 94.

FIG.5



As shown above, the IP flow identifier table includes four entries, and each entry specifies destination IP address, destination address prefix, destination port number, senders' IP address, senders' address prefix, senders' port number, and L2 path identifier.

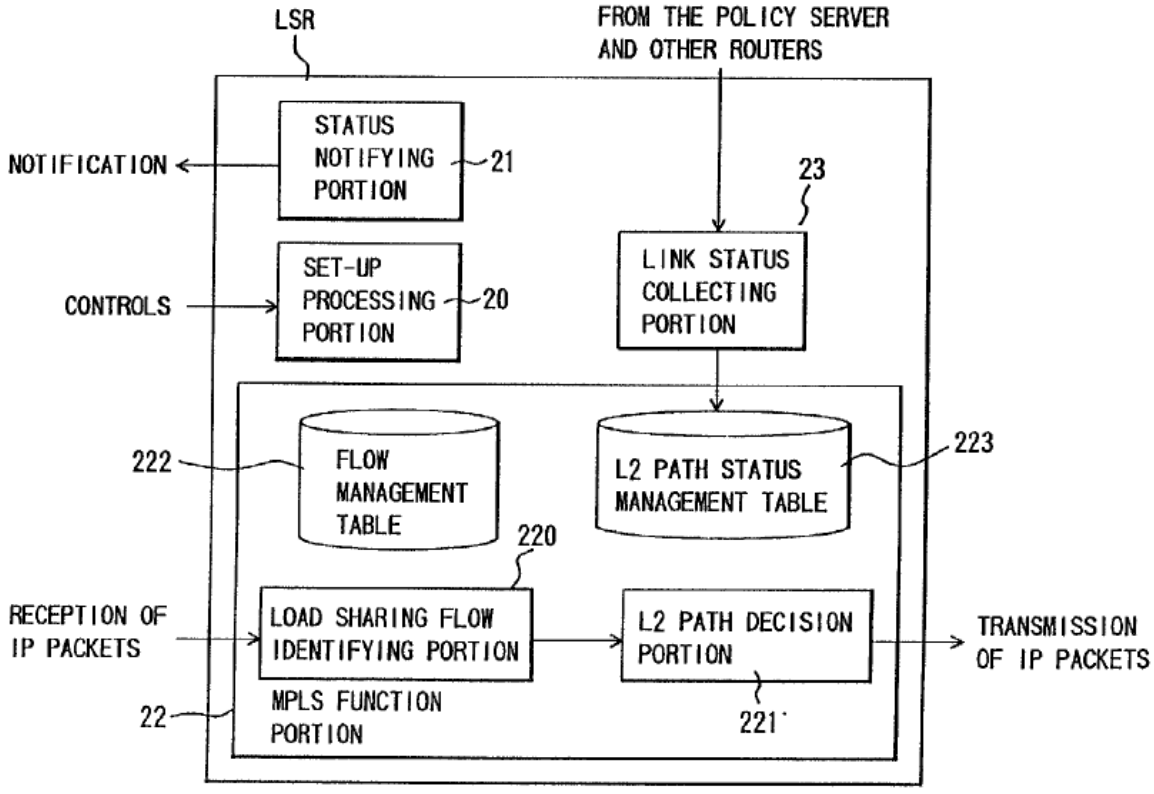
Nomura also describes techniques for load balancing in the network. Ex. 1005 ¶¶ 98–104. For example, if the policy server identifies two possible paths, it can select the "route that has the more abundant resources" "based on the utilization conditions." *Id.* ¶¶ 109–112. As another example, the ingress LSR can "collect[] the utilization conditions of every route for

itself" so that it can select an appropriate L2 path "by itself without the instructions of the policy server PSV." *Id.* ¶ 113. Nomura further states:

> [T]he router LSR1 identifies the packets that need load sharing and those that do not, by referring to the flow management table 222 when LSR1 receives IP packets. If the policy server PSV determines that the packets need load sharing, it selects an L2 path with the lightest load out of a plurality of L2 paths used for transmitting the IP packets, by referring to the table managing L2 paths' status 223, and transfers the IP packets through the L2 path. Thus, load sharing can be realized.

