

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

WSOU INVESTMENTS d/b/a BRAZOS LICENSING AND
DEVELOPMENT,
Patent Owner.

IPR2025-00188
Patent 8,982,691 B2

Before BENJAMIN D. M. WOOD, KEVIN C. TROCK and
JOHN A. HUDALLA, *Administrative Patent Judges*.

TROCK, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Cisco Systems, Inc. (“Petitioner”) filed a Petition, Paper 2 (“Pet.” or “Petition”), to institute an *inter partes* review of claims 1–10 (the “challenged claims”) of U.S. Patent No. 8,982,691 B2 (Ex. 1001, “the ’691 patent”). WSOU Investments LLC d/b/a Brazos Licensing and Development (“Patent Owner”) timely filed a Preliminary Response, Paper 6 (“Prelim. Resp.”).

An *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review.

B. Real Party in Interest

Petitioner identifies itself as the only real party in interest. Pet. 88. Patent Owner identifies itself as the only real party in interest. Paper 4, 1.

C. Related Proceedings

According to the parties, the ’691 patent is the subject of the following action: *WSOU Investments, LLC d/b/a Brazos Licensing and Development v. Cisco Systems, Inc.*, No. 2:24-cv-00332 (EDTX) filed May 6, 2024 (the “district court litigation”). Pet. 88; Paper 4, 1.

D. The ’691 Patent (Ex. 1001)

The ’691 patent, relates to a system and method of protecting Bypass Label Switched Paths (LSP) in Multiprotocol Label Switched (MPLS) Fast

Reroute (FRR) systems to accommodate double-fault scenarios to the extent the system configuration allows for the protection. Ex. 1001, 2:10–13. According to the '691 patent, known systems protect against single faults, but do not provide protection when an LSP is already protected by a Bypass LSP (FRR) and there is a second failure in the network which causes the FRR/Bypass LSP to go down. *Id.* at 1:63–67.

To address this problem, the '691 patent provides an exemplary MPLS network having three LSP paths: namely, a Primary or working path, a Bypass or first backup path, and a Backup or second backup path that provides protection in case the other paths fail. *Id.* at 5:38–46; Figs. 2–3. Figure 3 of the '691 patent is reproduced below.

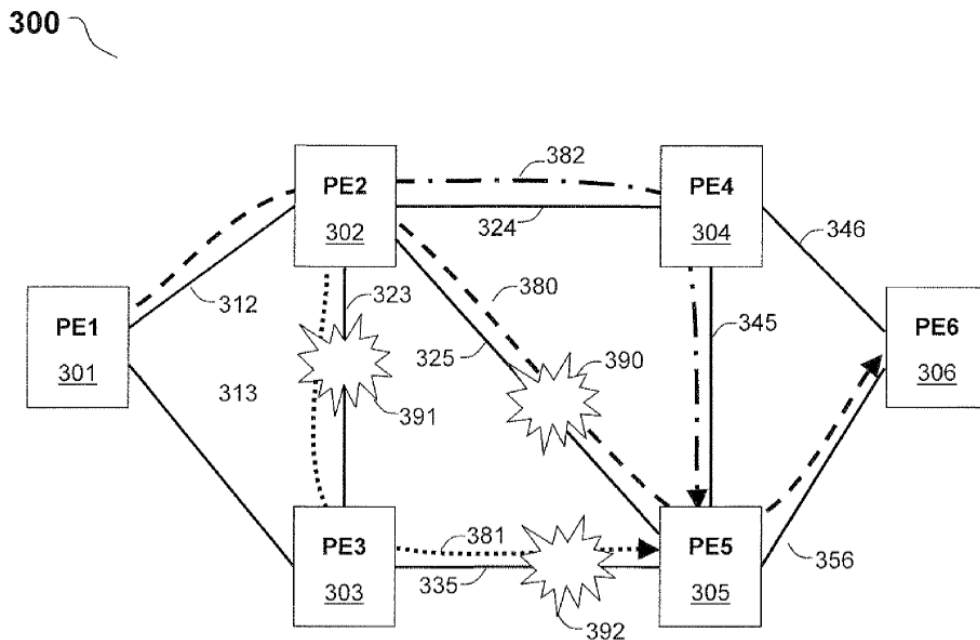


Fig. 3

Figure 3, above, depicts an exemplary MPLS network having six MPLS Label Switch Routers PE1 301, PE2 302, PE3 303, PE4 304, PE5 305, and

PE6 306, wherein each of the Label Switch Routers has a facility (312, 313, 324, 325, 335, 345, 346, 356) linking them to other Label Switch Routers, the network further includes Primary Label Switched Path 380 (dashed-line), Bypass LSP 381 (dotted-line), and Backup LSP 382 (dashed and dotted-line). *Id.* at 5:23–44. When first fault 390 disrupts facility 325, thus breaking Primary LSP 380, Bypass LSP 381 would normally compensate for the failure of facility 325 by providing an LSP connection from PE2 302 as a Point of Local Repair, to PE5 305 as its Merge Point. *Id.* at 5:47–52. However, a given second fault, namely fault 391 on facility 323 or fault 392 on facility 335, would break Bypass LSP 381. *Id.* at 5:52–54. As depicted, Backup LSP 382 connects to the same Point of Local Repair, namely PE2 302, and to the same Merge Point, namely PE5 305 as Bypass LSP 381. *Id.* at 5:54–57. Thus, in the event of a second fault, i.e. fault 391 or fault 392 on Bypass LSP 381, Backup LSP 382 provides further protection. *Id.* at 5:57–58.

Figure 4 of the '691 patent is reproduced below.

