UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RPX CORP., ERICSSON INC., AND THE TELEFONAKTIEBOLAGET LM ERICSSON,
Petitioner,

v.

IRIDESCENT NETWORKS, INC.,
Patent Owner.

IPR2017-01661

Patent 8,036,119 B2

PATENT OWNER'S NOTICE OF APPEAL

Pursuant to 35 U.S.C. §§ 141(c), 142, 319 and 37 C.F.R. §§ 90.2(a) and 90.3(a), notice is hereby given that Patent Owner IRIDESCENT NETWORKS, INC. ("Patent Owner") hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision of the Patent Trial and Appeal Board, entered on December 10, 2018, in case IPR2017-01661, Paper 29 (a copy of which is attached as Exhibit A pursuant to Practice Notes to Fed. Cir. R. 15), and from all underlying findings, orders, decisions, rulings, and opinions. This notice is timely filed within 63 days of the December 10, 2018 Final Written Decision, Paper 29. 37 C.F.R. § 90.3.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner indicates that the issues on appeal may include, but are not limited to, whether the Board erred in holding that claims 1-16 of U.S. Patent No. 8,036,119 are unpatentable over the asserted art, and (ii) its findings supporting or relating to the aforementioned issues. Patent Owner also indicates that the issues on appeal include any other issues decided adversely to Patent Owner in any orders, decisions, rulings, or opinions issued in the IPR proceeding.

Pursuant to 37 C.F.R. § 90.2(a), Patent Owner is filing one (1) copy of this Notice of Appeal with the Director and also electronically filing a copy of this

Notice of Appeal with the U.S. Court of Appeals for the Federal Circuit, with the requisite filing fee, in addition to filing this Notice with the Board.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: January 8, 2019

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CERTIFICATE OF SERVICE

Per 37 C.F.R. § 90.2(a)(1), on January 8, 2019, the foregoing Notice of Appeal was filed electronically with the Board in accordance with 37 C.F.R. § 42.6(b)(1), and mailed to the Director via Priority Mail Express in accordance with 37 C.F.R. §§ 1.10 and 104.2 at the following address:

Director of the U.S. Patent and Trademark Office
c/o Office of the Solicitor
P.O. Box 1450, Mail Stop 8
Alexandria, VA 22313-1450

Per 37 C.F.R. § 90.2(a)(2), Fed. R. App. P. 15, and Fed. Cir. Rules 15, 25, and 52, on January 8, 2019 the foregoing Notice of Appeal was electronically filed with the United States Court of Appeals for the Federal Circuit via CM/ECF with appropriate fees paid through pay.gov. Per Fed. Cir. Rule 15(a)(1), one copy of this Notice of Appeal is being filed by hand with the Clerk's Office of the United States Court of Appeals for the Federal Circuit on January 8, 2019.

Per 37 C.F.R. § 42.6(e) and the parties' agreement to accept electronic service, on January 8, 2019 the foregoing Notice of Appeal was served via e-mail on the following attorneys for Petitioner:

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APPENDIX A

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Paper 29
Entered: December 10, 2018

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RPX CORP., ERICSSON INC., AND TELEFONAKTIEBOLAGET LM ERICSSON,
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v.

IRIDESCENT NETWORKS, INC.,
Patent Owner.

Case IPR2017-01661
Patent 8,036,119 B2

Before THOMAS L. GIANNETTI, MATTHEW R. CLEMENTS, and SCOTT B. HOWARD, *Administrative Patent Judges.*

HOWARD, *Administrative Patent Judge*.

DECISION
FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

RPX Corp., Ericsson Inc., and Telefonaktiebolaget LM Ericsson (collectively "Petitioner") filed a Petition (Paper 1, "Pet.") to institute an *inter partes* review of claims 1–16 of U.S. Patent No. 8,036,119 B2 (Ex. 1001, "the '119 patent") pursuant to 35 U.S.C. §§ 311–319. Iridescent Networks, Inc. ("Patent Owner") filed a Patent Owner Preliminary Response. Paper 7 ("Prelim. Resp."). We instituted an *inter partes* review of claims 1–16 on all grounds of unpatentability alleged in the Petition. Paper 9 ("Institution Decision" or "Inst. Dec.").

After institution of trial, Patent Owner filed a Patent Owner Response (Paper 18, "PO Resp."). Petitioner filed a Reply (Paper 23, "Reply"). The Board filed a transcript of the Oral Hearing held on September 24, 2018. Paper 28 ("Tr.").

Petitioner relies on Declarations by Narasimha Reddy, Ph.D. Ex. 1005; Ex. 1040. Patent Owner relies on a Declaration by Dr. Jacob Sharony. Ex. 2001.

The Board has jurisdiction under 35 U.S.C. § 6(b). This Final Written Decision issues pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that challenged claims 1–16 are unpatentable.

A. Related Proceedings

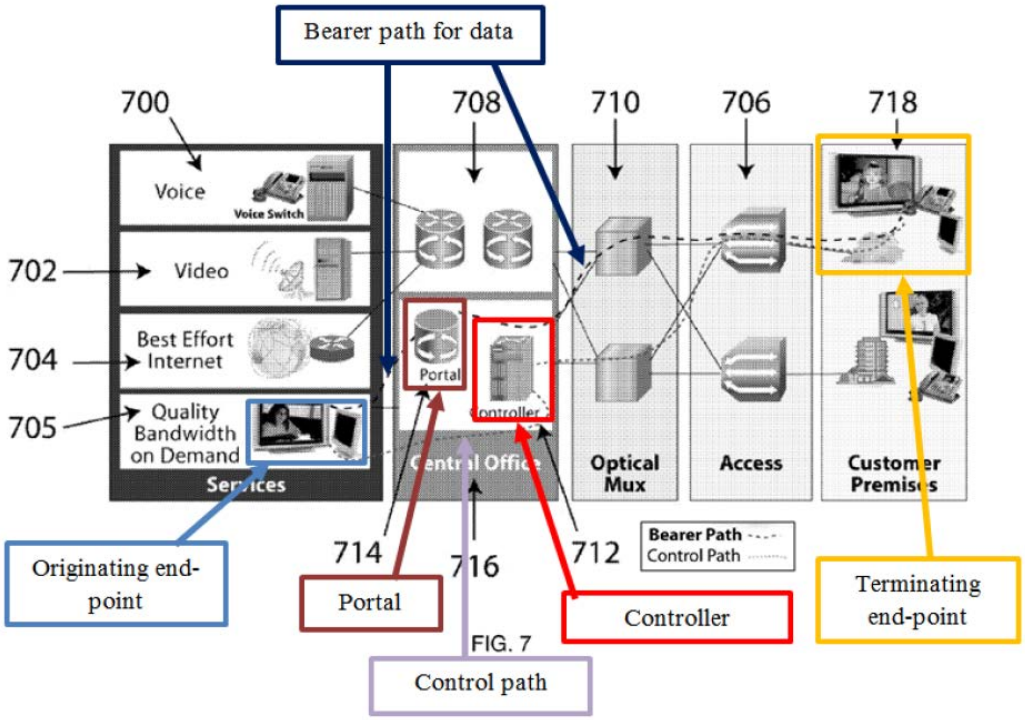
The parties state that the '119 patent is being asserted in the following action: *Iridescent Networks, Inc. v. AT&T Inc.*, No. 6:16-CV-01003 (E.D. Tex.). Pet. 5; Paper 5, 1. In addition, Patent Owner states that the '119 patent is the subject of another petition for *inter partes* review: *RPX Corp. v. Iridescent Networks, Inc.*, Case IPR2017-01662. Paper 5, 1.

Additionally, a related patent, U.S. Patent No. 7,639,612, is the subject of *inter partes* review in *RPX Corp. v. Iridescent Networks, Inc.*, Case IPR2018-00254. *RPX Corp. v. Iridescent Networks, Inc.*, Case IPR2018-00254 (PTAB Nov. 29, 2017) (Paper 3) (Petition).

B. The '119 Patent

The '119 patent relates to a method "of providing guaranteed bandwidth on demand for an end user and/or enterprise." Ex. 1001, 1:19–22. The '119 patent states that it "tak[es] a distributed approach to handling bearer packets, with a physically separated controller and managed portal platform." *Id.* at 4:64–66. "The Controller handles signaling, routing, dynamic bandwidth admission control, codec (video and/or voice) negotiation, end-to-end quality assurance, session management, subscriber data, billing, provisioning and associated operational functions" and the "Portal handles the packet bearer transport with the admission control and routing instructions given by the separate physical Controller." *Id.* at 4:66–5:6.

An example of the architecture of the '119 patent is shown in a version of Figure 7 below which has been annotated by Petitioner.



Pet. 2. This version of Figure 7 of the '119 patent "is a diagram of a Controller and Portal Solution in the Access Network" which has been annotated by Petitioner to highlight various elements including the originating end-point, the portal, the controller, the control path, and the terminating end-point. Ex. 1001, 4:29–30; Pet. 2.

C. The Challenged Claims

Petitioner challenges claims 1–16. Claims 1 and 13 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below:

> 1. A method for providing bandwidth on demand comprising:
>
> receiving, by a controller positioned in a network, a request for a high quality of service connection supporting any one of a plurality of one-way and two-way traffic types between an originating end-point and a terminating endpoint, wherein the request comes from the originating end-point and includes at least one of a requested amount of bandwidth and a codec;

> determining, by the controller, whether the originating end-point is authorized to use the requested amount of bandwidth or the codec and whether the terminating end-point can be reached by the controller;
>
> directing, by the controller, a portal that is positioned in the network and physically separate from the controller to allocate local port resources of the portal for the connection;
>
> negotiating, by the controller, to reserve far-end resources for the terminating end-point; and
>
> providing, by the controller to the portal, routing instructions for traffic corresponding to the connection so that the traffic is directed by the portal based only on the routing instructions provided by the controller, wherein the portal does not perform any independent routing on the traffic, and wherein the connection extending from the originating end-point to the terminating end-point is provided by a dedicated bearer path that includes a required route supported by the portal and dynamically provisioned by the controller, and wherein control paths for the connection are supported only between each of the originating and terminating end-points and the controller and between the portal and the controller.

Ex. 1001, 7:43–8:7.

D. Asserted Grounds of Unpatentability

We instituted trial based on the following grounds of unpatentability:

References	Basis[1]	Challenged Claim(s)
Golden,[2] Fichou,[3] and Lee[4]	§ 103(a)	1-9, 11, and 12

[1] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. § 100 *et seq.* effective on March 16, 2013. Because the '119 patent issued from an application filed before March 16, 2013, we apply the pre-AIA versions of the statutory bases for unpatentability.
[2] US 6,563,793 B1 (issued May 13, 2003) (Ex. 1007, "Golden").
[3] US 2001/0023443 A1 (published Sept. 20, 2001) (Ex. 1008, "Fichou").
[4] US 2006/0133300 A1 (filed Dec. 16, 2005) (Ex. 1009, "Lee").

References	Basis[1]	Challenged Claim(s)
Golden, Fichou, Lee, and Har[5]	§ 103(a)	10 and 13–15
Golden, Fichou, Lee, Har, and Pillai[6]	§ 103(a)	16

Dec. 5, 28.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2016);[7] *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: "1) when a patentee sets out a definition and acts as his own lexicographer," and "2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

[5] US 2003/0219006 A1 (published Nov. 27, 2003) (Ex. 1010, "Har").
[6] US 2003/0133552 A1 (published July 17, 2003) (Ex. 1011, "Pillai").
[7] Per recent regulation, the Board will apply the *Phillips* claim construction standard to petitions filed on or after November 13, 2018. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51340 (Oct. 11, 2018) (to be codified at 37 C.F.R. pt. 42). Because Petitioner filed its petition before November 13, 2018, we apply the BRI standard.