Id. ¶ 114. Figure 8 (reproduced below) shows a block diagram of an LSR involved in Nomura's load balancing techniques. *Id.* ¶¶ 43, 102.

FIG.8



As shown above, Figure 8 depicts an LSR that includes MPLS function portion 22, which has flow management table 222 and L2 path status

management table 223. Nomura does not further describe the contents of table 223 or the manner in which it is indexed.

2. Forslöw (Ex. 1006)

Forslöw also describes transmission of IP packets "using multi-protocol label path switching (MPLS) label switched paths (LSPs)." Ex. 1006, Abstract. In its background, Forslöw explains:

> When a label packet arrives at an LSR, the forwarding component uses the input port number and label to perform an exact match in its forwarding table. When a match is found, the forwarding component retrieves the outgoing label, the outgoing interface, and the next-hop router address from the forwarding table. The forwarding component then swaps (or replaces) the incoming label with the outgoing label and directs the packet to the outbound interface for transmission to the next hop in the LSP.

Id. at 4:53–64. In Figure 6A (reproduced below), Forslöw shows an exemplary MPLS forwarding table (*id.* at 6:33):

MPLS FORWARDING TABLE			
In Interface	In Label	Out Interface	Out Label
3	4	5	7

As shown above, the MPLS forwarding table includes four columns and a single row, which shows an example where "all packets coming in on IN interface 3 with IN label 4 are mapped to an OUT interface 5 and an OUT label 7." *Id.* at 13:8–17. So, when such a packet is received, the LSR

replaces the label with a value of 7 and forwards the packet out interface 5 to the next LSR. *Id.* at 13:17–20.

3. Reeves (Ex. 1007)

Reeves is directed to a "network node employing multi-protocol label switching (MPLS) over an asynchronous transfer mode (ATM) platform." Ex. 1007, 1:6–10; *see id.* at 1:14–23 (noting that MPLS is often used to transmit IP packets and has "utility in the high speed core of many networks" such as ATM). In Figure 1 (reproduced below), Reeves shows an exemplary router 10 (i.e., a "node"). *Id.* at 2:63–65.