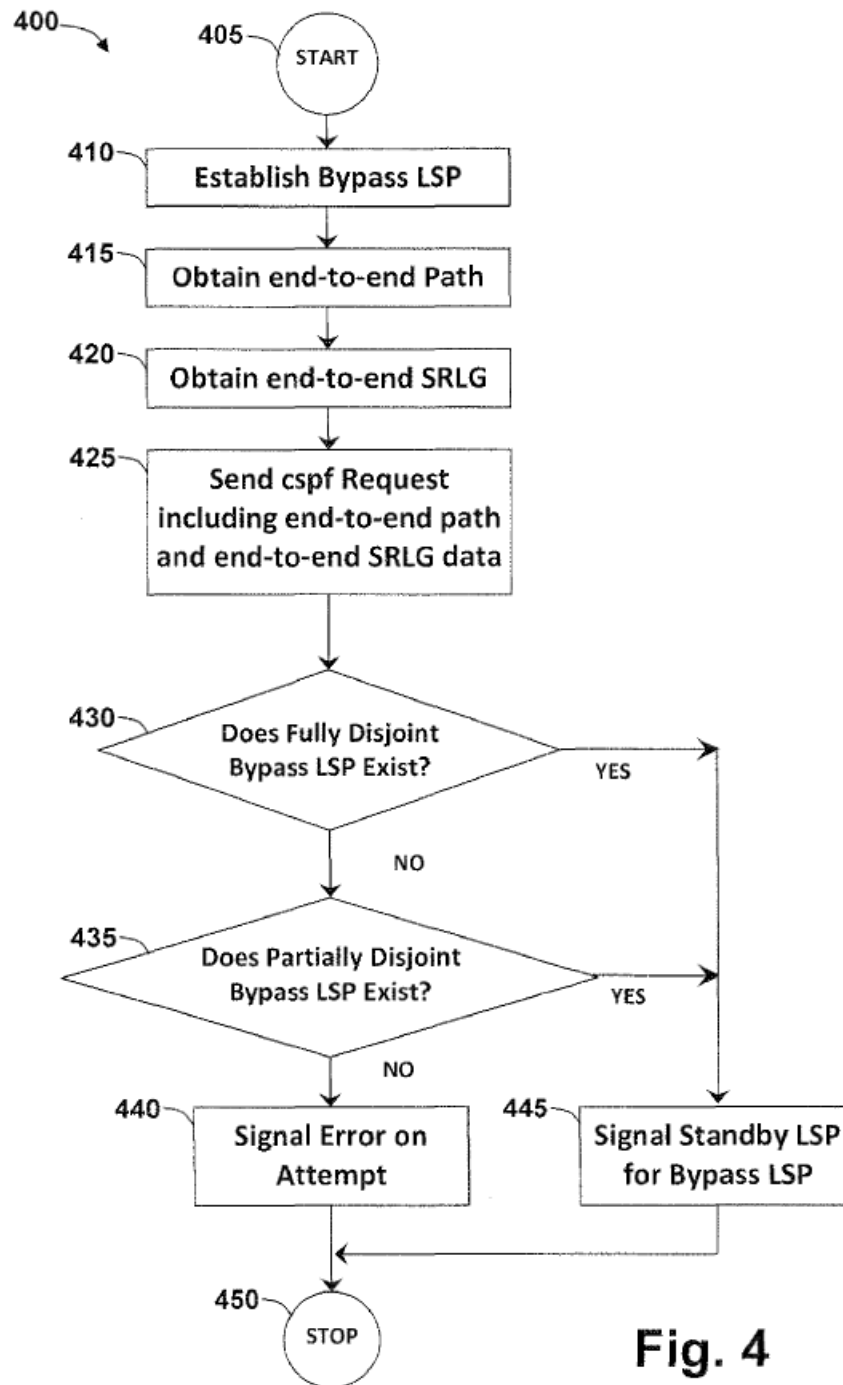


Fig. 4

Figure 4, above, depicts a flowchart of method 400 of providing a Backup LSP for a Bypass LSP. *Id.* at 6:4–5. The method begins at step 405 and at step 410 the main Bypass LSP is established. *Id.* at 6:8–10. The end-to-end path of the main Bypass LSP based upon the nodes it is traversing is

obtained at step 415. *Id.* at 6:10–13. At step 425 collected information is submitted to a calculation which provides a Backup LSP disjoint to the Bypass LSP. *Id.* at 6:17–19. At step 430 a test is performed to determine if the network can support a fully disjoint Backup LSP for the Bypass LSP. *Id.* at 6:23–25. When the network can support a fully disjoint LSP, control passes to step 445 wherein the Standby LSP for the Backup LSP is signaled to the MPLS Label Switches, and then control passes to step 450 and concludes. *Id.* at 6:25–28.

E. Challenged Claims

Petitioner challenges claims 1–10 of the '691 patent. Pet. 7. Claims 1 and 6 are independent. Independent claim 1 is a method claim for providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP. Independent claim 6 is non-transitory machine readable storage medium for providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP, similar to claim 1. Claim 1 is generally illustrative.

[1.0.1] 1. A method performed by a network processor of a Multiprotocol Label Switching (MPLS) label switch router

[1.0.2] for providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP, the method comprising the steps of:

[1.1] protecting the Primary LSP against dual failures, comprising:

[1.2] establishing the Bypass LSP for the Protected Primary LSP having a Point of Local Repair node and a Merge Point node;

[1.3] obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node;

[1.4] generating a request to a path calculator using the nodes traversed by said end-to-end path of said Bypass LSP for a disjoint

path connecting said Point of Local Repair Node to said Merge Point node;

[1.5] receiving a response from said path calculator; and

[1.6] in response to determining that a fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is available, signaling, to at least one other MPLS label switch router, said fully disjoint path as the Backup LSP to said Bypass LSP.

Ex. 1001, 7:50–8:5 (numbering and formatting designated by Petitioner; *see* Pet. 90–93).

F. Evidence

Petitioner relies upon the following evidence:

(1) U.S. Patent Application Publication No. US 2004/0218525 A1, published November 4, 2004 (“EDC_525”) (Ex. 1005);

(2) U.S. Patent Application Publication No. US 2004/0246892 A1, published December 9, 2004 (“EDC_892”) (Ex. 1006);

(3) U.S. Patent Application Publication No. US 2009/0292943 A1, published November 26, 2009 (“Hanif”) (Ex. 1013);

(4) Chinese Publication of Invention Patent Application No. CN 101645848 A (“Li”) (Ex. 1031)¹; and

(5) Declaration of Dr. Henry Houh (Ex. 1003).

¹ We refer to the certified English translation provided by Petitioner (Ex. 1030).

G. Asserted Grounds of Unpatentability

Claims Challenged	35 U.S.C. §	References
1–10	103(a) ²	EDC_525, EDC_892, Hanif
1–10	103(a)	EDC_525, EDC_892, Hanif, Li

II. ANALYSIS

A. Level of Ordinary Skill

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner describes a person of ordinary skill in the art (POSITA) as a person having “a bachelor’s degree in computer science, computer engineering, electrical engineering, or equivalent training, and approximately two years of experience working in the field of network communications and would be knowledgeable regarding MPLS techniques.” Pet. 12 (citing Ex. 1003 ¶¶ 26–27). According to Petitioner, “[l]ack of work experience can be remedied by additional education, and vice versa.” *Id.* Patent Owner does not contest Petitioner’s description of a person of ordinary skill in the art, but “submits that the above POSITA at the time of the ’691 Patent may alternatively have additional years of practical and

² The ’691 patent was filed before the March 16, 2013, effective date of the §103 provisions in the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29. Ex. 1001, code (22). Accordingly, we cite to pre-AIA § 103(a).

relevant work or research experience as substitution for less or different technical education, and vice versa.” Prelim. Resp. 28–29.

Petitioner’s description of a person of ordinary skill appears to be consistent with the subject matter of the ’691 patent. This is supported by the testimony of Petitioner’s declarant, Dr. Houh. *See* Ex. 1003 ¶¶ 26–27. We adopt Petitioner’s assessment of a person of ordinary skill for purposes of this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

B. Claim Construction

We construe claims using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100 (2024). Thus, we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”

Realtime Data, LLC v. Iancu, 912 F.3d 1368, 1374 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Here, Petitioner explains that, “for the purposes of this proceeding and the grounds presented herein, no claim term requires express construction.” Pet. 13.

Patent Owner asserts that “the ’691 Patent claims should be construed in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” Prelim. Resp. 29.