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Although it is improper to read a limitation from the specification into the claims, claims must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004); *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

1. "Directing, by the Controller, . . . [a Portal] . . . to Allocate Local Port Resources of the Portal"

Petitioner proposes a construction for the "directing, by the controller, . . . [a portal] . . . to allocate local port resources of the portal" step recited in claims 1 and 13. Pet. 11–13. According to Petitioner, the directing step "include[s] at least sending an allocation instruction from the controller to the portal, where the allocation instruction results in the portal allocating physical and/or logical elements of the portal." *Id.* at 13 (emphasis omitted) (citing Ex. 1005 ¶¶ 51–55). In our Institution Decision, we determined that "directing, by the controller, . . . [a portal] . . . to allocate local port resources of the portal," does not require an express construction. Inst. Dec. 6–7.

Patent Owner "accepts Petitioner's proposed constructions without prejudice, but reserves its right to present evidence and arguments as to a proper or different construction of the claim terms within the meaning of the '119 Patent should such become necessary at trial." PO Resp. 11–12.[8] Petitioner does not address the construction of this term in its Reply.

[8] Although Patent Owner purported to reserve its right to present evidence and argument regarding a "proper or different construction," (PO Resp. 11–

Having considered the evidence presented, we conclude that no express claim construction of this limitation is necessary to resolve the issues presented in this trial. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

2. "A Required Route . . . Dynamically Provisioned by the Controller"

Although neither party explicitly proposed a construction for this term, we noted in our Institution Decision that Patent Owner's argument on this limitation turned on a particular construction:

> Although Patent Owner does not request an express construction of the claim limitation "a required route supported by the portal and dynamically provisioned by the controller," as recited in claims 1 and 13, Patent Owner's arguments regarding that limitation are premised upon a construction that precludes "exclusively using pre-calculated and pre-computed paths."

Inst. Dec. 7 (citing Prelim. Resp. 27–30).

Patent Owner made similar arguments in *Iridescent Networks, Inc. v. AT&T Inc.*, No. 6:16-CV-01003 (E.D. Tex.) ("*AT&T*"). Ex. 1030, 12–13. In *AT&T*, "[t]he parties dispute whether 'dynamically provisioned by the controller' means the provisioning occurs in response to a request, or whether there can be a connection set up in advance as part of the end-to-end connection." Ex. 1030, 12. The Magistrate Judge in *AT&T* rejected Patent Owner's argument, deciding that the claim and specification does not "exclude the use of pre-existing connections, so long as such connections are

12), by not doing so in the Patent Owner's Response Patent Owner waived its ability to argue an alternative claim construction (*see* Paper 10, 3).

provided to an end-point in response to a request" and "construe[d] the term 'dynamically provisioned by the controller' to mean 'provisioned to an end-point by the controller in response to the request.'" *Id.* at 13. Neither party objected to the Magistrate Judge's claim construction. *See* Ex. 1031.

After reviewing this history, we concluded in our Institution Decision that "the broadest reasonable interpretation of the claim must be broad enough to encompass the claim construction in [*AT&T*]" and construed the phrase "a required route supported by the portal and dynamically provisioned by the controller," as recited in claims 1 and 13, to "encompassing any route provisioned to an endpoint by the controller in response to the request and, specifically, not precluding the use of pre-defined paths made available to particular end-points in response to particular requests." Dec. 9.

Patent Owner did not address our preliminary claim construction in its post-institution filings. *See* PO Resp. 11–12. Petitioner argues that our preliminary construction was correct. Reply 8–11.

"The broadest reasonable interpretation of a claim term may be the same as or broader than the construction of a term under the *Phillips* standard." *Facebook, Inc. v. Pragmatus AV, LLC*, 582 F. App'x 864, 869 (Fed. Cir. 2014) (non-precedential). "In many cases, the claim construction will be the same under [both] standards." *In re CSB-System Int'l, Inc.*, 832 F.3d 1335, 1341 (Fed. Cir. 2016). However, the broadest reasonable construction "cannot be narrower" than the construction under the *Phillips* standard used by district courts. *Facebook*, 582 F. App'x at 869.

We have further considered our construction in light of the arguments and evidence adduced at trial. In light of the foregoing, and for the reasons

stated in our Institution Decision, we maintain our determination based on the full record. *See* Dec. 7–9.

3. "Wherein Control Paths for the Connection Are Supported Only between Each of the Originating and Terminating End-Points and the Controller and Between the Portal and the Controller"

Neither Petitioner nor Patent Owner requested an express construction of this term.

In *AT&T*, Patent Owner agreed that this term means "wherein control paths for the connection are supported only 1) between the originating end-point and the controller; 2) between the terminating end-point and the controller; and 3) between the portal and the controller." Ex. 1030, 18. We agree that this construction is consistent with the ordinary meaning of the words of the claims.

During the Oral Hearing, Patent Owner argued for the first time a new theory: that the claim requires both a control path between the controller and the originating end-point and a control path between the controller and the terminating end-point for the same communication. *See, e.g.*, Tr. 26–29, 32–34.

By not clearly raising the issue in Patent Owner's Response, Patent Owner waived its right to assert a new construction. *See In re Nuvasive, Inc.*, 842 F.3d 1376, 1380–81 (Fed. Cir. 2016) (holding that an argument not presented in Patent Owner's response is waived); *see also Dell Inc. v. Acceleron, LLC*, 884 F.3d 1364, 1369 (Fed. Cir. 2018) (holding that the Board was not obligated to consider an "untimely argument . . . raised for the first time during oral argument"); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,768 (Aug. 14, 2012) ("*No new evidence and*

arguments. A party may rely upon evidence that has been previously submitted in the proceeding and may only present arguments relied upon in the papers previously submitted."). Furthermore, considering the ordinary meaning of the words of the claims, and Patent Owner's agreed upon claim construction in the AT&T litigation, we conclude that the limitation encompasses at least "control paths for the connection are supported only 1) between the originating end-point and the controller; 2) between the terminating end-point and the controller; and 3) between the portal and the controller." Patent Owner does not persuade us of anything in the words of the claims that requires that a control path between the controller and the originating end-point and a control path between the controller and the terminating end-point exist for the same communication.

4. Other Limitations

Having considered the evidence presented, we conclude that no express claim construction of any other limitation is necessary to resolve the issues presented in this trial. *See Vivid Techs.*, 200 F.3d at 803.

B. Legal Principles of Obviousness

An invention is not patentable "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). The question of obviousness is resolved on the basis of underlying factual determinations including the following: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and, (4) where in evidence, objective evidence of nonobviousness such as commercial

success, long-felt but unsolved needs, and failure of others.[9] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we also must "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006)). We analyze the grounds based on obviousness in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). In a given case, "one or more factors may predominate." *Id.*

Petitioner's expert, Dr. Reddy, testifies that

> one of ordinary skill in the art would include someone who has a B.S. degree in Electrical Engineering, Computer Engineering, Computer Science, or equivalent training, as well as two to three years of technical experience in the field of packet-switched networking, such as Internet, local area, and wide area networks.

Ex. 1005 ¶ 4. In the Institution Decision, we adopted Petitioner's definition of the level of ordinary skill in the art. Inst. Dec. 12.

[9] Neither Petitioner nor Patent Owner addresses objective evidence of non-obviousness. Accordingly, we do not address them in deciding the patentability of the claims of the '119 patent.

Neither Patent Owner nor Petitioner addresses the level of skill in their post-institution papers. Moreover, Patent Owner's declarant, Dr. Sharony, adopts Petitioner's proposed level of ordinary skill in the art for his testimony. *See* Ex. 2001 ¶ 18.

Based on the complete record, we see no reason to modify our preliminary determination of the level of ordinary skill in the art.

D. Obviousness over Golden, Fichou, and Lee

1. Summary of Golden

Golden "relates to a method and apparatus for providing guaranteed quality and/or class of service (QOS/COS) in a local or wide area network or across networks." Ex. 1007, 1:11–14. More particularly, Golden relates "to a technique for adapting an existing packet-switched/routed infrastructure so that on-demand reserved-bandwidth virtual circuit connections with guaranteed QOS and/or COS between any endstations within the network or between networks can be established, while providing interoperation with and improving the performance of existing reservation protocols and frame formats." *Id.* at 1:14–21. Figure 4 shows an embodiment of the local area network "designed to provide local network interoperation with application layer reservation protocols such as RSVP" includes various components such as "enterprise control point (ECP) 50, host 52, router 54 and intermediate switches 56." *Id.* at 7:40–46." Figure 4 is shown below.

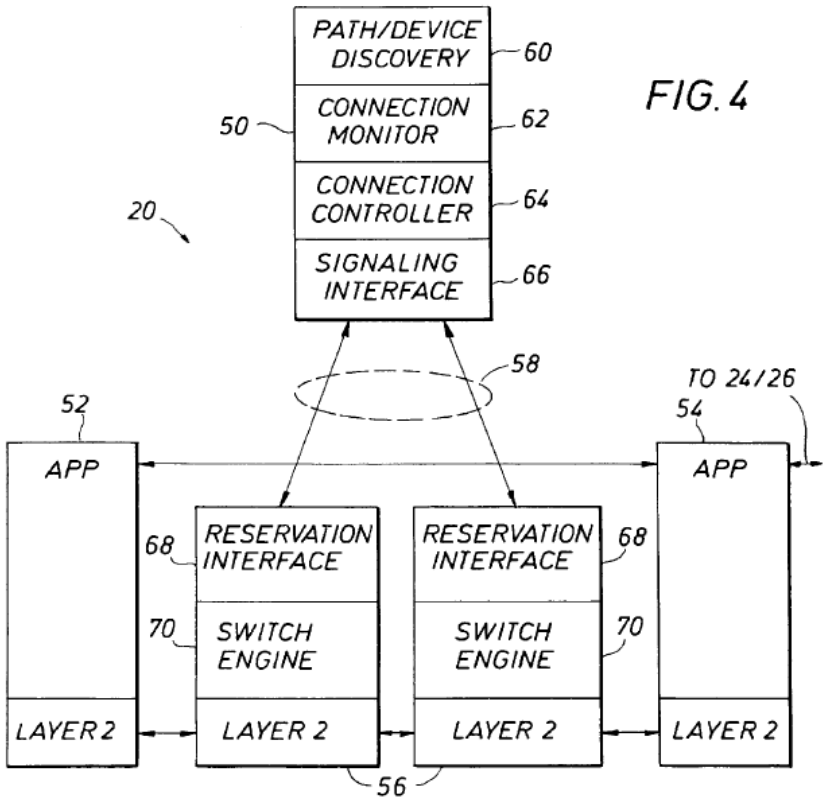


FIG. 4

Figure 4 "illustrates a network that provides interoperation with internetwork reservation protocols such as RSVP." *Id.* at 6:31–32. As shown in Figure 4, host 52 is located at an end-point. *Id.* at Fig. 4.

In addition to conventional host 52, Golden also discloses "hosts 102 that have been configured with enhanced functionality for directly requesting a reserved connection from ECP 50 similarly as described in the co-pending application Ser. No. 09/060,520." *Id.* at 13:22–30. The enhanced functionality "host 102 includes a daemon process 106 that processes user requests for reserved connections with other hosts within the network or in other networks. In accordance with requested connections processed by daemon process 106, signaling interface 104 sends connect/disconnect messages to ECP 50 via reserved signaling channel 58." *Id.* at 13:31–37. Golden Figure 9 is shown below.

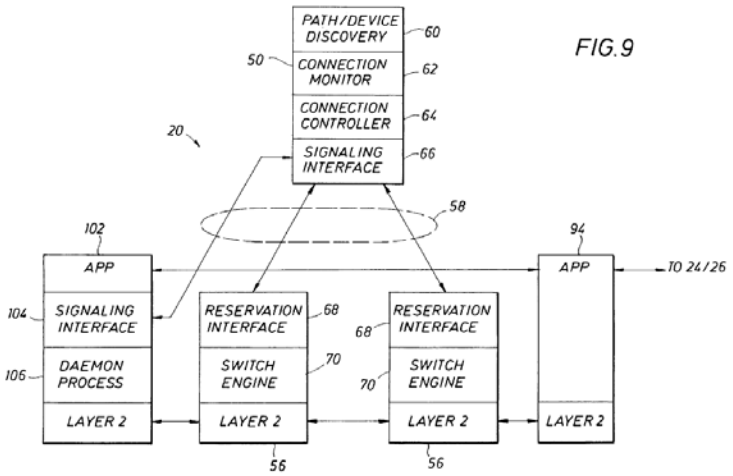


FIG.9

Golden Figure 9 "illustrates another example of a network that provides guaranteed COS while providing interoperation with IEEE 802.lP/Q frame formats." *Id.* at 6:49–51. As illustrated in Golden Figure 9, enhanced host 102 is communicating with conventional host/router 94. *Id.* at 13:37–39, Fig. 9. However, Golden states that "it should be apparent that host 102 can also communicate with other hosts similarly upgraded as host 102." *Id.* at 13:39–41.