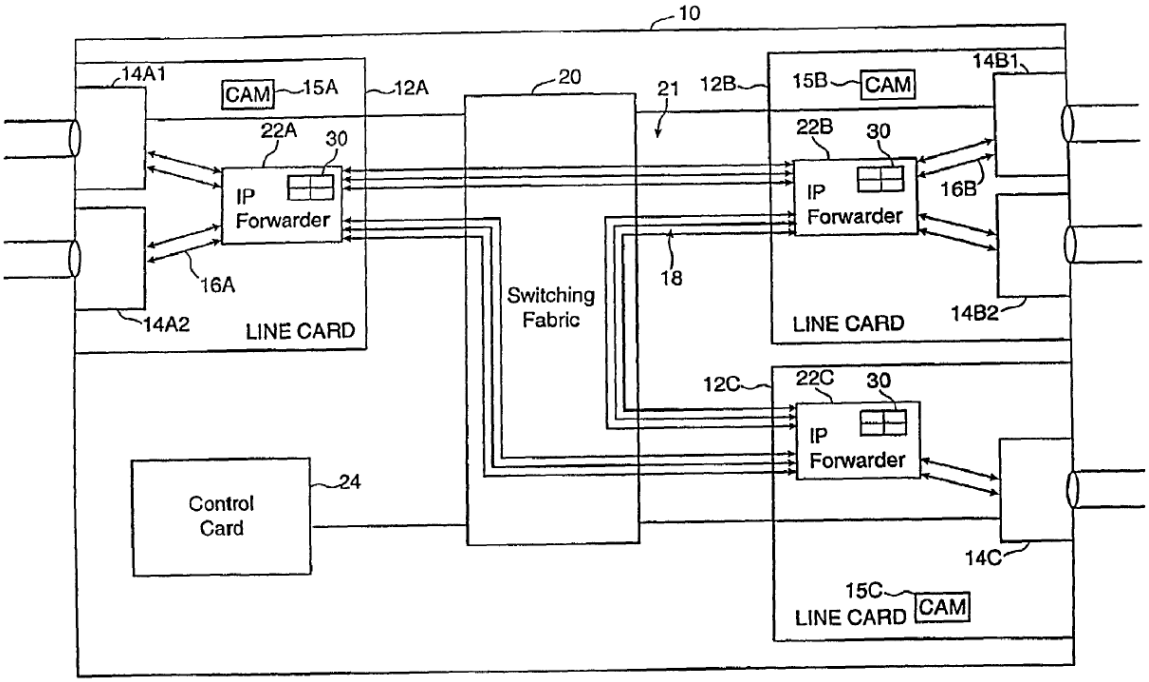


Figure 1

As shown above, "node 10 comprises a plurality of input/output controllers controllers[,] such as line cards 12 which have physical interface input/output ports 14," and switching fabric 20, which redirects information received by an ingress line card to the appropriate egress line card. *Id.* at 2:65–67, 3:14–20. Although line cards 12 are bidirectional, Reeves

assumes, for purposes of explanation, that line card 12A and its ports provide ingress processing, while line cards 12B, 12C and their ports provide egress processing. *Id.* at 3:30–35.

E. Obviousness Ground Based on Nomura and Forslöw

Petitioner contends that the subject matter of independent claims 1 and 9 and dependent claims 2, 6–8, and 10–16 would have been obvious over Nomura and Forslöw. Pet. 9–51. Patent Owner contends that Petitioner fails to show two of the requirements of independent claim 1: "a flow block having flow state information" (Prelim. Resp. 13–29), and storing "statistics for the selected network tunnel . . . using the aggregate flow block" (*id.* at 29–35). Patent Owner contends that Petitioner's showing for independent claim 9 is similarly defective. *Id.* at 13, 29.

We have considered the parties' arguments and the evidence presented at this stage. For the reasons explained below, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that the subject matter of claims 1, 2, and 6–16 would have been obvious over Nomura and Forslöw.

1. Independent Claim 1

a. "A method for network tunneling utilizing flow state information, comprising the operations of . . . ."

Petitioner contends that Nomura discloses the preamble.[13] Pet. 18–19. Petitioner asserts that Nomura discloses a label switch network (e.g., an

[13] Because Petitioner has shown sufficiently that the recitations in the preamble are satisfied by Nomura, we need not determine whether the preamble is limiting. *See Vivid Techs.*, 200 F.3d at 803.

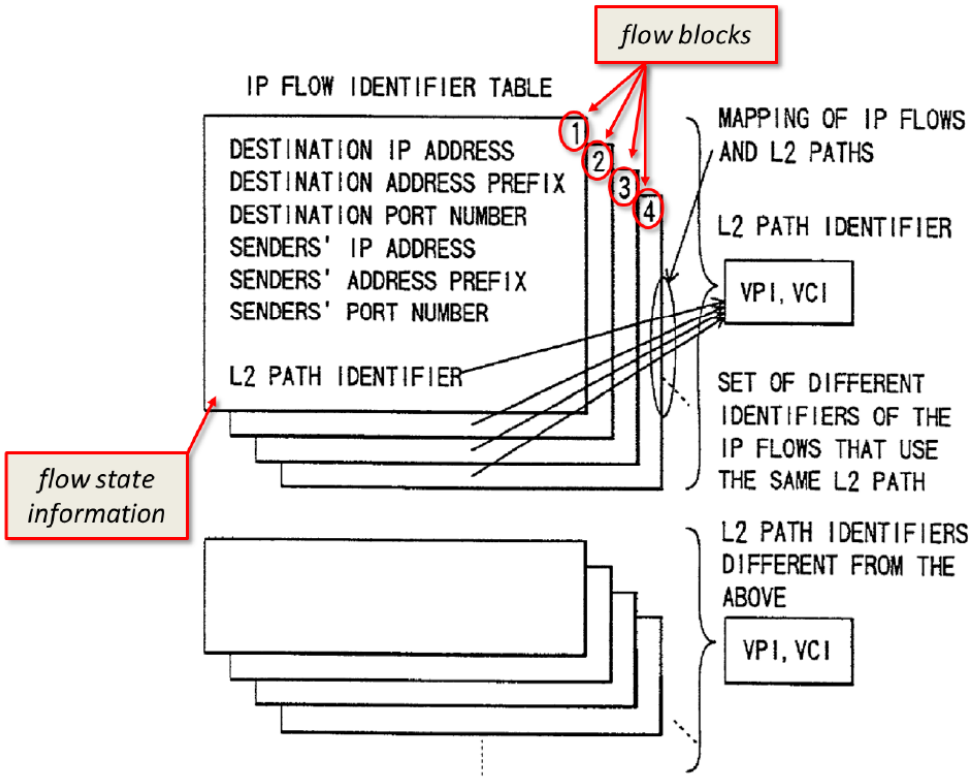
MPLS network) that sets up layer 2 (L2) paths and routes IP packets from an ingress node (e.g., a label switching router (LSR)) to an egress node via a specified path using a label. *Id.* (citing Ex. 1005, Abstract, ¶¶ 1, 13–14, 18, 52, 63, 65). According to Petitioner, a person of ordinary skill in the art would know that transferring IP packets through Nomura's label switch network based on labels is a form of network tunneling. *Id.* at 19 (citing Ex. 1003 ¶ 103).