For purposes of this Decision and based on this preliminary record, we determine that no claim term requires express construction at this stage of the proceeding.

C. Discretionary Review under 35 U.S.C. § 314(a)

The Board’s decision in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019 (“*Fintiv*”), Paper 11 (PTAB Mar. 20, 2020) (precedential), identifies a non-exclusive list of factors the Board considers when addressing whether a related, parallel district court action provides a basis for discretionary denial under 35 U.S.C. § 314(a). *Fintiv*, Paper 11 at 5–16. These factors include:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;

5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id. at 5–6.

When analyzing and weighing the *Fintiv* factors, we take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* at 6.

Here, Petitioner contends that “[d]iscretionary denial under *Fintiv* is not appropriate,” because the “factors considered for § 314 discretionary denial strongly favor institution given Petitioner’s timely filing and the compelling merits of this case.” Pet. 13.

Patent Owner, however, contends that “[t]he Board should exercise its discretion to deny institution” because “the balance of the *Fintiv* factors all weigh in favor of denying the Petition.” Prelim. Resp. 2, 4.

We consider each of the *Fintiv* factors below.

1. Factor 1 - Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

Petitioner asserts that “[n]o motion to stay has been filed, so the Board should not infer the outcome of such a motion” and “[t]hus, this factor is neutral.” Pet. 13.

Patent Owner point out that “Petitioner has neither requested a stay in the District Court proceeding, nor has it requested that the trial date be adjusted.” Prelim. Resp. 5. Patent Owner, however, argues that “because (as even Petitioner admits) there is no evidence of a stay being sought in the parallel proceeding, nor any evidence that such a stay is likely to be granted should such a stay be sought, this first *Fintiv* factor weighs in favor of denying institution.” Prelim. Resp. 5, 8.

We disagree with Patent Owner that this factor weighs in favor of denying institution. Patent Owner does not cite to any legal authority to support this conclusion. Rather, our authority concludes that where “[n]either party has requested a stay of the District Court case,” that “[t]his factor does not weigh for or against discretionary denial.” *Fintiv*, Paper 15, 12 (PTAB May 13, 2020) (informative).

Therefore, we find that that Factor 1 is neutral because neither party has requested a stay of the district court litigation.

2. Factor 2 - Proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision

Petitioner advises that “[t]he co-pending district court case was filed in the Eastern District of Texas on May 6, 2024,” and that “[t]he most recent statistics currently available for the Eastern District of Texas show a median time-to-trial of 21.6 months.” Pet. 14 (citing Ex. 1032; Ex. 1041, 35). According to Petitioner, “the estimated trial date is late March 2026,” and “[t]he Board’s final written decision is expected soon after, in April or May 2026.” Pet. 14. Petitioner concludes that “[g]iven the proximity of the Board’s expected Final Written Decision and the estimated trial date, this factor is at least neutral.” *Id.*

Patent Owner advises that “[t]he District Court in the parallel proceeding has set a trial date of March 2, 2026,” and that “[t]his trial date is consistent with Petitioner’s admitted median time to trial statistics . . . which indicates a projected February 2026 trial date.” Prelim. Resp. 8 (citing Ex. 2002, 1). Patent Owner contends that “because all information available indicates that the Board’s projected date for issuance of a final written decision on June 17, 2026 is more than three months after the District

Court’s scheduled trial date of March 2, 2026, this second *Fintiv* factor weighs against institution.” Prelim. Resp. 9.

We agree with Patent Owner. Because the District Court’s current trial date is scheduled approximately three months before any anticipated Final Written Decision in this proceeding, this factor somewhat favors the exercise of discretionary denial. *Fintiv*, Paper 15 at 12–13 (“Because the currently scheduled District Court trial is scheduled to begin two months before our deadline to reach a final decision, this factor weighs somewhat in favor of discretionary denial.”).

3. *Factor 3 - Investment in the parallel proceeding by the court and the parties*

Petitioner asserts that “[t]he co-pending litigation is in its early stages, with major activities including a *Markman* hearing and the close of discovery scheduled after the Board’s expected decision on institution.” Pet. 14 (citing Ex. 1042, 3–4). Petitioner also asserts that it “has acted with diligence to prepare this Petition approximately six months after Petitioner was served with a complaint,” and that “[u]nder *Fintiv*, Petitioner’s prompt filing ‘weigh[s] against exercising the authority to deny institution.” Pet. 15 (quoting *Fintiv*, Paper 11 at 11).

Patent Owner, however, contends that “Petitioner and Patent Owner have invested substantial resources in the parallel proceeding.” Prelim. Resp. 11. Patent Owner asserts that “upon projected issuance of an institution decision in this proceeding on or about June 17, 2025, the parties will also be in the middle of the claim construction process in the parallel District Court proceeding, and will have already exchanged proposed claim terms for construction and proposed constructions for those terms, and will have also filed a joint claim construction statement.” *Id.* at 12 (citing

Ex. 2002, 5). Thus, according to Patent Owner, “because of the substantial investment that either has already been made or will have been made by the parties and the Court as of, and shortly after, the time of an institution decision, this third *Fintiv* factor weighs in favor of denying institution.” Prelim. Resp. 13.

We acknowledge that the parties have expended some effort in the district court litigation and are in the midst of fact discovery. We also acknowledge that by the time this Decision issues the parties will have done some initial work on invalidity issues, such as exchanging proposed terms for claim construction. However, we also recognize that much work remains to be done in the district court litigation as it relates to invalidity: for example, the deadline to complete claim construction discovery is July 9, 2025; opening claim construction briefs are not due until July 23, 2025; the joint claim construction chart is not due until August 20, 2025; and a claim construction hearing is not scheduled until September 3, 2025. Ex. 2002, 4–5. Moreover, the deadline to complete fact discovery and file motions to compel discovery is not until October 14, 2025; the deadline to complete expert discovery is not until November 17, 2025; and the deadline for dispositive motions is November 24, 2025. *Id.* at 3–4.

Thus, although the parties have invested some initial effort in the District Court litigation with respect to invalidity issues, much remains to be done on that score before trial. Based on the modest level of investment and effort expended on initial claim construction and invalidity issues in the District Court, we find that this factor is neutral or weighs somewhat against exercising discretionary denial in this case.

4. *Factor 4 - Overlap between issues raised in the petition and in the parallel proceeding*

With our authorization (Ex. 3002), Petitioner filed a stipulation addressing concerns about duplicative efforts between the instant proceeding and the District Court litigation. *See* Paper 7. Petitioner’s stipulation reads as follows:

If the Board institutes an IPR trial in IPR2025-00188, Petitioner Cisco Systems, Inc. hereby stipulates that Petitioner will not pursue in the co-pending district court litigation (*WSOU Investments, LLC v. Cisco Systems, Inc.*, No. 2:24-cv-00332 (E.D. Tex.)) the specific grounds asserted in the IPR2025-00188 petition, or any other ground that could have been reasonably raised against Challenged Claims 1 through 10 of U.S. Patent No. 8982691 in an IPR (i.e., grounds that could have been raised under §§102 or 103 on the basis of prior art patent or printed publications). *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-00109, Paper 12 at 18–19 (Dec. 1, 2020).