2. Summary of Fichou

Fichou "relates in general to reserving virtual connections having a designated Quality of Service (QoS) in an Internet Protocol (IP) network, and relates in particular to a system and method for reserving a QoS designated virtual connection in a network equipped with a reservation server." Ex. 1008 ¶ 2. Fichou describes a system in which "a reservation server 26 is included within the data transmission system. Reservation server 26 may be accessed by any workstation such as the source workstation 10 through several intermediary nodes such as backbone nodes 28 and 30." *Id.* ¶ 21. Source workstation 10 "may deliver a reservation request to reservation server 26 when required to accommodate a Quality of

Service (QoS) requirement for a particular application." *Id.* ¶ 22. The reservation request message includes "the necessary parameters such as destination, bandwidth, Quality of Service, type protocol or port number." *Id.* ¶ 23.

"Reservation server 26 performs user authentication and determines whether or not the reservation can be granted to [the] user." *Id.* ¶ 22. Reservation server 26 makes that determination using "database 50 which defines for each user which kind of request he is allowed to perform. The result of such a verification may be in terms of bandwidth required for a call, destination allowed, QoS, etc." *Id.* ¶ 25.

3. Summary of Lee

Lee "relates to management and control of a Multi Protocol Label Switching (MPLS) network, and more particularly, to an apparatus and a method of centralized control of a[n] MPLS network capable of minimizing a message exchange between respective switches in the MPLS network." Ex. 1009 ¶ 3. The "core of the MPLS network [in Lee] is composed of label switching network elements such as an IP router based switch or an ATM switch based MPLS switch (hereinafter called an MPLS switch)." *Id.* ¶ 28. "Multimedia service data inputted via the IP router or ATM switch connected to the edge of the MPLS network is transferred via a Label Switched Path (LSP) set on the MPLS network, possibly providing the guarantee of a Quality of Service (QoS) for multimedia services." *Id.* The "LSP computation is conducted . . . by the centralized control apparatus 200." *Id.* ¶ 34.

"The centralized control apparatus 200 . . . transmits the calculated LSP information to the LSP activation section 304," which "conducts an

LSP activation for transmitting the LSP information set to the respective MPLS switches." *Id.* ¶ 57. Information transmitted to the respective MPLS switch includes "Label Forwarding Information Base (LFIB) information." *Id.* That "LFIB information is the MPLS label switching information that the respective MPLS switches should proceed and which can include an input label, an output label, an output interface and so on." *Id.* ¶ 58.

4. Claim 1

As discussed below, we find that all of the claim limitations required by claim 1 are found in the teachings of Golden, Fichou, and Lee, and further, it would have been obvious to a person of ordinary skill to combine them in the manner suggested by Petitioner. Pet. 13–48; *see also* Ex. 1005 ¶¶ 70–222. Having considered the entirety of the evidence before us, we find Petitioner has demonstrated by a preponderance of the evidence that claim 1 of the '119 patent would have been obvious to a person of ordinary skill in the art based on the combined teachings of Golden, Fichou, and Lee.

a. Undisputed Claim Limitations

Petitioner relies on Golden for many of the limitations recited in claim 1. *See* Pet. 24–48. Petitioner argues Golden teaches "providing bandwidth on demand" as provided in the preamble, along with the receiving, directing, and negotiating steps recited in claim 1. *Id*. at 24–35, 37–42. Petitioner further argues that the combination of the teachings of Golden and Fichou teaches the determining step. *Id.* at 35–37. Patent Owner does not challenge Petitioner's contentions regarding these limitations.

Based on the evidence before us, and reasons set forth in the Petition (Pet. 24–42), we find that Golden teaches "providing bandwidth on demand" as provided in the preamble, along with the receiving, directing, and

negotiating steps recited in claim 1, and that the combination of teachings of Golden and Fichou teaches the determining step recited in claim 1.

We address the remaining steps of claim 1, which Patent Owner does contest, in turn.

b. *"providing, by the controller to the portal, routing instructions for traffic corresponding to the connection so that the traffic is directed by the portal based only on the routing instructions provided by the controller, wherein the portal does not perform any independent routing on the traffic"*

a. Petitioner's Arguments

Petitioner argues a person of ordinary skill in the art would have recognized that Golden's ECP 50 "performs centralized control functions relating to bandwidth reservation, as well as provides the results of those control functions as instructions to the switches in the determined path (for a reserved connection), and that the instructions affect the treatment of packets received at the recipient switches." Pet. 42–43 (citing Ex. 1005 ¶¶ 189–192). Petitioner further argues that it would have been obvious to a person of ordinary skill in the art that the switches could be MPLS switches and, to the extent Golden is silent as to particular MPLS instructions, Lee teaches the details. *Id.* at 43.

Petitioner further argues Lee teaches a centralized controller that performs path (LSP or Labeled Switched Path) calculations and that the centralized controller transmits information to the MPLS switches, including LFIB information. *Id.* at 43–44 (citing Ex. 1009 ¶¶ 16, 33–34, 57; Ex. 1005 ¶¶ 198–200); Reply 20–21. Petitioner argues a person of ordinary skill in the art would have recognized that Lee's LFIB information would be "used

by a switch for lookups when a labeled packet is received" and "constitutes 'routing instructions.'" *Id.* at 44 (citing Ex. 1009 ¶ 58; Ex. 1005 ¶¶ 201–202). Petitioner also argues that Patent Owner's own evidence and declarant confirm that, as of the filing date of the '119 patent, MPLS switches could use LFIB information instead of a traditional IP lookup. Reply 21–22 (citing Ex. 1038, 51:6–20, 57:15–58:10; Ex. 1040 ¶ 29; Ex. 2001 ¶ 58; Ex. 2003, 1, 2)).

Petitioner argues that because "[t]raffic that qualifies under the reservation request (i.e., 'traffic corresponding to the connection'), as taught by Golden, is directed by the switch based only on the LFIB information as taught by Lee" (*id.* at 44 (citing Ex. 1009 ¶ 58)), "the corresponding labeled packets are routed based only on the routing determined by the centralized control point taught by Golden in combination with Lee" (*id.* (citing Ex. 1005 ¶ 203)). Petitioner further argues that because "MPLS switches use the LFIB instead of a routing table when a labeled packet is received on one of their ports, . . . Lee teaches that the MPLS switches do not perform independent routing on labeled packets when there is an LFIB that pertains to the labeled packets." *Id.* at 45 (citing Ex. 1005 ¶¶ 207, 218); *see also* Reply 22 (citing Ex. 1038, 51:6–20) (discussing Dr. Sharony's testimony that an MPLS switch relies on the label to forward a packet).[10]

[10] Petitioner also addresses arguments made by Dr. Sharony in his testimony that were not included in Patent Owner's Response. *See* Reply 22–24. Because we do not incorporate arguments from testimony into the Response and Patent Owner waived the arguments by not raising them in the Response, Petitioner's arguments responding to them are moot. *See* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document."); Paper 10, 3 (waiver of arguments not raised).

b. Patent Owner's Arguments

Patent Owner argues Golden's "'bandwidth reservation requests' are not routing instructions." PO Resp. 14. According to Patent Owner, bandwidth reservation requests and routing instructions are "technically distinct concepts." *Id.* Additionally, Patent Owner argues that to the extent Petitioner asserts the MPLS labels are routing instructions, "Petitioner did not identify any teaching in Golden establishing that MPLS labels are provided 'by the controller to the portal,' as required by the claims of the '119 Patent." *Id.* (emphasis omitted). Instead, Patent Owner argues, Golden teaches away from the claimed invention by having the switches make the forwarding decisions. *Id.* at 14–17 (citing Ex. 1007, 8:40–63, 11:25–47, Fig. 9).

Patent Owner further argues that Lee does not cure the deficiencies noted above. *Id.* at 17–20. Specifically, Patent Owner argues Lee addresses inter-router communication to solve a stacking problem, not the functioning of routers. *Id.* at 18–19 (citing Ex. 1009 ¶¶ 30, 103, 104).

Patent Owner also argues Lee "***does not*** say that the LFIB information is the 'only' information received by the switch, let alone that routing by a switch is 'based only on the LFIB information.'" *Id.* at 19 (citing Ex. 1009 ¶ 58). Instead, Patent Owner argues "Lee teaches that switches need not route traffic 'based only on the routing instructions provided by the controller' because Lee explicitly teaches that the switches can receive an LSP from the 'MPLS OAM function' instead of from the centralized control apparatus." *Id.* at 20 (citing Ex. 1009 ¶ 66) (emphasis omitted).

c. Our Analyis

Based on the record and the parties' arguments, we are persuaded that the combination of Golden and Lee teaches the providing step recited in claim 1. Golden teaches that the ECP (which Petitioner identifies as the "controller") sends bandwidth reservation requests via reserved signaling channel 58 to the interface function of the switches. Ex 1007, 11:8–24; *see also* Ex. 1005 ¶ 189. That bandwidth reservation request includes both the source and destination of the connection. Ex. 1007, 10:31–36. Based on that teaching, we are persuaded by Dr. Reddy's testimony that a person of ordinary skill in the art would have appreciated that Golden teaches the ECP (controller) performing a centralized bandwidth reservation function and transmitting the results of that function to the appropriate switches in the path. Ex. 1005 ¶ 190. Furthermore, we are persuaded that a person of ordinary skill in the art would have understood that the instructions sent by the ECP (controller) "affect the treatment of packets received at the recipient switches." *Id.*

Additionally, although Golden focuses on the RSVP protocol, Golden explicitly states that other protocols could be used: "Although the principles of the invention can be applied to internetwork signaling protocols other than RSVP, for clarity only RSVP will be described in detail." Ex. 1007, 8:1–3. Golden identifies MPLS as one of these other signaling protocols:

> *Moreover, other protocols have been or are in the process of being developed* to improve and provide differentiated classes of service (COS) between networks, and attempts have been made to integrate these proposals with RSVP. *Multiprotocol Label Switching (MPLS) is a scheme in which labels are associated with streams of packets between communicating hosts*. These labels are used by MPLS-capable routers in the path between the hosts to cause all packets in the stream to be forwarded the same

> way. This further allows hosts to use predetermined explicit routing.

Id. at 2:22–31 (emphasis added).

Lee provides details on the MPLS instructions that would be supplied by the ECP/controller. Specifically, Lee teaches that a "centralized control apparatus" managing an MPLS network with "at least one label switching network element" provides instructions "for controlling and managing the MPLS network." Ex. 1009 ¶¶ 16, 33. The centralized control system computes a Label Switched Path (LSP), which is then sent to the respective MPLS switches. *Id.* ¶¶ 34, 57; *see also* Ex. 1005 ¶¶ 198–199. Included in the information sent to the switches is Label Forwarding Information Base ("LFIB") information, which a person of ordinary skill in the art would recognize is used to forward packets instead of an IP lookup in a traditional routing table. Ex. 1009 ¶¶ 57–58; Ex. 1005 ¶¶ 200–202; Ex. 2003, 1 ("Forwarding labeled packets is quite different from forwarding IP packets in that not only is the IP lookup replaced with a lookup of the label in the label forwarding information base (LFIB) . . . ."); 2 ("When a router receives a labeled packet, the lookup is done in the LFIB of the router."). This finding is also supported by Dr. Sharony's cross-examination testimony:

> Q. Okay. So an MPLS, then, the switch at the router is going to use the label instead of an IP address to forward the packet, right?
>
> A. Yes.
>
> Q. And it has to use that label, right? If a packet is an MPLS packet, then the router has to use that label to forward the packet?
>
> A. Yes. So MPLS switch will use the label. Some switches can support IP and MPLS, *but if it's an MPLS switch, it relies on the label*.