At this stage, Patent Owner does not dispute Petitioner's arguments, analysis, or evidence for the preamble. *See* Prelim. Resp.

Petitioner's assertions and explanations are consistent with and supported by the evidence cited by Petitioner. On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that Nomura discloses the preamble.

b. "creating a flow block having flow state information for a received first data packet of a micro-flow"

Petitioner contends that Nomura discloses this limitation. Pet. 19–26. Petitioner maps each of the unique entries in Nomura's IP flow identifying table (TBL) and flow management table 222 to the claimed "flow block." *Id.* at 19–21 (citing Ex. 1005 ¶¶ 70, 94, 96). To illustrate its mapping, Petitioner annotates Figure 5 as shown below (*id.* at 25)—in Figure 5, Nomura depicts the IP flow identifying table (Ex. 1005 ¶ 94).



Petitioner's annotation of Figure 5 (reproduced above) identifies "flow blocks" as entries 1–4 (which each correspond to a different IP flow) and "flow state information" as the information in an entry, which includes "DESTINATION IP ADDRESS," "DESTINATION PORT NUMBER," "SENDERS' IP ADDRESS," "SENDERS' PORT NUMBER," and "L2 PATH IDENTIFIER." *See* Pet. 25; *see also id.* at 20 (citing Ex. 1005 ¶ 114, Fig. 8; Ex. 1003 ¶ 107) (addressing flow management table 222). Petitioner contends that the entries in Nomura's tables include "flow state information," as recited in the claim, because Nomura states that they include "**identifiers of the IP flows** [that] include IP header information such as **destination** and senders' **IP addresses**, **destination** and senders' **port numbers** and **classes of protocols**, or payload information." *Id.* at 23–24 (alteration in original) (quoting Ex. 1005 ¶ 92; citing Ex. 1001, 10:44–47, 12:25–29, 16:10–12; Ex. 1003 ¶¶ 80–81, 111). In addition, Petitioner

contends that Nomura's "quality assurance parameters" teach or suggest the claimed "flow state information" because an ordinary artisan would have found it obvious to include this information in Nomura's tables. *Id.* at 25–26 (citing Ex. 1005 ¶¶ 89, 108, 112, 130; Ex. 1003 ¶ 113).[14] Moreover, Petitioner asserts that Nomura's IP flow discloses the claimed "micro-flow" and that an ordinary artisan would have understood that each unique entry in Nomura's table would be created for a first data packet of the corresponding IP flow. *Id.* at 22–23 (citing Ex. 1005, Abstract, Fig. 5, ¶¶ 18, 20, 94; Ex. 1003 ¶¶ 109–110).