Notwithstanding this stipulation, Petitioner does not relinquish any rights or opportunities to pursue in the co-pending district court litigation (*WSOU Investments, LLC v. Cisco Systems, Inc.*, No. 2:24-cv-00332 (E.D. Tex.)) any ground on which the PTAB declines to institute an IPR trial.

Paper 7, 2.

Patent Owner objects to Petitioner’s stipulation, pointing out that “Petitioner does not relinquish any rights or opportunities to pursue in the co-pending district court litigation . . . any ground on which the PTAB declines to institute an IPR trial.” Paper 8, 2. Patent Owner argues that

under the language of the proposed second stipulation, if a ground is not presented to the Board (even though it be a ground that “that could have been reasonably raised”) then the Board necessarily will not grant institution on that ground. And as a result, under the “[n]otwithstanding . . .” clause, Petitioner can continue to pursue such grounds in District Court. Thus,

Petitioner’s proposed second stipulation fails to embody a true *Sotera* stipulation because regardless of the institution decision, Petitioner will remain free to assert any prior art ground in the District Court proceeding that was not presented to the Board—even if Petitioner could reasonably have done so.

Id. at 2–3.

We disagree with Patent Owner’s reading and interpretation of the stipulation. Petitioner’s stipulation states that “Petitioner will not pursue in the co-pending district court litigation (*WSOU Investments, LLC v. Cisco Systems, Inc.*, No. 2:24-cv-00332 (E.D. Tex.)) the specific grounds asserted in the IPR2025-00188 petition, **or any other ground that could have been reasonably raised against Challenged Claims 1 through 10 of U.S. Patent No. 8982691 in an IPR.**” Paper 7, 2 (emphasis added). Petitioner’s reservation of rights also states that “Petitioner does not relinquish any rights or opportunities to pursue in the co-pending district court litigation (*WSOU Investments, LLC v. Cisco Systems, Inc.*, No. 2:24-cv-00332 (E.D. Tex.)) **any ground on which the PTAB declines to institute an IPR trial.** *Id.* (emphasis added). When read together, Petitioner’s stipulation limits Petitioner to pursue in district court a “ground on which the PTAB declines to institute an IPR trial.” This means that the Board must first have “decline[d] to institute” a “ground” in “an IPR trial” before the Petitioner would be allowed to pursue that “ground” in the “co-pending district court litigation.” In our view, Patent Owner misinterprets and overstates Petitioner’s limited reservation of rights in its *Sotera* stipulation.

In *Sotera Wireless, Inc. v. Masimo Corporation*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A) (“*Sotera*”), the Board considered a stipulation similar to the one Petitioner now offers in its

supplemental brief.³ In *Sotera*, the Board found that Petitioner’s stipulation “mitigates any concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions,” and determined that “Petitioner’s broad stipulation ensures that an *inter partes* review is a ‘true alternative’ to the district court proceeding.” *Id.* at 19. Following the analysis in *Sotera*, we find that Petitioner’s stipulation weighs strongly against exercising discretion to deny institution. *See Sotera* at 18–19.

5. Factor 5 - Whether the petitioner and the defendant in the parallel proceeding are the same party

Petitioner concedes that it “is a defendant in the [district court] litigation.” Pet. 15. Petitioner, however, argues that because this “is true of most petitioners in IPR proceedings,” that “this factor should not be a basis for denying institution.”

Patent Owner concurs that Petitioner is a party in the district court litigation, but argues that this is “a significant factor to be weighed—and, following the Board’s prior practice . . . weighs in favor of discretionary denial.” Prelim. Resp. 19 (citing *Samsung Elecs. Co. v. Clear Imaging Research, LLC*, IPR2020-01401, Paper 12 at 21-22 (PTAB Feb. 17, 2021)).

We agree with Patent Owner, that where, as here, the parties are the same in both proceedings, that this factor weighs in favor of discretionary denial. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15, 15 (PTAB May 13, 2020) (informative).

³ In *Sotera*, Petitioner “filed in the District Court ‘a stipulation that, if IPR is instituted, they will not pursue in the District Court Litigation any ground raised or that could have been reasonably raised in an IPR.’” *Sotera v. Masimo*, IPR2020-01019, Paper 12, 18.

6. *Factor 6 - Other circumstances that impact the Board's exercise of discretion, including the merits*

Petitioner contends that

[t]he prior art presented in this Petition presents a compelling case on the merits. During prosecution, the claims of the '691 patent were amended and the Applicants argued that prior art does not teach that a Protected LSP, a Bypass LSP, and a Backup LSP are all in existence at the same time, as opposed to calculating the Backup LSP upon failure. Ex.1002, 41. As explained in [the Petition], these ideas (and the remaining claim limitations) were disclosed in other prior art not reviewed by the Examiner.

Pet. 15–16.

Patent Owner, however, contends that Petitioner has failed to make even a *prima facie* case of obviousness having failed to identify where the asserted references disclose “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node” as required by independent claims 1 and 6.

Prelim. Resp. 20. According to Patent Owner, “the failure to present even a *prima facie* obviousness assertion in the Petition also merits denial of institution.” *Id.* at 21.

Petitioner's assertion that none of the applied prior art presented in the Petition was reviewed by the Examiner during prosecution of the '691 patent is not contested by Patent Owner. *See* Pet. 16 (“The Examiner did not consider any of the references relied upon in the grounds of unpatentability presented below. Moreover, the challenges in this petition are non-cumulative because the prior art presented here describes the claim limitations that were amended to gain allowance.”). Indeed, nothing in the record before us indicates that Petitioner's asserted prior art was previously

presented to the Office, or considered by the Examiner, during prosecution of the '691 patent.

Also, Petitioner's contention that "during prosecution, the claims of the '691 patent were amended and the Applicants argued that prior art does not teach that a Protected LSP, a Bypass LSP, and a Backup LSP are all in existence at the same time, as opposed to calculating the Backup LSP upon failure," is similarly uncontested. *Id.* at 15–16. But as Petitioner asserts, "these ideas (and the remaining claim limitations) were disclosed in [the asserted] prior art not reviewed by the Examiner." *Id.* at 16.

In our review of the merits of this case, we find based upon the current record that Petitioner presents strong evidence to support its contention that the asserted prior art discloses all the limitations of the challenged claims, and that a person of ordinary skill at the time of the claimed invention would have had a reason to combine the teachings of the asserted art in the manner proposed by Petitioner and would have had a reasonable expectation of success in so doing.

For example, Figure 3 from the '691 patent, is shown below.