Ex. 1038, 51:6–20 (emphasis added).

Patent Owner focuses on both Golden and Lee individually and does not address the combined teachings Petitioner relies upon. *See* PO Resp. 14–17 (focusing on Golden alone), 18–20 (focusing on Lee alone). We do not find these arguments to be persuasive. Nonobviousness cannot be established by addressing the references individually when the obviousness contention is predicated upon a combination of prior art disclosures. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). The test for obviousness is not whether the claimed invention is expressly suggested in any one or all of the references, but whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the combined teachings of those references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Moreover, Patent Owner's arguments regarding Lee are not convincing. They do not address the sections cited by Petitioner; instead, they focus on an alternative embodiment in which non-MPLS switches are used. Specifically, Petitioner relies on Lee paragraphs 16, 33, 34, 57, and 58. Pet. 43–44. Patent Owner does not address those paragraphs and presents no evidence demonstrating why the cited sections do not support Petitioner's arguments. Instead, Patent Owner cites to paragraph 103, which discusses what happens when a non-MPLS network is used. PO Resp. 18 (citing Ex. 1009 ¶ 103). Patent Owner similarly cites to various paragraphs discussing how to cure a stacking problem. *Id.* at 18–19. That evidence is inapposite to Petitioner's arguments regarding MPLS networks.

Moreover, as the Federal Circuit has recognized, a method is obvious even if it is only performed in some circumstances, but not others. *See*

Unwired Planet, LLC v. Google Inc., 841 F.3d 995, 1002 (Fed. Cir. 2016) ("It does not matter that the use of alphabetical order for locations would not always result in farther-over-nearer ordering. It is enough that the combination would sometimes perform all the method steps, including farther-over-nearer ordering.") (citing *Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1326 (Fed. Cir. 2003)). Accordingly, Patent Owner's argument focusing on one embodiment which may not teach the limitation, while ignoring a second embodiment which does teaches the limitation, is not persuasive.

We also disagree with Patent Owner's argument that the evidence in the record does not support Petitioner's argument "that traffic 'is directed by the switch based only on the LFIB information as taught by Lee.'" PO Resp. 19 (quoting Pet. 44) (emphasis omitted). Dr. Sharony testified in his direct testimony that "the paragraph petitioners cite [paragraph 58] does not say that the LFIB information is the 'only' information received by the switch, let alone that routing by a switch is 'based only on the LFIB information as taught by Lee.'" Ex. 2001 ¶ 62. However, as discussed above, Dr. Sharony changed his testimony during cross-examination and agreed with Petitioner that when an MPLS switch is used, the switch relies on the label to forward the packet. Ex. 1038, 51:6–20. Additionally, evidence submitted by Patent Owner further demonstrates that MPLS switches forward packets based on the labels, which are included in the LFIB information. *See* Ex. 2003, 1, 2 ("When a router receives an IP packet, the lookup done is an IP lookup. In Cisco IOS, this means that the packet is looked up in the CEF table. When a router receives a labeled packet, the lookup is done in the LFIB of the router. The router knows that it receives a

labeled packet or an IP packet by looking at the protocol field in the Layer 2 header."). Accordingly, we give little weight to Dr. Sharony's direct testimony on this issue as it is contradicted by his cross-examination and other evidence in the record. *See In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) ("[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations."). Instead, we credit Dr. Reddy's testimony and Dr. Sharony's cross-examination testimony, which are consistent with each other and with the other evidence in the record. We find that evidence establishes that the LFIB alone is used to route the traffic and, therefore, teaches the recited "based only on the routing instructions provided by the controller."

In addition we find no evidentiary support for Patent Owner's teaching away arguments. PO Resp. 14–17. A reference teaches away if "a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed Cir. 1994). Merely discussing a different embodiment "does not teach away. . . [as] it merely expresses a general preference for an alternative invention but does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)). Although Patent Owner asserts that both Golden and Lee teach away from the claimed features, Patent Owner does not show us where they criticize, discredit, or otherwise discourage the claimed invention. For example,

Patent Owner's citation to Lee focuses on an alternate embodiment in which an "OAM function *could* be implemented." PO Resp. 20 (citing Ex. 2001 ¶ 67). Similarly, Patent Owner cites sections from Golden that relate to an embodiment using conventional switches, not MPLS switches. *See id.* at 15–16 (citing Ex. 1007, 8:49–63, 11:25–47). Those discussions of alternate embodiments do not teach away from the claimed invention. *See DePuy*, 567 F.3d at 1327 ("A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not "criticize, discredit, or otherwise discourage" investigation into the invention claimed." (quoting *Fulton*, 391 F.3d at 1201)); *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 964 (Fed. Cir. 2014) (stating that "mere disclosure of alternative preferences" does not teach away).

Based on this record, we find that the combination of the MPLS switch instructions from Lee with the centralized reservation system of Golden teaches "providing, by the controller to the portal, routing instructions for traffic corresponding to the connection so that the traffic is directed by the portal based only on the routing instructions provided by the controller, wherein the portal does not perform any independent routing on the traffic," as recited in claim 1.[11]

[11] Because we find the combination of Golden and Lee teaches this claim limitation, Petitioner's and Patent Owner's arguments directed to Golden alone are moot.

c. "and wherein the connection extending from the originating end-point to the terminating end-point is provided by a dedicated bearer path that includes a required route supported by the portal and dynamically provisioned by the controller"

a. Petitioner's Arguments

Petitioner argues "Golden teaches that the connection from originating end-point to terminating end-point is provided by a dedicated bearer path" and the path "becomes a dedicated bearer path in response to the ECP sending bandwidth reservations to each switch in the path." Pet. 45–46 (citing Ex. 1007, 5:47–50, 9:66–10:3, 10:26–29,14:63–15:1; Ex. 1005 ¶¶ 209–211). Petitioner further argues "Golden teaches that the part of the path through the portal is a required route supported by that portal." *Id.* at 46 (citing Ex. 1007, 11:8–24; Ex. 1005 ¶ 212).

Petitioner also argues the connection is "dynamically provisioned." Specifically, Petitioner argues "Golden teaches that the connection is dynamically provisioned by the controller in establishing 'on-demand reserved-bandwidth virtual circuit connections with guaranteed QOS and/or COS between any endstations within the network or between networks.'" *Id.* at 47 (citing Ex. 1007, 1:11–21) (emphasis omitted); *see also* Reply 14–15. Petitioner further argues "Golden details how the connections are 'on-demand' when describing the establishing of the reservations all along the path from end-to-end for connections in response to a request (*see, e.g.*, [Ex. 1007)], 10:27–30), as well as tearing down connections when they are done." Pet. 47; s*ee also* Reply 11–12.

b. Patent Owner's Arguments

Patent Owner argues Golden teaches "non-dynamic, 'dedicated line, virtual private networking services.'" PO Resp. 21. According to Patent

Owner, "[r]ather than provision a path dynamically, Golden pre-calculates a ***static list*** of dedicated lines prior to receiving any connection request." *Id.* (some emphasis omitted). Patent Owner further argues "Golden explicitly teaches that every path or route is pre-computed and therefore cannot be provisioned 'dynamically.'" *Id.* (citing Ex. 2001 ¶ 76). Patent Owner also argues that the '119 patent teaches away from ands claims a very different system than the one disclosed in Golden. *Id.*

c. Petitioner's Reply Arguments

Petitioner argues Patent Owner's arguments ignore the undisputed construction applied both by the district court and the Board in the Decision. Reply 11. Petitioner also argues Patent Owner "misrepresents" Golden as "disclos[ing] non-dynamic, 'dedicated line, virtual private networking services.'" *Id.* at 13 (quoting PO Resp. 21). According to Petitioner, "[n]owhere does Golden state that it deals with 'dedicated line' services, nor would a POSITA have understood either Golden's paths in the path list or the 'reserved connection' on a selected path as being a 'dedicated line.'" *Id.* (quoting Ex. 1040 ¶ 11). Petitioner argues the definition of a dedicated line in the '119 patent demonstrates why Golden does not teach using a dedicated line. *Id.* at 12–16.

d. Our Analysis

We agree with Petitioner. Patent Owner's arguments are based on a claim construction of "dynamically provisioned" that precludes exclusively using pre-calculated and pre-computed paths. As discussed *supra*, we do not accept that construction. Instead, we find that the broadest reasonable construction of that term "encompass[es] any route provisioned to an endpoint by the controller in response to the request and, specifically, not

precluding the use of pre-defined paths made available to particular end-points in response to particular requests." Section II.A.2. Because Patent Owner's arguments are based on an incorrect claim construction, they are not commensurate with the scope of the claims, and the conclusions that follow are not convincing. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

Petitioner's arguments, in contrast to Patent Owner's, are premised on a claim construction that we have found to be correct, and persuade us that Golden teaches the disputed limitation. Golden teaches that when a request is made for a bandwidth reservation, "[i]f an available path can provide the requested service for the connection, connection controller function 64 [of the ECP] sends a bandwidth reservation to each switch 56 in the path via 30 signaling interface function 66 and signaling channel 58." Ex. 1007, 10:26–29; *see also* Ex. 1005 ¶¶ 213–215. Although the route may be chosen from a precomputed list, the connection is "dynamically provisioned," as recited in claim 1, because the route is provisioned to an endpoint by the controller in response to a request. *See* Section II.A.2 (construing "dynamically provisioned").

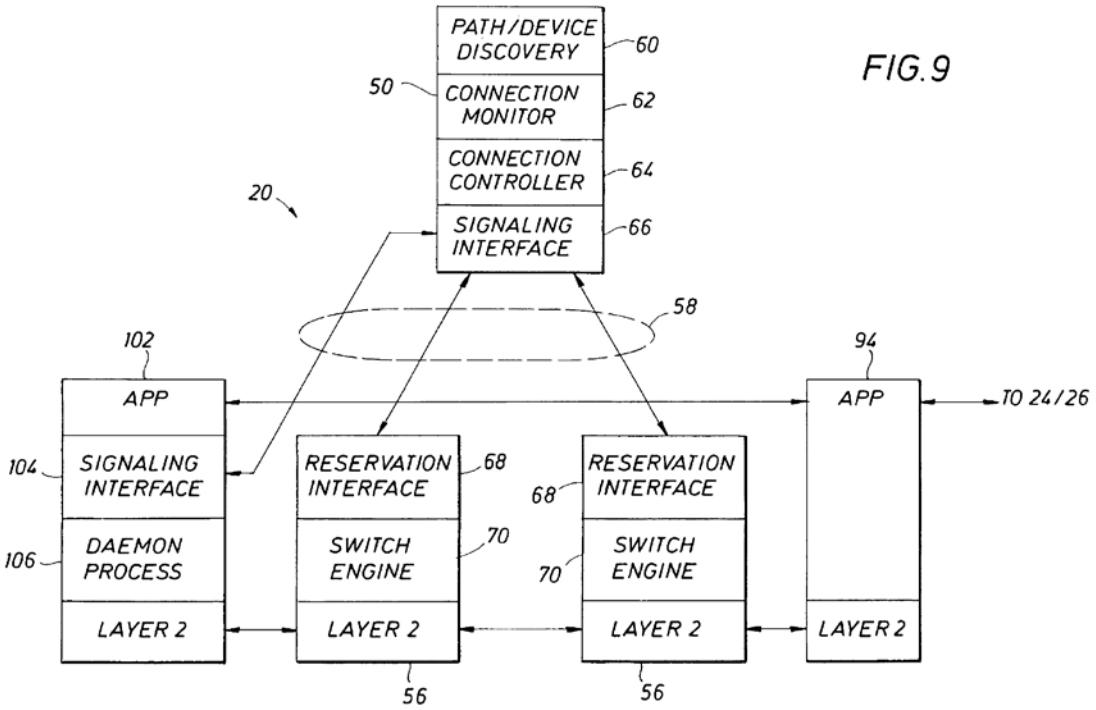
Accordingly, based on the evidence before us, we are persuaded that Golden teaches "and wherein the connection extending from the originating end-point to the terminating end-point is provided by a dedicated bearer path that includes a required route supported by the portal and dynamically provisioned by the controller" as recited in claim 1.

d. "wherein control paths for the connection are supported only between each of the originating and terminating end-points and the controller and between the portal and the controller"

a. Petitioner's Arguments

Petitioner argues Golden teaches "wherein control paths for the connection are supported only between each of the originating and terminating end-points and the controller and between the portal and the controller," as recited in claim 1. Pet. 47–48. Petitioner's argument is premised on a modification to the structure shown in Figure 9 of Golden.