Patent Owner contends that Nomura fails to teach or suggest the claimed "flow state information" because this claim term requires QoS descriptors associated with the micro-flow. Prelim. Resp. 14–19, 23–29. Patent Owner also contends that "Nomura teaches quality assurance parameters for L2 paths, *i.e.*, *tunnels*," not "flow state information" for a micro-flow. *Id.* at 22–23 (citing Pet. 25–26; Ex. 1005 ¶¶ 89, 108).

Having considered the parties' arguments and the cited evidence, we are persuaded that Petitioner has shown a reasonable likelihood that it will establish that Nomura discloses this claim limitation, notwithstanding Patent Owner's arguments to the contrary. In particular, for the reasons explained above (*supra* § III.B.1), we preliminarily determine that a person of ordinary skill in the art would understand the term "flow state information" to be a

[14] As another alternative, Petitioner contends that Nomura's L2 path identifier discloses the claimed "flow state information." Pet. 25. Patent Owner responds that this mapping is flawed because Petitioner maps this same component in Nomura to two separate and distinct claim elements. Prelim. Resp. 19–21. We do not rely on that aspect of the Petition in this Decision, and so we do not address Patent Owner's critique of it.

broad term that includes information such as a flow's destination IP address, port number, and/or protocol. As a result, for purposes of this Decision, we are persuaded that a unique entry in Nomura's IP flow identifying table (e.g., shown in Figure 5) discloses the claimed "flow block," and information included in that entry (e.g., destination IP address) discloses the claimed "flow state information." *See* Ex. 1005 ¶¶ 70, 92–96, Fig. 5; Ex. 1003 ¶ 111. Patent Owner's arguments to the contrary are premised on an erroneous understanding of the claim's scope. *See* Prelim. Resp. 14–19, 23–29.

But, even if we adopted Patent Owner's proposed construction (i.e., "flow state information" requires quality of service descriptors), we still would disagree with Patent Owner's contention that Nomura merely discloses "quality assurance parameters for L2 paths, *i.e.*, *tunnels*," rather than for a micro-flow. Prelim. Resp. 22–23. Nomura provides an example where an IP flow "requir[ing] 20 Mbps bandwidth" is requested for transmitting dynamic images. Ex. 1005 ¶ 71; *see also id.* ¶ 75 (stating that "users' requests contain transmission quality explicitly required," including "bandwidths, delays, delay deviations, and a waste ratio"). Nomura determines that the existing path cannot provide the required bandwidth, and Nomura's policy server identifies a new path and instructs the ingress router (LSR1) "to transfer a path set-up instruction." *Id.* ¶¶ 84, 89; *see also id.* ¶ 108. Because Nomura considers the bandwidth requested for a flow, we understand Nomura to describe quality assurance parameters for a flow. Nevertheless, at this stage, we question whether a person of ordinary skill in the art would have been motivated to store Nomura's quality assurance parameters in the claimed "flow block" (i.e., Nomura's IP flow identifying table), as would be required, and as a result, we do not rely on Petitioner's

contention that Nomura's "quality assurance parameters" disclose the claimed "flow state information" (Pet. 25–26). *See* Ex. 1005 ¶¶ 92, 94, Fig. 5; *see also id.* ¶¶ 89, 108 (explaining that the policy server identifies the L2 paths that would satisfy the received quality assurance parameters). We need not further address that issue in this Decision because, as noted above, we are persuaded that Petitioner has sufficiently shown that the information included in Nomura's IP flow identifying table (e.g., destination IP address) discloses the claimed "flow state information."

In addition, we are sufficiently persuaded that Nomura discloses "*creating* a flow block having flow state information *for a received first data packet of a micro-flow*," as required. Ex. 1001, 19:14–15 (emphasis added). Nomura describes unique IP flows that each include a series of IP packets (*e.g.*, Ex. 1005, Abstract, ¶¶ 18, 94), and we are sufficiently persuaded that Nomura's IP flow discloses the claimed "micro-flow" (*see* Pet. 23 (citing Ex. 1003 ¶ 110); *see also* Ex. 1001, 5:51–57). Dr. Jeffay testifies that an "entry in the IP Flow Identifier Table . . . is representative of all IP packets within that IP flow, including the first IP packet," and an ordinary artisan would have understood that an entry would be created upon receiving the corresponding IP flow. Ex. 1003 ¶¶ 109–110. On this record, we credit this testimony, as it is reasonable and supported by Nomura's disclosure. *See, e.g.*, Ex. 1005 ¶¶ 92–97.