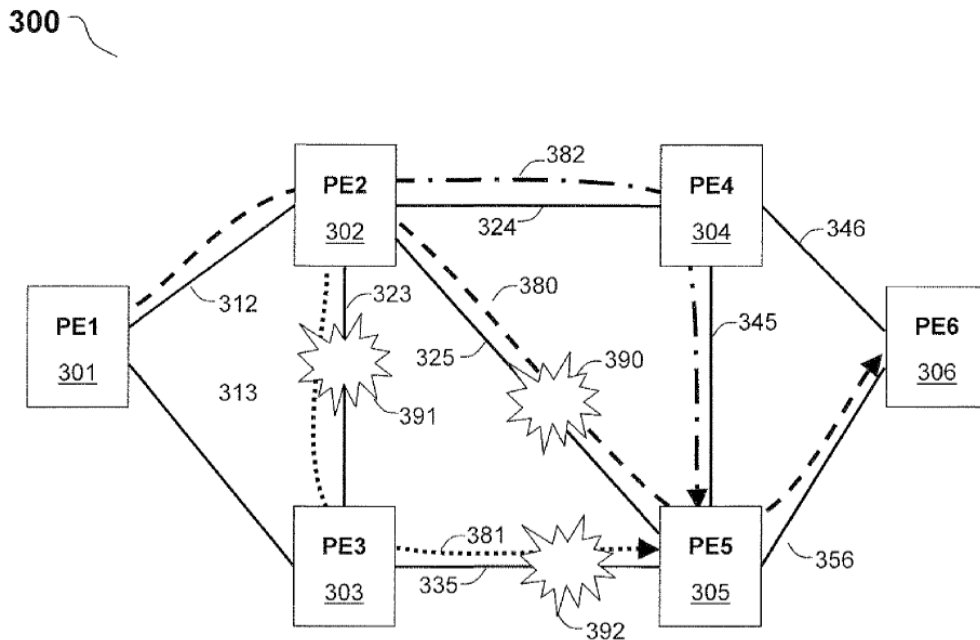


Fig. 3

Figure 3 is an exemplary MPLS network of the claimed invention. When a first fault 390 disrupts facility 325, Bypass LSP 381 compensates for the failure by providing an LSP connection from PE2 302 as a Point of Local Repair, to PE5 305 as its Merge Point. If a second fault then occurs, e.g. fault 391 breaking Bypass LSP 381, Backup LSP 382 connects PE2 302 to PE5 305 providing further protection. *Id.* at 5:48–58.

However, asserted prior art EDC_525 (Ex. 1005), which was not considered by the Examiner, previously described a system and method for implementing a shared protection scheme under a scenario of multiple failures in an optical network. Figures 5A–5E of EDC_525 are shown below.

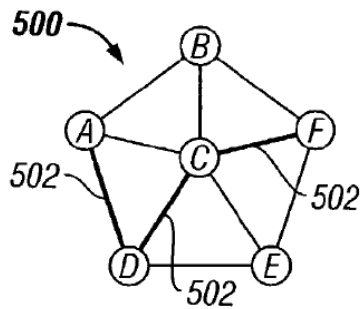


FIG. 5A

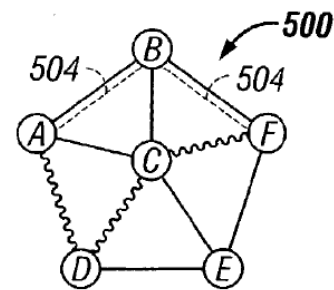


FIG. 5B

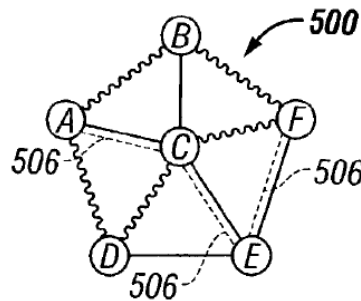


FIG. 5C

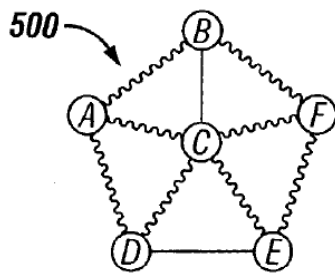


FIG. 5D

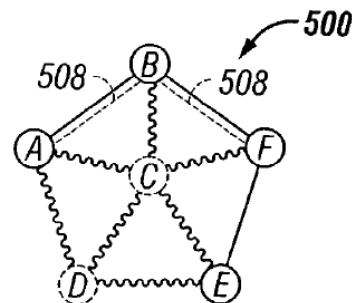


FIG. 5E

Figures 5A–5E, above, depict different stages of network 500. Ex. 1005 ¶ 32. Network 500 comprises five nodes, A through F, wherein a working path from Node A to Node F is denoted by numeral 502. *Id.* In the case of a fault along working path 502, working path 502 is removed from the network topology (i.e., links AD, DC and CF are shown in wavy lines in Figure 5B), and a first protection path is computed. Protection path 504 is shown in a dashed line between the source node (Node A) and the destination node (Node F), using links AB and BF. Thereafter, if the requested connection session between nodes A and F warranted more than one backup, i.e. a second fault occurred, another iteration of a protection path computation takes place. As shown in Figure 5C, links AB and BF are

also removed from the network for this calculation (i.e., AB and BF links are shown in wavy lines). A second protection path between Node A and Node F is computed after removing all previously calculated links from the topological graph. In Figure 5C, reference numeral 506 refers to the second protection path comprising links AC and CF. Ex. 1005 ¶ 32.

EDC_525 goes on to explain that

[i]t should be appreciated that a diverse set of backup paths can provide better protection against multiple failure events in the network. For instance, in the example of a working path being protected by two backup paths, the probability of failure is intuitively low, as even after the failure of the working path and one of the protection paths it is still possible to restore the connection between the end nodes.

Id. ¶ 34

Patent Owner argues that “Petitioner fails to make out a prima facie case of obviousness because the asserted references do not teach or disclose limitations [1.3] and [6.3]—i.e., “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node.” Prelim. Resp. 35–36. Patent Owner argues that “the ‘end-to-end path’ is comprised of ***all the nodes*** traversed inclusive of the Bypass LSP—i.e., the full path disclosed in Figure 3 starting at PE1 301 and ending at PE6 306.” *Id.* at 36. However, our view of Patent Owner’s argument is that Patent Owner is interpreting limitations [1.3] and [1.6] too narrowly, by reading out the recited claim language “*from said Point of Local Repair Node to said Merge Point node.*” *See, e.g.*, Ex. 1001, 7:60–62, 8:42–44.

Based on our review of this case, we find the merits of Petitioner’s obviousness grounds to be particularly strong. Thus, we find that this factor weighs strongly against exercising discretion to deny institution.

7. Conclusion

When considering the *Fintiv* factors, we take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. Based on our review, we find that the *Fintiv* factors weigh in favor of not exercising discretion to deny institution of the Petition. The factors weighing against exercising discretionary denial include the limited investment by the parties on invalidity issues in the district court litigation, the lack of overlap between issues raised in the Petition and in the district court litigation given Petitioner’s *Sotera* stipulation, and the substantial challenge raised by Petitioner on the merits. We find that these factors outweigh the proximity of the district court’s current trial date and the identity of the parties in the two proceedings. The issue of the stay is neutral, weighing neither in favor, nor against, exercising discretionary denial.

We, therefore, are persuaded by the current record that the interests of efficiency and integrity of the system would be best served by instituting *inter partes* review in this case.