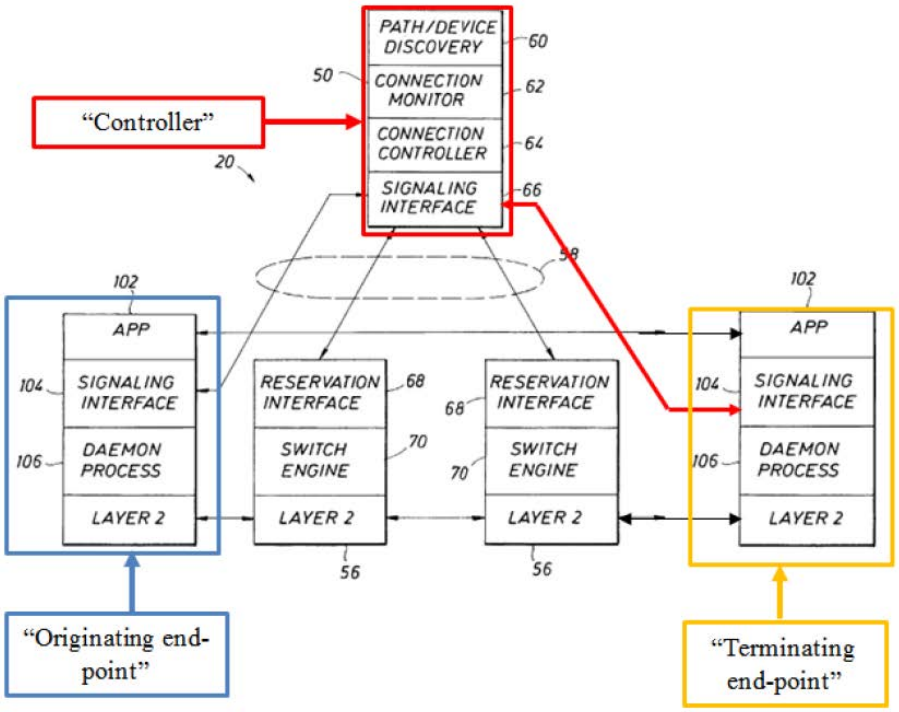
Golden Figure 9 is reproduced below.



Ex. 1007, Fig. 9. Golden Figure 9 "illustrates another example of a network that provides guaranteed COS while providing interoperation with IEEE 802.lP/Q frame formats." *Id.* at 6:49–51.

Petitioner argues "Golden teaches an originating end-point and a terminating end-point" and that "[t]he endstations are illustrated in FIG. 9 as 'hosts 102' and 'conventional host/router 94.'" Pet. 26 (citing Ex. 1007, 8:27–30, 13:25–27, 13:37–38).

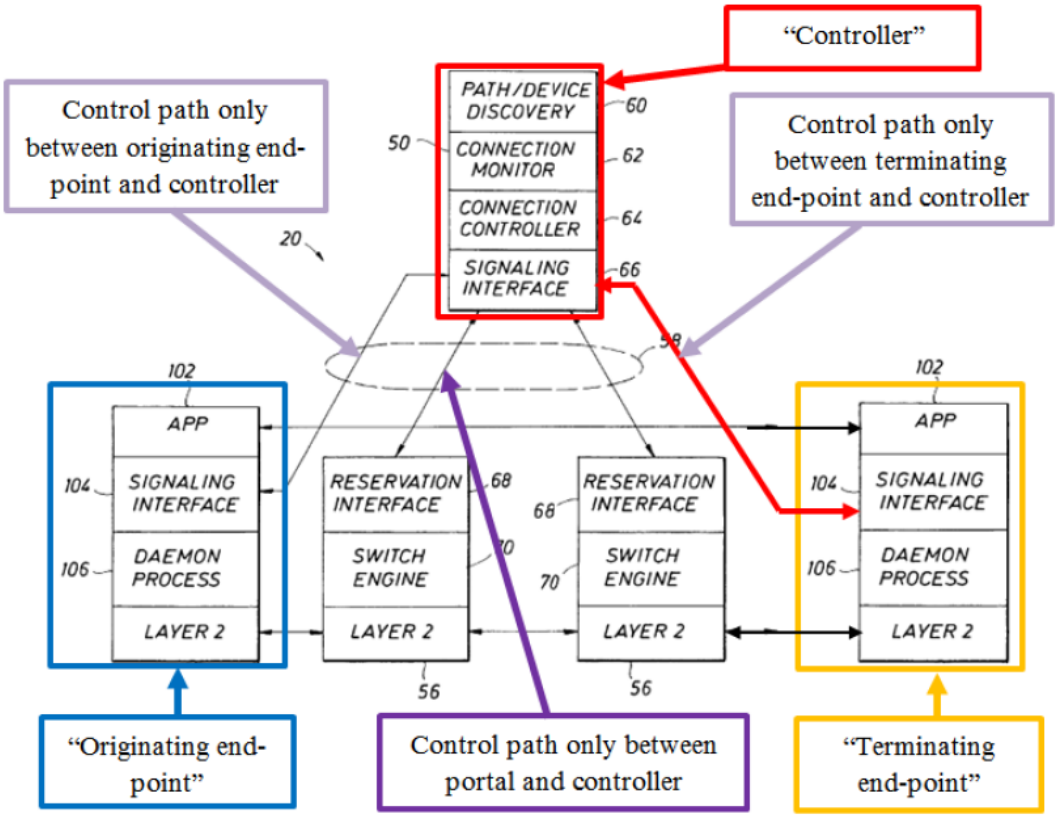
Petitioner further argues Golden "teaches that destination host 94 can be an upgraded host 102: 'host 102 can also communicate with other hosts similarly upgraded as host 102.'" *Id.* (quoting Ex. 1007, 13:36–40). A copy of modified Figure 9 is reproduced below.



Id. at 27. Petitioner contends the above figure shows the replacement of router 94 at the terminating end-point with an enhanced host 102 and has been annotated by Petitioner to identify what Petitioner contends is the originating end-point, the terminating end-point, and the controller. *Id.* Petitioner further argues "Dr. Sharony admitted in deposition that such signaling channel would indeed exist between ECP 50 and an upgraded host

102 on the right-hand side of FIG. 9." Reply 17–18 (citing Ex. 1038, 45:9–13).

Petitioner argues Golden teaches that control paths for the connection are supported only between each of the end-points and the controller via reserved signaling channel 58. Pet. 47–48 (citing Ex. 1007, 13:34–37, 14:2–4, 14:37–40; Ex. 1005 ¶¶ 217–219). Petitioner further argues "the control paths for the connection are supported only between the portal and the controller." *Id.* (citing Ex. 1007, 8:16–19, 9:53–57; Ex. 1005 ¶¶ 220–221). Petitioner further directs us to an annotated version of modified Golden Figure 9, reproduced below.



Id. Annotated modified Figure 9 shows a version of Figure 9 in which both end-points are enhanced hosts 102 and has been annotated by Petitioner to

show the control paths between the end-points and the controller and between the portals and the controller. *Id.*

b. Patent Owner's Arguments

Patent Owner argues:

> Using "smoke and mirrors," Petitioner suggests Golden includes a critical feature it simply does not disclose. Specifically, Petitioner "doctored" Fig. 9 of Golden to include a feature (specifically a red arrow between 66 and 104 as shown below) that is not present in Golden . . . . Petitioner then misquotes Golden, stating: "[s]ignaling interface process 104 [of the terminating end-point] receives requests for participation in, or termination of, a reserved connection from ECP 50 via signaling channel 58." (Petition at 47-48 (purporting to quote ERIC-1007 at 14:2-4).) The text added in brackets - "[of the terminating end-point]" - is neither disclosed nor implied by Golden. The above quoted passage is describing only the requesting host on the left side of Figure 9, and has nothing to do with describing the terminating node on the right side of Figure 9 of Golden. EX. 2001 at ¶ 82.

Id. at 21–22 (annotated and modified version of Golden Figure 9, shown above, omitted).[12] As Patent Owner explained during the Oral Hearing, this argument refers to Patent Owner's contention—which was not clearly set forth in the Patent Owner's Response—that even the modified Figure 9 does not teach *both* a control path between the originating end-point and the controller *and* a control path between the terminating end-point *for the same communication*. Tr. 32–34, 36; *see also* Ex. 1038, 48:25–50:5, 84:23–88:9

[12] Because there is no discussion of the same communication, we do not believe that Patent Owner's Response clearly sets forth Patent Owner's argument with sufficient clarity to place Petitioner on notice. However, the failure to do so was harmless in light of Dr. Sharony's re-direct testimony, discussed below.

(Dr. Sharony's testimony regarding multiple communications). Dr. Sharony testified on redirect examination that the two control paths shown in modified Figure 9 do not relate to the same communication:

> Q. From your perspective of your review of this reference, can that occur?
>
> A. You can -- what is showing in the figure, so here it go from 102 to 94. So this is basically one way, from the left to the right of this figure.
>
> If you wanted at the very same time to have a bidirectional communication and you replace 94 with 102, 102 would have to follow the very same steps in order to reserve bandwidth from the right side to the left side. This is the unidirectional that I mentioned. So does this answer your question?
>
> Q. So it may be happening at the same time, but it's happening in connection with two different communications?
>
> A. Completely two different. As I said, communication from A to B and communication from B to A are completely different. But, of course, it can happen.

Ex. 1038, 87:14–88:9. Patent Owner also argues Fichou does not teach this limitation. PO Resp. 23–24.

c. Our Analysis

We find that Petitioner has sufficiently demonstrated that Golden teaches the specific modification to Golden Figure 9 including the use of upgraded host 102 as the terminating end-point and control path 58 extending from the ECP 50 to the terminating end-point. *See* Ex. 1007, 13:36–40; Ex. 1038, 45:9–13. Although neither the upgraded host for the terminating end-point nor the control path between that upgraded host and the controller is shown in Golden Figure 9, Golden explicitly states that such a modification both to the host and to the communication channel could be made: "Although [Figure] 9 illustrates an example where host 102 is

communicating with a conventional host/router 94, it should be apparent that host 102 can also communicate with other hosts similarly upgraded as host 102." Ex. 1007, 13:37–41.

Moreover, both experts testified that if an upgrade host 102 was used to replace conventional host 94, the signaling interface 104 of the upgraded host 102 could communicate with signaling interface 66 of the ECP through signaling channel 58. Ex. 1038 (Sharony Depo.), 45:9:13. Specifically, Dr. Reddy, after discussing the teachings of Golden (Ex. 1040 ¶¶ 16–17) testified

> that a host 94 "similarly upgraded" as host 102 on the right hand side of FIG. 9 would include the daemon process 106 and the signaling interface 104. Moreover, as I explained in my prior declaration, the signaling interface 104 on the now-upgraded right hand side of FIG. 9 would likewise have a corresponding signaling channel 58 to ECP 50, with which the right hand side host 102 would also communicate with the ECP 50 (sending and receiving). *See* Ex. 1005, ¶ 76. Such communication includes either sending or receiving to/from (respectively) the ECP 50.