Accordingly, on this record, we are persuaded that Petitioner sufficiently shows that Nomura discloses this limitation, despite Patent Owner's arguments to the contrary.

c. "storing a tunnel identifier for the micro-flow in the flow block, the tunnel identifier identifying a selected network tunnel to be used to transmit the data packet"

Petitioner contends that Nomura discloses this limitation. Pet. 26–28. Petitioner maps Nomura's L2 path identifier (shown in the IP flow identifier table of Figure 5) to the claimed "tunnel identifier." *Id.* According to Petitioner, Nomura's L2 path identifier specifies an L2 path (i.e., an LSP), and an LSP is an example of a tunnel. *Id.* at 26–27 (citing Ex. 1005 ¶¶ 18, 94, 96; Ex. 1003 ¶ 115; Ex. 1001, 2:14–17).

At this stage, Patent Owner does not dispute Petitioner's arguments, analysis, or evidence for this limitation. *See* Prelim. Resp.; *cf. id.* at 19 (stating that "Nomura's L2 Path identifier is a tunnel identifier").

Petitioner's assertions and explanations are consistent with and supported by the evidence cited by Petitioner. On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that Nomura discloses this limitation.

d. "indexing an aggregate flow block using the tunnel identifier, the aggregate flow block having tunnel specific information for the selected network tunnel"

Petitioner relies on the combination of Nomura and Forslöw for this limitation. Pet. 28–36. Petitioner maps each entry in Nomura's L2 path status management table 223 to the claimed "aggregate flow block," and Petitioner contends that the label and label action for a given entry disclose the claimed "tunnel specific information." *Id.* at 28–31 (citing Ex. 1005 ¶¶ 3, 18, 56, 65, 68–69, 102, 114; Ex. 1003 ¶¶ 121–122, 124–125). Petitioner asserts that an ordinary artisan would understand Nomura's table

223 to include multiple entries that each provide the status of a corresponding path. *Id.* at 28–29 (citing Ex. 1003 ¶ 121; Ex. 1005 ¶ 114).

Moreover, Petitioner contends that Nomura suggests, and Forslöw explicitly discloses, the remaining requirements of this limitation—i.e., "indexing an aggregate flow block using the tunnel identifier" and storing the "tunnel specific information" in the "aggregate flow block." Pet. 32–36. In particular, according to Petitioner, Nomura suggests using the L2 path identifier to find a path's entry in table 223, and it would have been obvious, given Nomura's disclosure, to store the labels and label actions in table 223 with their corresponding path. *Id.* at 32–33 (citing Ex. 1005 ¶¶ 56, 96, 114, 117–118; Ex. 1003 ¶¶ 126–129).

In addition, Petitioner contends that Forslöw indexes its MPLS forwarding table using a packet's label, which "is analogous to a connection identifier." Pet. 35–36 (quoting Ex. 1006, 4:35–37; citing *id.* at 10:35–37, 13:11–14). Petitioner further contends that Forslöw discloses replacing (or removing) a packet's label before transmitting the packet to the next router, which discloses "tunnel specific information," as required. *Id.* at 34 (citing Ex. 1006, 4:59–64, 10:37–39, 10:41–46, 20:59–62; Ex. 1003 ¶ 131). Petitioner proposes a combination of Nomura and Forslöw where "Forslöw's incoming and outgoing labels—which also dictate when label actions such as swapping or removing labels are to be performed—[are] added to the entries in Nomura's L2 path status management table 223" and the L2 path identifier is used to index that table. *Id.* at 34–36 (citing Ex. 1003 ¶¶ 132, 133; Ex. 1005 ¶ 114; Ex. 1006, 13:3–6). Petitioner contends that this combination would have been obvious to a person of ordinary skill in the art. *Id.* at 16–18, 35–36. Specifically, according to Petitioner, Nomura does not

provide implementation details (such as the contents of table 223 and the manner in which it is indexed), so an ordinary artisan would have looked to the prior art (such as Forslöw) for implementation details. *Id.* at 16–17 (citing Ex. 1003 ¶¶ 100–101); *see also id.* at 34–36 (addressing implementation). Petitioner also contends that the proposed combination would have used known methods and would have led to predictable results. *Id.* at 17–18 (citing Ex. 1003 ¶ 102).