D. Patentability Challenges

As indicated above, Petitioner presents two grounds challenging the patentability of all claims of the ’691 patent under 35 U.S.C. § 103. Petitioner challenges: (1) claims 1–10 based on the combined teachings of EDC_525, EDC_892, and Hanif; and (2) claims 1–10 based on the combined teachings of EDC_525, EDC_892, Hanif, and Li. Pet. 17.

1. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

2. Relevant Prior Art

a. EDC_525 (Ex. 1005)

EDC_525 is a U.S. Patent Application Publication to Elie-Dit-Cosaque that published on November 4, 2004, more than one year before the earliest priority date of the ’691 patent. Ex. 1001, code (22); Ex. 1005,

code (43). Petitioner asserts that EDC_525 is prior art under pre-AIA 35 U.S.C. § 102(b). Pet. 18.

EDC_525 relates to “[a] system and method for implementing a shared protection scheme under a scenario of multiple failures in an optical network.” Ex. 1005, code (57), ¶ 8. The method includes computing one or more backup paths between ingress and egress nodes responsive to a connection request received in the network, which can be activated upon a failure condition of the working path. *Id.* ¶ 8. The backup paths may be based on link and/or node disjointedness, as well as resource-based cost constraints. *Id.* A structure is used for computing one or more backup paths between the ingress and egress nodes, wherein each of the backup paths is activatable upon a failure condition associated with at least one of the working path and the backup paths. *Id.* at 9. A control structure transmits messages to nodes in the network for setting up the working path and backup paths. *Id.*

Figures 5A–5E of EDC_525 are reproduced below.

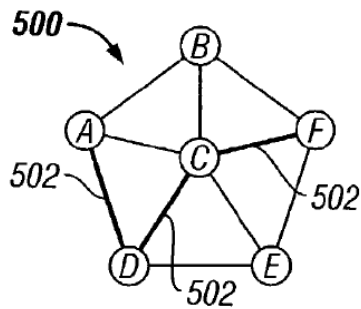


FIG. 5A

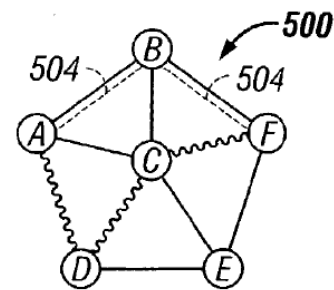


FIG. 5B

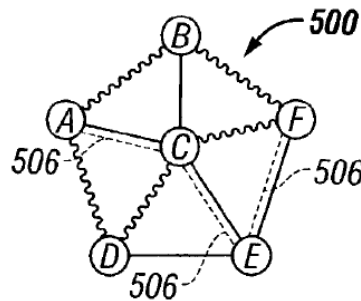


FIG. 5C

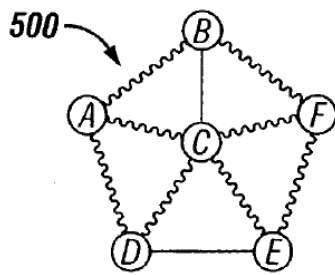


FIG. 5D

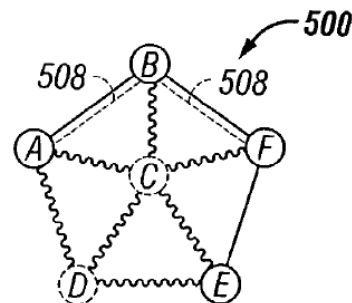


FIG. 5E

Figures 5A–5E, above, depict different topological stages of an exemplary network 500 wherein multiple backup paths may be computed depending on link disjointedness and/or node disjointedness. *Id.* ¶ 32. Network 500 comprises five nodes, A through F, wherein an exemplary working path from Node A to Node F is denoted by reference numeral 502. *Id.* In a complete link disjoint scheme, successive path computations involve network topologies wherein the links that make up previously computed paths are logically removed from the topology. *Id.* Figures 5B through 5D depict three topologies that obtain with respect to the exemplary network 500 when a complete link disjoint scheme is used for calculating multiple backup paths, in which previously computed paths are illustrated as having

links with wavy lines, which are logically removed from the network topology for calculating subsequent paths. *Id.*

b. EDC_892 (Ex. 1006)

EDC_892 is a U.S. Patent Application Publication that published on December 9, 2004, more than one year before the earliest priority date of the '691 patent. Ex. 1001, code (22); Ex. 1006, code (43). Petitioner asserts that EDC_892 is prior art under pre-AIA 35 U.S.C. § 102(b). Pet. 18.

EDC_892 relates to a method and apparatus for providing shared path protection in a wavelength-division multiplexing (WDM) network. Ex. 1006 ¶ 4. In EDC_892, protection paths are dynamically allocated in a wavelength-division multiplexed network including a plurality of nodes coupled by communication links. *Id.* ¶ 10. A database stores information regarding the status of the network including information associating channels in each link of the node to one or more protection paths and information associating channels in each link to respective working paths. *Id.* Upon receiving a request for a new protection path to protect a defined working path, links are identified that have at least one shareable channel which may be shared between the new protection path and one or more existing protection paths. *Id.* Additional links are identified that do not have a shareable channel but do have an unused channel that may be used for the new protection path. *Id.* EDC_525 discloses that a “working path may be calculated using a number of various well-known techniques,” including that of EDC_892, which EDC_525 incorporates by reference. Ex. 1005 ¶ 31. EDC_892 explains that “protection messages” for updating the global allocation database of each node may be a setup message with a field that identifies the connection as used for protection and a “field that identifies the

working path that needs the protection.” Ex. 1006 ¶¶ 33, 36; *see also* Ex. 1005 ¶¶ 28–31.

c. Hanif (Ex. 1013)

Hanif is a U.S. Patent Application Publication that published on November 26, 2009, more than one year before the earliest priority date of the '691 patent. Ex. 1001, code (22); Ex. 1013, code (43). Petitioner asserts that Hanif is prior art under pre-AIA 35 U.S.C. § 102(b). Pet. 18.

Hanif relates to “techniques for configuring local repair connections for protected connections in a network environment.” Ex. 1013 ¶ 2. Figure 1 of Hanif is reproduced below.