Ex. 1040 ¶ 18. Similarly, Dr. Sharony agreed in cross-examination that "if you upgraded 94 to be a 102, then its signaling interface 104 could communicate in both directions through channel 58 with signaling interface 66." Ex. 1038, 45:9–13.

Patent Owner's arguments are not persuasive because they are not commensurate with the claims. The claims cannot require both a control path from the originating endpoint to the controller and a control path from the terminating endpoint to the controller *for the same communication* because the claim encompasses a "connection supporting . . . one-way . . . traffic types." which would not require a control path from the terminating endpoint back to the controller *for the same communication*. Ex. 1001, 7:47.

The connection may include multiple communications, such as multiple communications involved in telemedicine, multi-player gaming, and video conferencing. *See* Ex. 1001, 1:61–66, Fig. 3. Specifically, a connection as used in the claims is broad enough to encompass two-way traffic types in which data goes from both the originating end-point (end-point A) to the terminating end-point (end-point B) and vice-a-versa.[13] *See id.* at 7:45-51 (claim 1 reciting "one-way and two-way traffic types).

Even assuming the claims required both control paths for the same connection, we would still be persuaded that the limitation is taught because Golden teaches two-way communication such a "teleconference[ing]" and "video or audio conference[s]." Ex. 1007, 14:26–30, 60–62; Ex. 1003 ¶ 128; *see also* Ex. 1007, Fig. 9 (showing two-way communication between hosts). Such two-way traffic types involve data going both from end-point A to end-point B and vice a versa. *See* Ex. 1038, 87:6–88:9. Although there are multiple communications with A transmitting data to B and B transmitting data to A, Dr. Reddy testified that those separate communications are part of a single connection request in which there are control paths between the upgraded hosts and the ECP/controller:

> It is my opinion that a host 94 "similarly upgraded" as host 102 on the right hand side of FIG. 9 would include the daemon process 106 and the signaling interface 104. Moreover, as I explained in my prior declaration, the signaling interface 104 on the now-upgraded right hand side of FIG. 9 would likewise have a corresponding signaling channel 58 to ECP 50, with which the

[13] During his deposition, Dr. Sharony referred to the two end-points as A (on the left) and B (on the right). Ex. 1038, 87:6–88:9. As the end-points can act both as originating and terminating end points as part of a two-way traffic type, we adopt Dr. Sharony's nomenclature in this portion of the Decision.

> right hand side host 102 would also communicate with the ECP 50 (sending and receiving). See Ex. 1005, ¶ 76. *Such communication includes either sending or receiving to/from (respectively) the ECP 50.*

Ex. 1040 ¶ 18 (emphasis added). As Dr. Reddy testified, and Dr. Sharony and Patent Owner do not dispute (*see, e.g.*, Ex. 1038, 45:9–13; Tr. 32–34), in the system of modified Figure 9 there are control paths from each of the end-points to the controller allowing for two-way communication between the respective end-point and the controller. Because those communications are part of a single two-way traffic connection such as a video conference, we find Golden teaches this disputed limitation.[14]

We do not find the modification to Figure 9 to be "smoke and mirrors" and "doctored" as argued by Patent Owner. *See* PO Resp. 21–22. In support of its argument, Patent Owner relies on Dr. Sharony's testimony that the text added in the brackets renders the modification doctored:

> Petitioners also rely on a misleadingly modified quote from Golden: "[s]ignaling interface process 104 [of the terminating end-point] receives requests for participation in, or termination of, a reserved connection from ECP 50 via signaling channel 58." Petition at 47-48 (purporting to quote Ex. 1007 at 14:2-4). The text added in brackets ("of the terminating end-point") is not accurate. This added text is contrary to the teachings of Golden. The quoted passage is describing only the requesting host on the left side of Figure 9. It is not describing the terminating node on the right side of the connection.

[14] Although neither party addressed the proper claim construction of this limitation during briefing, we note that our conclusion is consistent with the agreed upon claim construction in the AT&T litigation, which did not impose any requirement that it apply to a single communication or any requirement that both the control paths be used at the same time. *See* Ex. 1038, 18.

Ex. 2001 ¶ 82 (emphasis omitted); *see also* Tr. 29–34. According to Patent Owner, Figure 9 shows two control signals for two different communications, both of which are initiated by a requesting end-point—although the specific end-point that is the requesting end-point varies for each communication. *See* Ex. 1038, 88:3–9 (Dr. Sharony testifying that the control path are part of two different communications, one from A to B and the other from B to A.); Tr. 32–34.

However, the claim limitation recites "control paths for the connection," not for the communication. Ex. 1001, 8:4–5; *see also* Section II.A.3 (construing limitation as not limited to a single communication). As discussed above, a single connection can involve multiple communications when, for example, the connection is related to teleconferencing. Accordingly, arguments directed to a single communication as opposed to a connection are not commensurate with the scope of the claim, and therefore, not persuasive. *See Self*, 671 F.2d at 1348.

Additionally, because Petitioner does not assert that Fichou teaches this disputed limitation, Patent Owner's argument regarding Fichou is inapposite. Nonobviousness cannot be established by attacking the references individually when the obviousness contention is predicated upon a combination of prior art disclosures. *Merck*, 800 F.2d at 1097; *Keller*, 642 F.2d at 425.

Based on this record, we are persuaded Golden teaches "wherein control paths for the connection are supported only between each of the originating and terminating end-points and the controller and between the portal and the controller," as recited in claim 1.

e. Reasons to Combine Golden, Fichou, and Lee

a. Petitioner's Arguments

Petitioner argues that although "Golden teaches that it is desirable to determine whether to admit a connection in the network[,] . . . Golden does not provide further detail about criteria for admitting a connection." Pet. 17. Petitioner further argues that such criteria were well known and that a person of ordinary skill in the art "would have been motivated to turn to other teachings in the art to confirm such well-known details in determining whether to admit a connection, as shown by Fichou." *Id.* at 17–18 (citing Ex. 1005 ¶ 90).

Petitioner also argues "Fichou provides an example of a reservation server, similar to Golden's ECP, that also assists in determining whether to admit a connection" and that "[a]pplying Fichou's verification teachings to Golden's policy server gives the advantage of 'provid[ing] a way for the customer to manage the authorization for each user of the source workstation.'" *Id.* at 18 (quoting Ex. 1008 ¶ 25).

Petitioner further argues "[t]he combination of Golden's teachings regarding ECP and policy server functions, and Fichou's reservation server with verification, would have been predictable in order to implement the 'further determination on whether to admit a connection' in Golden." *Id.* at 19 (citing Ex. 1005 ¶ 94). Petitioner also argues

> [a]ny modifications to accommodate the teachings of Fichou would have been within the skill level of a POSITA. Golden invited a POSITA to apply common knowledge for determining whether to admit a connection, and Fichou confirms one such commonly accepted method includes user authorization of requested QoS and bandwidth in a similar centralized control architecture.

Id. (citing Ex. 1005 ¶¶ 95–96).

Petitioner argues that although Golden teaches using MPLS switches, "Golden is silent concerning specific implementation details of an MPLS system (relying on the common knowledge of a POSITA to know and understand those basic networking details)." *Id.* at 21–22. Petitioner also argues Lee teaches using "a centralized control apparatus for an MPLS network with at least one MPLS switch reduces the complexity and load of an MPLS switch in the network." *Id.* at 22 (citing Ex. 1009 ¶¶ 15, 16; Ex. 1005 ¶ 106).

In view of the above teachings, Petitioner argues that a person of ordinary skill in the art "would have been motivated to look to other teachings in the art for detail about interactions with MPLS switches, and turned to Lee with its teachings of MPLS switch interaction with a centralized control system for detail regarding what was already known with respect to MPLS." *Id.* at 23 (citing Ex. 1005 ¶ 108). Petitioner further argues implementing the teachings from the three references would have been within the skill of a person of ordinary skill in the art and "would have allowed a reduction of load imposed on the MPLS switches." *Id.* (citing Ex. 1005 ¶ 109; Ex. 1009 ¶ 13). Petitioner further argues the "predictable and desirable result of such a combination would be a system with the ability to make route determinations/reservations at a centralized control point (Golden's ECP, Fichou's reservation server), as taught by Lee, with Lee's particular MPLS information details provided to MPLS switches in the determined path." *Id.* at 24 (citing Ex. 1005 ¶ 110).

b. Patent Owner's Arguments

Patent Owner argues "Petitioner's cursory explanation regarding why a skilled artisan may have been motivated to modify Golden in view of any of the other cited art is inconsistent with any reasonable reading of the references and is unsupported by substantial evidence." PO Resp. 24–25 (emphasis omitted). More specifically, Patent Owner quotes portions of the Petition relating to the reason to combine and argues "Petitioner's arguments are nothing more than conclusory statements based on hindsight and unsupported by the teachings of the references themselves as previously discussed." *Id.* at 25–26.

Patent Owner further argues "Petitioner also failed to establish '*how*' the references are to be combined." *Id.* at 28. According to Patent Owner, "[n]ot providing evidence of explicitly '*how*' a [person having ordinary skill in the art] would combine the references is a clear indication that the Petition fails to establish a reasonable likelihood of success with respect to the claims." *Id.* at 29 (citing *Google, Inc. v. EveryMD.com LLC*, IPR2014-00347, slip op. at 23–27 (PTAB May 22, 2014) (Paper 9)).

c. Our Analysis

A conclusion of unpatentability based on obviousness must be supported by "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Kahn*, 441 F.3d at 988 (citations omitted), *cited with approval in KSR*, 550 U.S. at 418. The requirement for a reason to combine the reference acts as a check on the potential for the improper use of hindsight. *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013) (holding that an articulated reasoning "is especially important to guard against the dangers of hindsight bias").

Based on the entirety of the record, we find Petitioner has shown sufficiently articulated reasoning with rational underpinning to support the legal conclusion of obviousness. Petitioner provides detailed analysis of the prior art, including what was missing from the primary reference Golden, and explains why, based on the teachings of the references, a person of ordinary skill in the art would have combined the references. *See* Pet. 17–19 (discussing Golden and Fichou), 21–24 (discussing Golden, Fichou, and Lee); *see also* Reply 2–7 (reiterating factual basis for the combination of references). And contrary to Patent Owner's argument, Petitioner's arguments were not conclusory. Instead, Petitioner provided several pages of detailed explanation citing to both the references and testimony of Dr. Reddy. *See* Pet. 17–19, 21–24. That is, immediately preceding the conclusory, concluding sentences quoted by Patent Owner, the Petition recites the very evidence Patent Owner says is lacking. *Id.* Accordingly, for the reasons given in the Petition and discussed below, we agree that a person of ordinary skill in the art would have combined the teachings of Golden, Fichou, and Lee and had a reasonable expectation of success. *See* Pet. 17–19, 21–24.

Specifically, based on the undisputed evidence, we are persuaded that a person of ordinary skill in the art would have combined the teachings of Golden and Fichou. Golden states that "ECP 50 could communicate with a policy server within the network for further determination on whether to admit the connection." Ex. 1007, 10:9–12. However, Golden does not provide any further detail regarding the criteria for admitting a connection. *See* Ex. 1005 ¶ 90. Therefore, a person of ordinary skill in the art would have turned to a reference like Fichou for those teachings, such as a

reservation server that engages in "user rights verification" based on definitions of the kinds of requests (i.e., bandwidth, destination, QoS, etc.) each user is allowed to make. Ex. 1008 ¶ 25; Ex. 1005 ¶¶ 90–93.

Similarly, although Golden teaches using MPLS switches (*see* Ex. 1007, 8:20–26, 16:19–29, 20:34–41), Golden is silent regarding many implementation details that would have been known to a person of ordinary skill in the art (*see* Ex. 1005 ¶ 105). Accordingly, a person of ordinary skill in the art would have turned to a reference such as Lee, which teaches a centralized control system that can be used with MPLS switch networks and used it to modify Golden/Fichou. Ex. 1009 ¶¶ 11, 15–16; Ex. 1005 ¶¶ 106, 107.