At this stage, Patent Owner does not dispute Petitioner's arguments, analysis, or evidence for this limitation. *See* Prelim. Resp.

Petitioner's assertions and explanations are consistent with and supported by the evidence cited by Petitioner. On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that the combination of Nomura and Forslöw teaches or suggests this limitation. We are also persuaded, on this record, that Petitioner has demonstrated a reasonable likelihood of showing that an ordinarily skilled artisan would have had reason to combine the teachings of these references.

e. "transmitting the data packet using the selected network tunnel based on the tunnel specific information"

Petitioner contends that Nomura and Forslöw, individually or in combination, teach this limitation. Pet. 36–38. In particular, Petitioner asserts that, during load sharing, Nomura transfers IP packets based on the label for the corresponding flow after referring to table 223. *Id.* at 36–37 (citing Ex. 1005 ¶¶ 18, 67–68, 97, 114). Moreover, Petitioner quotes Forslöw's statement that the "forwarding component [] swaps (or replaces)

the incoming label with the outgoing label and directs the packet to the outbound interface for transmission to the next hop in the LSP." *Id.* at 37–38 (quoting Ex. 1006, 4:59–62; citing *id.* at 4:53–64, 13:17–20).

At this stage, Patent Owner does not dispute Petitioner's arguments, analysis, or evidence for this limitation. *See generally* Prelim. Resp.

Petitioner's assertions and explanations are consistent with and supported by the evidence cited by Petitioner. On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that Nomura and Forslöw, individually or in combination, teach this limitation.

f. "wherein statistics for the selected network tunnel are stored using the aggregate flow block."

Petitioner contends that Nomura discloses this limitation. Pet. 38–39; *see also id.* at 39 (noting that Forslöw similarly collects statistical data). In support, Petitioner quotes Nomura, which states that "LSR1 can collect the utilization conditions of every route for itself so as to use them as a guideline for selecting an L2 path appropriate for transmission." *Id.* at 38 (quoting Ex. 1005 ¶ 113; citing *id.* ¶ 14). Petitioner contends that an ordinary artisan would have understood that Nomura stores these utilization conditions in L2 path status management table 223. *Id.* at 38–39 (citing Ex. 1005 ¶ 81, 102, 113–114; Ex. 1003 ¶ 140).

Patent Owner argues that Nomura does not teach storing statistics using an aggregate flow block. Prelim. Resp. 29–35. Patent Owner contends that "[n]othing in Nomura teaches that the information collected by Nomura's link status collection portion 23 of a router is stored within Nomura's L2 path management status table 223," and Nomura instead

simply teaches that link status collection portion communicates path failure information. *Id.* at 31–34 (citing Ex. 1005 ¶¶ 133, 147, Fig. 11); *see id.* at 34–35 (asserting that table 223 "contains tunnel failure data").

On this record, we are sufficiently persuaded that Nomura discloses this limitation. Nomura states that the ingress LSR "can collect the utilization conditions of every route for itself so as to use them as a guideline for selecting an L2 path appropriate for transmission" (Ex. 1005 ¶ 113), and using this information, the LSR can first "select[] an L2 path with the lightest load out of a plurality of L2 paths used for transmitting the IP packets, by referring to the table managing L2 paths' status 223" and then "transfer[] the IP packets through the L2 path" (*id.* ¶ 114; *see id.* ¶ 102 (identifying components of LSR)). *See also id.* ¶¶ 81, 110–112 (describing alternative embodiment where the policy server selects the path based on utilization conditions).