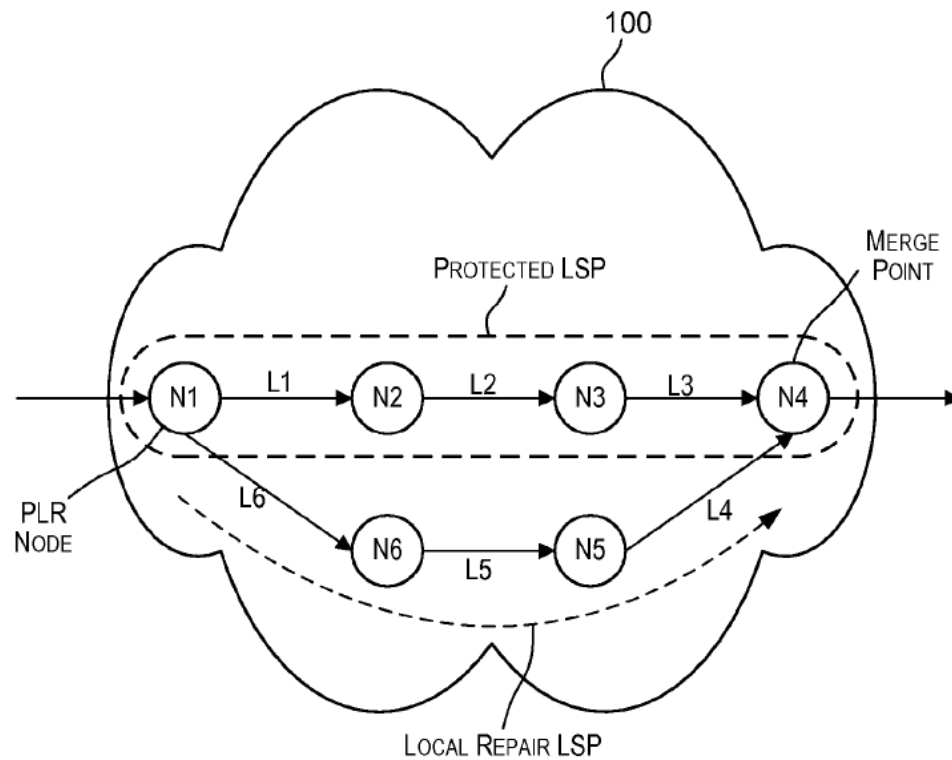


FIG. 1

Figure 1, above, shows a simplified diagram of a network 100 that uses a connection-oriented protocol for data transmission. *Id.* ¶ 28. Hanif discloses that the Multi-Protocol Label Switching (MPLS) protocol is used to establish a connection between end nodes N1 and N4. *Id.* ¶ 31. In Network 100, an LSP is configured between nodes N1 and N4 having a path N1-L1-N2-L2-N3-L3-N4. *Id.* ¶ 32. The LSP comprises a list of node/link pairs from originating or ingress node N1 to the destination or egress node N4, and carries data traffic from ingress node N1 to egress node N4 via link L1, LSRN2, link L2, LSRN3, and link L3. *Id.* Once an LSP has been set up, the LSP is used to transmit data from the ingress node to the egress node along the preconfigured path. *Id.* Hanif explains that one or more local repair connections may be set up for a connection in order to safeguard against network outages or disruptions that may be caused by failure of one or more links and/or nodes in the connection. *Id.* ¶ 34. Information related to local repair LSPs such as LPATHs associated with the local repair LSPs may be stored in memory. *Id.* ¶ 70. The memory may also store network topology information that is used for determining local paths associated with local repair LSPs. *Id.* ¶ 74. As part of the determination, once all the nodes in the OPATH downstream from the PLR have been considered for merge points for the local repair path and a local repair path could not be found to any of the OPATH nodes downstream from the PLR, an error condition may then be output indicating that a local repair LSP could not be established for the protected LSP. *Id.* ¶ 50.

E. Obviousness Based on EDC_525, EDC_892, and Hanif (Ground 1)

Petitioner contends claims 1–10 are unpatentable as obvious under 35 U.S.C. § 103 over the combined teachings of EDC_525, EDC_892, and

Hanif. Pet. 21–77. Patent Owner contends that “the asserted references do not teach or disclose limitations [1.3] and [6.3]—i.e., “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node.” Prelim. Resp. 35–36. Patent Owner does not dispute Petitioner’s showing with respect to any other limitations or claims challenged by Petitioner under Ground 1. *See* Prelim. Resp. 33–40. We consider the rationale to combine the asserted art and the disputed limitations first.

1. Rationale to Combine the Asserted Art

Petitioner asserts that EDC_525 and EDC_892 are both analogous art because they pertain to computer networks that use backup paths, like the ’691 patent. Pet. 27–28. Petitioner also asserts that both EDC_525 and EDC_892, like the ’691 patent, address the additional problems of using network topology information, SRLG information, or shortest path first information to calculate backup paths. *Id.*

Petitioner argues that a person of ordinary skill in the art would have considered and combined the teachings because

EDC_525 suggests the combination by expressly citing to EDC_892 and incorporating it by reference. Ex.1005, [0031]; Ex.1003, ¶87. EDC_525 discloses that once backup path computations are completed, appropriate setup and/or activation messages are transmitted from the nodes along the path in the network. Ex.1005, [0031]. Consistent with EDC_525’s disclosure (*see* Ex.1005, [0030]), EDC_892 teaches that a “SETUP” message (1) indicates that the connection is for a protection path and (2) identifies the working path that needs the protection path.

Id. at 28 (citing Ex. 1006 ¶ 33; Ex. 1003 ¶ 88).

According to Petitioner, it would have been obvious to a person of ordinary skill in the art to include in EDC_525’s setup message an indication

that the computed connection is used for protection and also identify the working path that needs the protection, “because such information would be useful ‘for updating the global allocation database’ of the receiving nodes.” Pet. 28 (citing Ex. 1006 ¶ 33). Petitioner argues that “[t]his is consistent with EDC_525’s disclosure that a node’s ‘global allocation database may be compiled from allocation information provided by other nodes.’” Pet. 28–29 (citing Ex. 1005 ¶ 30; *see also* Ex. 1005 ¶¶ 28–30; Ex. 1003 ¶ 89).

Petitioner argues that

[t]he proposed combination of EDC_892 with EDC_525 is nothing more than combining prior art elements (e.g., a setup message that specifically identifies the working path that is protected by a given backup path, per EDC_892, with EDC_525’s setup messages) according to known methods to yield predictable results (e.g., providing information for updating a node’s global database).

Pet. 29 (citing Ex. 1003 ¶ 90). Petitioner also argues that “[t]he results would have been predictable and there would have been a reasonable expectation of success (1) since EDC_525 incorporates EDC_892’s teachings into its own specification and (2) given the similarities of the two references.” Pet. 29.

With respect to Hanif, Petitioner asserts, among other things, that

[i]t would have been obvious to a POSITA to consider and apply the teachings of Hanif, when implementing EDC_525’s network node, and execute the instructions stored on the processor-accessible medium to achieve the results that EDC_525 is already describing; namely, utilizing the instructions to carry out network operations. Ex. 1003, ¶ 95. The combination of Hanif with EDC_525 merely represents a simple combination of known elements (e.g., Hanif’s processor that executes instructions with EDC_525’s network node that includes instructions accessible by a processor) to yield

predictable results (e.g., enabling EDC_525's network node to execute the instructions to carry out network operations).

Pet. 30–31 (citing Ex. 1003 ¶ 96).

At this stage of the proceeding, Petitioner provides sufficient evidence and argument for combining the teachings of the asserted art in the manner proposed by Petitioner. Patent Owner does not substantively dispute Petitioner's evidence or arguments for combining the asserted references.

Based on this preliminary record, Petitioner has made a sufficient showing that at the time of the claimed invention a person of ordinary skill in the art would have had reason to combine the teachings of the asserted art in the manner described by the Petition.