We disagree with Patent Owner that the Petitioner needs to provide more detail on exactly how the features of the secondary references—Fichou and Lee—would be incorporated into Golden. "It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements." *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *see also Intellectual Ventures II LLC v. Ericsson Inc.*, 685 Fed. App'x 913, 919 (Fed. Cir. 2017). Similarly, the skilled artisan is "[a] person of ordinary creativity, not an automaton" and "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S.at 416, 421; *see also id.* at 417 ("If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability."). Moreover, there is no evidence in the record that it would have been "uniquely challenging or difficult for one of ordinary skill in the art" to combine the teachings of the references. *See Leapfrog Enters., Inc. v.*

Fisher-Price, Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418).

Patent Owner's citation of *Google*, a non-precedential PTAB decision, does not persuade us otherwise. In *Google*, the invalidity arguments consisted of claim charts that contained summaries and quotations from two prior art references. *Google*, slip op. at 21–24. However, the arguments

> [did] not address which elements of Shah's system and Belanger's system are to be combined. Rather, Petitioners' statement covers all of the elements of Shah's system, and all of the elements of Belanger's system—essentially a grab bag of communication methods. Absent a meaningful explanation of the elements of Belanger's system that are to be combined with the elements of Shah's system, we are not persuaded that one with ordinary skill in the art would have combined the teachings of the references to arrive at the claimed subject matter based on Petitioners' asserted "common sense application of known systems in a known manner with an expected outcome."

Id. at 24–25. Accordingly, in that case, this Board determined

> Petitioners do not articulate sufficiently a reasoning with rational underpinning to explain why one with ordinary skill in the art at the time of the invention would have combined the teachings of Shah and Belanger to arrive at a system that would notify the first user of the input data by sending a message to the first user's telephone number.

Id. at 27.

Contrary to Patent Owner's argument, the issue in *Google* was not whether the Petition set forth how the references could be combined, but the failure of the Petition to identify what elements of each reference would be combined. *See* Tr. 22 (Patent Owner agreeing that *Google* is "very different from what we have in this case). Unlike in *Google*, Petitioner provides a detailed explanation as to which elements of Golden are to be combined

with which elements of Fichou and Lee. *See* Pet. 17–19, 21–24; Reply 2–7; *see also* Sections II.D.4.a–d.

Accordingly, for the reasons discussed above, Petitioner provided "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *See Kahn*, 441 F.3d at 988.

f. Conclusion

We have considered the entirety of the evidence submitted by the parties, both for and against obviousness, and determine that Petitioner has shown by a preponderance of the evidence that claim 1 of the '119 patent would have been obvious over the combined teachings of Golden, Fichou, and Lee.

5. Claims 2–9, 11, and 12

As discussed below, Petitioner accounts for all of the claim limitations required by claims 2–9, 11, and 12 in the specific arrangement required by the claim and provides a reason to combine the teachings of Golden, Fichou, and Lee. Pet. 48–64; *see also* Ex. 1005 ¶¶ 223–305. Having considered the entirety of the evidence before us, both for and against obviousness, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 2–9, 11, and 12 of the '119 patent would have been obvious to a person of ordinary skill in the art based on the combined teachings of Golden, Fichou, and Lee.

Claim 2 depends from claim 1 and recites "wherein the controller is associated with a single class of service and wherein a service type of the request identifies the request as being of the single class of service and the request is routed to the controller based on the service type." Ex. 1001, 8:8–12. Petitioner argues Golden teaches the additional limitations recited in

claim 2 (*see* Pet. 49–50 (citing Ex. 1005 ¶¶ 223–230; Ex. 1007, 3:5–6, 5:55–56, 12:21–24, 12:28–67)) and Patent Owner does not separately argue the patentability of claim 2 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 3 depends from claim 1 and recites "wherein the request is received by the controller based on signaling from a user to the controller." Ex. 1001, 8:13–14. Petitioner argues Golden teaches the limitation recited in claim 3 (*see* Pet. 50–51 (citing Ex. 1005 ¶¶ 231–235; Ex. 1007, 13:31–37)) and Patent Owner does not separately argue the patentability of claim 3 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 4 depends from claim 3 and further recites "wherein the request is received from the user via one of a directory request, an Internet Protocol address, and a web page." Ex. 1001, 8:15–17. Petitioner argues Golden teaches the limitation recited in claim 4 (*see* Pet. 51–52 (citing Ex. 1005 ¶¶ 236–240; Ex. 1007, 13:64–14:1, 14:17–33)) and Patent Owner does not separately argue the patentability of claim 4 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 5 depends from claim 1 and further recites the steps of "identifying, by the controller, billing information of a user corresponding to the request for a high quality of service connection[] and charging the user for the connection." Ex. 1001, 8:18–22. Petitioner asserts the combination

of Golden and Fichou teaches the limitations recited in claim 5 (*see* Pet. 52–54 (citing Ex. 1005 ¶¶ 241–255; Ex. 1007, 17:26–43, 17:51–55, 24:12–16; Ex. 1008 ¶ 38)) and Patent Owner does not separately argue the patentability of claim 5 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 6 depends from claim 5 and recites "wherein the charging may be based on at least one of a service type, an elapsed period of time, a codec type, and an amount of bandwidth used." Ex. 1001, 8:23–25. Petitioner argues Golden teaches the limitation recited in claim 6 (*see* Pet. 55 (citing Ex. 1005 ¶¶ 256–260; Ex. 1007, 8:16–39)) and Patent Owner does not separately argue the patentability of claim 6 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 7 depends from claim 1 and recites "wherein determining whether the originating end-point is authorized is based on information in a subscriber database." Ex. 1001, 8:26–28. Petitioner argues the combination of Golden and Fichou teaches the limitation recited in claim 7. *See* Pet. 55–57 (citing Ex. 1005 ¶¶ 261–267; Ex. 1007, 10:10–11; Ex. 1008 ¶¶ 23–25, Fig. 3). Patent Owner does not dispute that the combination of Golden and Fichou teaches the limitation recited in claim 7. *See* PO Resp. 29–30. However, Patent Owner argues "Petitioner has provided no information on '*how*' *Golden and Fichou* would be combined to provide the claimed functionality." PO Resp. 30. However, there is no legal requirement to explain how two prior art references will be incorporated. *See* Section

II.D.4.e. The weight of the evidence establishes that a person of ordinary skill in the art would have been able to combine the teachings of Golden and Fichou. *See* Ex. 1005 ¶¶ 87–97. Thus, we are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 8 depends from claim 1 and recites "wherein the negotiating, by the controller, to reserve far-end resources on the terminating end-point includes negotiating with another controller associated with the terminating end-point." Ex. 1001, 8:29–32. Petitioner argues Golden teaches the limitation recited in claim 8 (*see* Pet. 57–60 (citing Ex. 1005 ¶¶ 268–279; Ex. 1007, 13:30–33, 15:12–21, 15:60–63, 16:2–10, Fig. 11)) and Patent Owner does not separately argue the patentability of claim 8 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 9 depends from claim 1 and recites "wherein the negotiating, by the controller, to reserve far-end resources for the terminating end-point includes negotiating directly with the terminating end-point." Ex. 1001, 8:33–36. Petitioner argues Golden teaches the limitation recited in claim 9 (*see* Pet. 60–61 (citing Ex. 1005 ¶¶ 280–286; Ex. 1007, 13:25–29, 13:36–40, 15:12–30, Fig. 9)) and Patent Owner does not separately argue the patentability of claim 9 (*see* PO Resp. 29–30). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 11 depends from claim 1 and recites "wherein the connection is a point-to-point connection between only the originating and terminating

end-points." Ex. 1001, 8:42–45. Petitioner argues Golden teaches the limitation recited in claim 11. *See* Pet. 62 (citing Ex. 1005 ¶¶ 287–292; Ex. 1007, 1:14–18, 5:47–50, 13:10–15). Specifically, Petitioner argues:

> Golden teaches a path established between the hosts by the ECP, which "***reserves the requested resources all along the path from beginning to end***." ERIC-1007, 5:47-50. In Golden, "the desired reservation can be maintained . . . ***for each switch from host to host along the path***." *Id.*, 13:10-15; ERIC-1005, ¶¶287–289.
>
> A POSITA would have recognized that this path between hosts, through each switch, would be a point-to-point connection between the originating and destination hosts. Golden further teaches that the result of the reservations constitutes a "virtual circuit." ERIC-1007, 1:14-18; ERIC-1005, ¶290.

Id. Petitioner also argues the disclosure in Golden is similar to that of Figure 7 of the '119 patent. *Id.*; Reply 25–26.

Patent Owner disagree and states that the cited passages "do[] not disclose the claimed feature. Golden is silent with respect to the connection being a point-to-point connection ***between only*** the originating and terminating end-points as claimed." PO. Resp. 30–31.

"[T]he question under 35 USC [§] 103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made." *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807–08 (Fed. Cir. 1989) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)). Moreover, "[e]very patent application and reference relies to some extent upon knowledge of persons skilled in the art to complement that [which is] disclosed. . . ." *In re Bode*, 550 F.2d 656, 660 (CCPA 1977) (quoting *In re Wiggins*, 488 F.2d 538, 543 (CCPA 1973)). Those persons "must be presumed to know something"

about the art "apart from what the references disclose." *In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962). Additionally, the skilled artisan is "a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421. Furthermore, there is no requirement in an obviousness analysis for the prior art to "contain a description of the subject matter of the . . . claim in *ipsissimis verbis*." *In re May*, 574 F.2d 1082, 1090 (CCPA 1978).

Based on the entirety of the record, we agree with Petitioner. Dr. Reddy testifies that

> [a] person having ordinary skill in the art would have recognized that this path between hosts, through each switch, would be a point-to-point connection between the originating and destination hosts. In particular, Golden further teaches that the result of the reservations at every point along the path constitutes a virtual circuit (e.g., a virtual path), stating that Golden teaches "a technique for adapting an existing packet-switched/routed infrastructure so that on-demand reserved-bandwidth virtual circuit connections with guaranteed QOS and/or COS between any endstations within the network." ERIC-1007, 1:14-18.

Ex. 1005 ¶ 290. On the one hand, we find Dr. Reddy's testimony—which is supported by citation to the teachings in the prior art—to be credible. *See id.* On the other hand, Patent Owner offers no contrary evidence—either through cross-examination testimony or testimony of its expert. *See* PO Resp. 30–31. Instead, Patent Owner relies on attorney argument. *Id.* However, "[a]ttorney's argument in a brief cannot take the place of evidence." *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974). Therefore, the unrebutted evidence establishes that Golden teaches the additional limitation recited in claim 11 and we find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Claim 12 depends from claim 1 and recites "wherein the connection is a point-to-multipoint connection between one of the originating and terminating end-points and the other of the originating and terminating end-points and at least one other end-point." Ex. 1001, 8:45–49. Petitioner argues Golden teaches the limitation recited in claim 12. *See* Pet. 62–64 (citing Ex. 1005 ¶¶ 293–305; Ex. 1007, 1:11–21, 1:49–57, 5:36–50, 6:22–23).

Patent Owner argues "Petitioner has grossly oversimplified extending the technology of *Golden* to multiple paths and provided no discussion of '*how*' *Golden* would be extended to a multicast environment." PO Resp. 31. More specifically, Patent Owner asserts that Petitioner's conclusion—"[i]t would have been obvious to a POSITA to implement Golden's ECP teachings with the multicast teachings, because the ECP interoperates with existing protocols including RSVP, and a multicast connection exists in examples using RSVP" (Pet. 64)—is not legally sufficient. PO Resp. 31–32.

We are persuaded by Petitioner's evidence that Golden teaches the limitation recited in claim 12. Although Patent Owner quotes the concluding sentence in the section of the Petition regarding claim 12, Patent Owner does not address the preceding three paragraph in which Petitioner discusses, with citations to Golden and Dr. Reddy's testimony, how the references would be combined. *Compare* PO Resp. 31–32, *with* Pet. 62–64. We find Dr. Reddy's testimony—which makes extensive citations to Golden—credible and Patent Owner does not cite to contradictory testimony. Accordingly, we are persuaded by Petitioner's analysis and Dr. Reddy's unrebutted testimony and find Petitioner has shown that this

limitation would have been obvious over the combined teachings of Golden, Fichou, and Lee.