Patent Owner's arguments to the contrary are unavailing. Patent Owner relies on Nomura's discussion of Figure 11 when arguing that table 223 stores tunnel failure data rather than statistics (*see* Prelim. Resp. 31–34), but Figure 11 *does not include table 223* (*see* Ex. 1005, Fig. 11). So, rather than responding to Petitioner's contention, Patent Owner discusses a different embodiment of Nomura. *See* Pet. 38–39 (relying on discussion of Figure 8); Ex. 1005 ¶¶ 100–104 (context for Figure 8), 119–120, 124–126 (context for Figure 11). Indeed, Nomura makes no reference to tunnel failure when discussing table 223, and Nomura makes no reference to table 223 when discussing tunnel failure. *See* Ex. 1005 ¶¶ 102, 113–114, 133, 147, Fig. 8. Consequently, Patent Owner identifies (and we perceive) no

support for its understanding of the contents of table 223. *See* Prelim. Resp. 31–35.

Accordingly, we are persuaded that Petitioner sufficiently shows that Nomura discloses this limitation, despite Patent Owner's arguments to the contrary.

Thus, Petitioner has shown a reasonable likelihood that it would prevail in establishing the unpatentability of claim 1 as obvious over Nomura and Forslöw.

2. Independent Claim 9
Dependent Claims 2, 6–8, and 10–16

Independent claim 9 includes limitations commensurate with those found in independent claim 1, and Petitioner primarily relies on its prior analysis for this claim. *See* Pet. 44–47. Other than the arguments addressed above (*see supra* § III.E.1), Patent Owner does not dispute Petitioner's contentions for claim 9 at this stage. *See* Prelim. Resp. Accordingly, for the reasons explained above, we are persuaded that Petitioner has shown a reasonable likelihood that it would prevail in establishing the unpatentability of claim 9 over Nomura and Forslöw.

Moreover, we find that Petitioner has made an adequate showing, which is not specifically challenged by Patent Owner in its Preliminary Response (*see* Prelim. Resp.), that the additionally recited limitations of dependent claims 2, 6–8, and 10–16 would have been obvious over the Nomura-Forslöw combination. *See* Pet. 40–44, 47–51. On this record, we determine that Petitioner also has shown a reasonable likelihood of prevailing in its challenge to claims 2, 6–8, and 10–16 as unpatentable over Nomura and Forslöw.

F. Obviousness Ground Based on Nomura, Forslöw, and Reeves

Petitioner contends that the subject matter of independent claims 17, 24, and 32 and dependent claims 3–5, 18–23, and 25–31 would have been obvious over the combination of Nomura, Forslöw, and Reeves. Pet. 51–68. In particular, Petitioner relies on its previous contentions regarding the Nomura-Forslöw combination, and Petitioner asserts that Reeves discloses a router that includes ingress and egress line cards with corresponding ports. *See id.* Petitioner further contends that a person of ordinary skill in the art would have been motivated to combine Reeves with Nomura and Forslöw because Reeves provides implementation details (regarding hardware components within an LSR) that are not explicitly described by Nomura and Forslöw. *Id.* at 53–54; *see also id.* at 51–52. According to Petitioner, the proposed combination would have been routine for an ordinary artisan, would have involved well-known components, and would have led to predictable results. *Id.* at 54–55.

Other than the arguments addressed above with respect to claim 1 (*see supra* § III.E.1), Patent Owner does not dispute Petitioner's contentions for these claims at this stage. *See* Prelim. Resp.

Petitioner's assertions and explanations are consistent with and supported by the evidence cited by Petitioner. For the reasons explained above, Patent Owner does not identify any material deficiency in Petitioner's showing. On this record, we are persuaded that Petitioner has shown a reasonable likelihood of prevailing in establishing the unpatentability of claims 3–5 and 17–32 over Nomura, Forslöw, and Reeves.

IV. CONCLUSION

As explained above, we determine that Petitioner has established a reasonable likelihood of prevailing in its challenge to at least one claim of the '932 patent, and we are not persuaded to exercise our discretion to deny institution. Accordingly, we institute an *inter partes* review of all challenged claims on all asserted grounds.

V. ORDER

It is:

ORDERED that an *inter partes* review is instituted on all of the challenged claims, i.e., claims 1–32 of the '932 patent, on all corresponding grounds of unpatentability as specified in the Petition and identified in the Table in Section I.B. of this Decision; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '932 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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