Moreover, as discussed above, Petitioner need not explain how to bodily incorporate the teachings of the references. *See* Section II.D.4.e.

We have considered the entirety of the evidence submitted by the parties, both for and against obviousness, and determine that Petitioner has shown, by a preponderance of the evidence, that claims 2–9, 11, and 12 of the '119 patent would have been obvious over the combined teachings of Golden, Fichou, and Lee.

E. Obviousness over Golden, Fichou, Lee, and Har

1. Summary of Har

Har "relates to a method of reducing communications delay, thereby improving video and audio quality in Internet Protocol Telephony (IP Telephony) systems that conform to the H.323, H.225 and H.245 family of International Telecommunications Union (ITU) standards for packet-based multimedia communication systems." Ex. 1010 ¶ 11. Har reduces delay and increases quality of the communication by "apply[ing] a single coder-decoder (codec) for the entire communication path between originating or calling endpoints and destination or called endpoints when calls are connected through H.323 gateways." *Id.* [57]. According to Har,

> [o]nce the destination EP decides on a codec 206, the chosen codec is the only codec passed back to the originating endpoint 208. As the originating endpoint receives one codec capability to cho[o]se from in the H.245 exchange 209, a single end-to-end codec is guaranteed to be used along the entire communications path.

Id. ¶ 45.

2. Claims 10 and 13–15

As discussed below, Petitioner accounts for all of the claim limitations required by claims 10 and 13–15 in the specific arrangement required by the claims and provides a reason to combine the teachings of Golden, Fichou, Lee, and Har. Pet. 64–73; *see also* Ex. 1005 ¶¶ 306–351. Having considered the entirety of the evidence before us, both for and against obviousness, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 10 and 13–15 of the '119 patent would have been obvious to a person of ordinary skill in the art based on the combined teachings of Golden, Fichou, Lee, and Har.

Claim 10 depends from claim 1 and recites "wherein the negotiating, by the controller, to reserve far-end resources for the terminating end-point includes negotiating a video codec for use with the connection to avoid video codec conversion between the originating and terminating end-points." Ex. 1001, 8:37–41.

Petitioner argues Har teaches the additional limitations recited in claim 10. *See* Pet. 67–68 (citing Ex. 1005 ¶¶ 318–330; Ex. 1010 ¶¶ 37, 41, 43, 45, 57, 79–81, 84, 85). Petitioner further argues that a person of ordinary skill in the art would have combined the teachings of Har with the combination of Golden, Fichou, and Lee "to avoid conversions along the path and reduce delay in transmission, with Golden's teaching of an ECP for setting up reserved end-to-end connections," and that the combination would have been within the ability of a person of ordinary skill in the art. *Id.* at 65–67.

Patent Owner does not separately argue the patentability of claim 10. *See* PO Resp. 32–33. Instead, Patent Owner asserts Har does not cure any of

the deficiencies associated with the combination of Golden, Fichou, and Lee. *Id.*

Patent Owner's arguments about Golden, Fichou, and Lee are not persuasive for the reasons given above. Accordingly, we are persuaded by Petitioner's analysis of the evidence cited in the Petition and find Petitioner has shown that the combination of Golden, Fichou, Lee, and Har teach the additional limitation recited in claim 10.

We are also persuaded by Petitioner's argument that a person of ordinary skill in the art would have combined the teaching of Har with the teachings of Golden, Fichou, and Lee. Golden teaches the importance of obtaining QoS guaranteed connections "with minimal and predetermined transmission latency." Ex. 1007, 1:43–47. Har explains that one cause of latency is multiple codec translations: "[T]he prior art clearly substantiates that multiple codec translations have adverse effects on speech quality resulting from delays. With the current state of the Internet where quality of service is not assured, such delays in multimedia delivery of greater than 150 milliseconds is often not tolerable by users." Ex. 1010 ¶ 8. Har solves that problem by teachings "a single end-to-end codec . . . to be used along the entire communications path." *Id.* ¶ 45. "This significantly reduces latency resulting from codec translations," because those translations are no longer required. *Id.* ¶ 14. Accordingly, a person of ordinary skill in the art would have added Har's teaching to reduce latency and such a combination would be within the level of ordinary skill in the art. Ex. 1005 ¶¶ 315–317.

Claim 13 is an independent claim. Ex. 1001, 8:50–9:10. In addition to having substantially the same limitations of claim 1, claim 13 recites "communicating, by the controller, with the originating and terminating end-

points to ensure that the connection is free from video codec conversion." *Compare id.* at 7:43–8:7, *with id.* at 8:50–9:10. This additional limitation is similar to the limitation recited in claim 10 and discussed above.

Petitioner relies on substantially the same evidence and arguments for claim 13 as for claims 1 and 10. *See* Pet. 69–72.

Similar to claim 10 above, Patent Owner argues that Har does not cure any of the deficiencies associated with claim 1. PO Resp. 33. Additionally, Patent Owner argues "Petitioner has provided no evidence as to '*how*' *Har* would be combined with the other references." *Id.* However, Patent Owner's arguments regarding are not persuasive for the reasons given above.

Therefore, for the reasons discussed above for claims 1 and 10, we find that the combination of Golden, Fichou, Lee, and Har teaches all of the limitations recited in claim 13 and that a person of ordinary skill in the art would have been motivated to combine the references in the manner claimed. Accordingly, we are persuaded by Petitioner's analysis and find Petitioner has shown that claim 13 would have been obvious over the combined teachings of Golden, Fichou, Lee, and Har.

Claim 14 depends from claim 13 and recites the additional step of "negotiating, by the controller, to reserve far-end resources on the terminating end-point." Ex. 1001, 9:11–13.

Petitioner argues the combination of Golden and Har teaches the additional limitations recited in claim 14. *See* Pet. 72–73 (citing Pet. 40–41, 67–68; Ex. 1005 ¶¶ 344–348; Ex. 1010 ¶¶ 41, 43). Patent Owner disagrees, repeating its arguments regarding Petitioner's modification to Figure 9 and the lack of a teaching on how to combine Har with Golden. PO Resp. 34.

For the reasons discussed above in Sections II.D.4.d and II.D.4.e, we are not persuaded by Patent Owner's arguments. Instead, for the reasons discussed above, we find that the combination of Golden and Har teaches the additional limitation recited in claim 14 and that a person of ordinary skill in the art would have been motivated to combine the references in the manner claimed. Accordingly, we are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, Lee, and Har.

Claim 15 depends from claim 14 and recites "wherein the negotiating is performed with one of another controller associated with the terminating end-point or directly with the terminating end-point." Ex. 1001, 10:1–4.

Petitioner asserts Golden teaches the additional limitation recited in claim 15 (*see* Pet. 73 (citing Pet. 57–61; Ex. 1005 ¶¶ 349–351)) and Patent Owner does not separately argue the patentability of claim 15 (*see* PO Resp. 34). We are persuaded by Petitioner's analysis and find Petitioner has shown that this limitation would have been obvious over the combined teachings of Golden, Fichou, Lee, and Har.

We have considered the entirety of the evidence submitted by the parties, both for and against obviousness, and determine that Petitioner has shown, by a preponderance of the evidence, that claims 10 and 13–15 of the '119 patent would have been obvious over the combined teachings of Golden, Fichou, Lee, and Har.

F. Obviousness Golden, Fichou, Lee, Har, and Pillai

1. Summary of Pillai

Pillai "relates to the integration of electronic and software systems and subsystems used in the operation of a telecommunications enterprise, such as

a wireless service provider." Ex. 1011 ¶ 2. Pillai can be used "to support combined and integrated billing and rating for both voice and data services in a distributed wireless cellular architecture." *Id.* ¶ 71.

Pillai teaches a "separate control element, a Real-Time Universal Resource Consumption Monitor (RURCM) 300" that tracks "ongoing usage [o]f system resources," and which "applies prepaid service definitions to effectively regulate network usage." *Id.* ¶ 87. "The RURCM agent 300 is responsible for maintaining real-time active connections with the network elements, such as the MSC 100 and the PDSN 150, which regulate the user's ongoing calls/sessions." *Id.* ¶ 88.

2. Claim 16

Claim 16 depends from independent claim 13 and recites the additional steps of "receiving, by the controller, a notification from the portal that traffic on the connection has exceeded an authorized limit[] and instructing the portal, by the controller, whether to terminate or allow the connection to continue." Ex. 1001, 10:5–10. Petitioner argues to the extent Golden does not explicitly teach the additional limitations recited in claim 16, those limitation are taught by Pillai. Pet. 76–77 (citing Ex. 1005 ¶¶ 367–376; Ex. 1007, 8:34–39; Ex. 1011 ¶¶ 87–89).

Petitioner further argues that a person of ordinary skill in the art would have combined Pillai with the teachings of Golden in order to provide "the advantage of managing prepaid services ([ERIC-1011], ¶[0087]) as well as 'ensuring that the customer only has access to whatever was specified in the prepaid contract.'" *Id.* at 75 (citing Ex. 1005 ¶¶ 365–366). Petitioner also argues that the combination of Golden and Pillai "would yield the predictable result of Golden's ECP communicating with a switch to receive

usage information from the switch, and determinations made therefrom, as taught by Pillai." *Id.* (citing Ex. 1005 ¶¶ 365–366).

Patent Owner asserts that Pillai does not cure any of the deficiencies associated with claim 13. PO Resp. 35. However, Petitioner's arguments regarding the limitations of claim 13 are not persuasive for the reasons given above. *See* Section II.E.3.

Additionally, Patent Owner asserts "Petitioner provides no discussion of '*how*' the technology of *Pillai* would be combined with *Golden*." *Id.* However, as discussed below, Petitioner has sufficiently shown why a person of ordinary skill in the art would have combined the teachings of Pillai with Golden and that the combination of the teachings of the references would have been within the ability of a person of ordinary skill in the art.

Golden teaches that its "records can be used for billing and resource management." Ex. 1007, 8:34–39. However, because Golden is silent about "the billing and resource management functions that may be implemented by the ECP, a person having ordinary skill in the art would have been motivated to look at the different well-known techniques in the industry then available for billing and resource management." Ex. 1005 ¶ 360.

One such reference is Pillai, which teaches particular ways in which to "support combined and integrated billing and rating . . . to support prepaid integrated . . . data services." Ex. 1011 ¶ 71. Specifically, Pillai states that it "relates to the integration of electronic and software systems and subsystems used in the operation of a telecommunications enterprise" and specifies particular ways in which to "support combined and integrated billing and rating for . . . data services in a distributed wireless cellular architecture; to

support prepaid integrated . . . data services in cellular network architectures . . . ." *Id*. ¶¶ 2, 71. Moreover Pillai teaches that it can "be applied to other types of systems, and are not limited for use with wireless telecommunication systems." *Id.* ¶ 50. "Using these teachings from Pillai with the ECP in Golden provides the advantage of managing prepaid services . . . as well as 'ensuring that the customer only has access to whatever was specified in the prepaid contract.'" Ex. 1005 ¶ 363 (citing Ex 1011 ¶¶ 87, 93). Furthermore, a person of ordinary skill in the art would be able implement Pillai's teachings in the Golden ECP. Ex. 1005 ¶¶ 364–366.

We have considered the entirety of the evidence submitted by the parties and determine that Petitioner has shown by a preponderance of the evidence that claim 16 of the '119 patent would have been obvious over the combined teachings of Golden, Fichou, Lee, Har, and Pillai.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–16 of the '119 patent would have been obvious.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–16 of the '119 patent are held *unpatentable*;

FURTHER ORDERED that pursuant to 35 U.S.C. § 318(b), upon expiration of the time for appeal of this Decision, or the termination of any such appeal, a certificate shall issue cancelling claims 1–16 in U.S. Patent No. 8,036,119 B2; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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