2. Independent Claim 1- Contested Limitation [1.3]⁴

Limitation 1.3 recites “*obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node.*” Ex. 1001, 7:60–62.

For this limitation, Petitioner explains that “a first backup path corresponds to the “*Bypass LSP*,” an ingress node corresponds to the “*Point of Local Repair Node*,” and an egress node corresponds to the “*Merge Point node*.” Pet. 51 (citing Ex. 1003 ¶¶ 152–153). Petitioner asserts that “EDC_525 teaches ‘*obtaining the nodes traversed by an end-to-end path*’ by disclosing that each network node has a ‘global database’ with ‘**current topology . . . for intelligent, dynamic creation of network paths under**

⁴ In the Preliminary Response, Patent Owner disputes Petitioner's showing only with respect to limitations [1.3] and [6.3]. See Prelim. Resp. 29–30, 35–40. Limitations [1.3] and [6.3] recite similar subject matter. According to Patent Owner, “Claim 6 restates the method of Claim 1 as a non-transitory machine readable storage medium.” *Id.* at 28.

control of control logic” and that the topology information is for **‘each channel of each link in the entire network domain.’**” Pet. 51 (citing Ex. 1005 ¶ 26). Petitioner points out that “[i]nformation regarding other links in the global allocation database may be **compiled from allocation information provided by other nodes** in the network domain. In one implementation, such information may be shared among all nodes in the network.” Pet. 52 (citing Ex. 1005 ¶ 30, Figs. 2, 3A, 3B; Ex. 1003 ¶¶ 154–156).

Petitioner points out that “EDC_525 discloses that network topology information is used to determine backup paths that are both link and node disjoint.” Pet. 53 (citing Ex. 1005 ¶¶ 8, 32–33, Claim 6, Fig. 5A–5E). “For example,” Petitioner explains, EDC_525’s path calculation

logically removes from the topology information an already-used path node and then calculates “one or more backup paths between the ETE [end-to-end] nodes.” Ex.1005, [0032]-[0033], [0038]. A POSITA would have understood that in order to calculate backup paths that are node disjoint, the topology information identifies the nodes traversed from the ingress node to the egress node (i.e., end-to-end); these nodes are then avoided when calculating disjoint backup paths. Accordingly, it would have been obvious to a POSITA for the network topology information, which is obtained from “all nodes” for “each link in the entire network domain,” to include information regarding nodes traversed by an end-to-end path of the first backup path (“*Bypass LSP*”) from an ingress node (“*Point of Local Repair Node*”) to an egress node (“*Merge Point node*”). Ex.1005, [0030], [0026]; Ex.1003, ¶157.

Pet. 53.

Petitioner contends that “EDC_525 alone and in combination with EDC_892 and Hanif discloses obtaining network topology information, including the nodes and links traversed by the end-to-end path of the first

backup path from an ingress node to an egress node, which renders obvious this element.” Pet. 55 (citing Ex.1003 ¶ 162).

Patent Owner, however, challenges Petitioner’s showing with respect to this limitation. Patent Owner contends that the recited “end-to-end path”

is comprised of ***all the nodes*** traversed inclusive of the Bypass LSP—i.e., the full path disclosed in Figure 3 starting at PE1 301 and ending at PE6 306. The specification of the ’691 Patent makes clear that the “end-to-end path” disclosed in limitations [1.3] and [6.3] is not merely comprised of the Bypass LSP nodes themselves, but of all nodes from one end of the path to the other end that ***also incorporate*** the Bypass LSP nodes. *See, e.g.,* Ex. 1001 at 6:10-13 (“The end-to-end path of the main Bypass LSP based upon the nodes it is traversing may be obtained from the Explicit_Route_object of the path message provided by RSVP Traffic Engineering and is obtained at step 415.”).

Prelim. Resp. 36–37.

Patent Owner argues that “[w]hen the Challenged Claims use the term “end-to-end path of said Bypass LSP,” it must mean something other than merely “Bypass LSP.” *Id.* at 37. According to Patent Owner, [c]onflating “end-to-end path” with “Bypass LSP,” as Petitioner does, is erroneous and contrary to the canons of claim construction.” *Id.* Patent Owner contends that [n]one of the prior art references asserted by Petitioner in Ground 1 discloses the “end-to-end path” as set forth in the ’691 Patent, and as illustrated in the example embodiment of Figure 3 at PE1 301–PE6 306.” *Id.* at 38.

We agree with Petitioner and disagree with Patent Owner. In our view, Patent Owner reads limitation [1.3] too narrowly, essentially reading out or ignoring the recited claim language “*from said Point of Local Repair Node to said Merge Point node.*” Limitation [1.3] expressly recites

“obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node.”

Ex. 1001, 7:60–62 (emphasis added).

EDC_525 teaches that “global database 206 provides information regarding each channel of each link in the entire network domain.” Ex. 1005

¶ 26. EDC_525 goes on to explain that

[i]n operation, every exemplary network node 200 maintains the entries in the global allocation database for its own links. **Information regarding other links in the global allocation database may be compiled from allocation information provided by other nodes in the network domain. In one implementation, such information may be shared among all nodes in the network.**

Id. ¶ 30 (emphasis added).

With respect to Figures 5A–5E, EDC_525 further explains that if the requested connection session between nodes A and F warranted more than one backup, another iteration of a protection path computation takes place. As shown in FIG. 5C, links AB and BF are also removed from the network topology for this calculation (i.e., AB and BF links are shown in wavy lines). A second protection path between Node A and Node F is computed, again using any known or heretofore unknown algorithm, after removing all previously calculated links from the topological graph. Reference numeral 506 refers to the exemplary second protection path comprising links AC and CF.

Id. ¶ 32.

Given these teachings, we agree with Petitioner that EDC_525’s network topology information, which is obtained from “all nodes” for “each link in the entire network domain,” would include information regarding nodes traversed by an end-to-end path of a first backup path (“*Bypass LSP*”) from an ingress node (“*Point of Local Repair Node*”) to an egress node (“*Merge Point node*”). Pet. 53 (citing Ex.1005 ¶¶ 26, 30; Ex.1003 ¶ 157).

3. Independent Claim 1 – Uncontested Limitations

Patent Owner does not expressly contest Petitioner's showing with respect to the remaining portions of independent claim 1. These include the preamble and limitations [1.1], [1.2], and [1.4] – [1.6]. *See* Prelim. Resp. 29–42.

Petitioner provides sufficient evidence and argument, supported by the testimony of Dr. Houh, that these uncontested portions of claim 1 are met by Petitioner's proposed combination of the asserted art, and that at the time of the claimed invention, these portions of claim 1 would have been obvious to a person of ordinary skill in the art. *See* Pet. 33–51, 55–69; Ex. 1003 ¶¶ 104–151, 163–191.

After reviewing Petitioner's arguments and evidence concerning these uncontested portions of claim 1, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of the asserted art meet these uncontested portions of claim 1.

4. Conclusion as to Independent Claim 1

Based on the current record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to independent claim 1 under 35 U.S.C. § 103(a) as obvious over the combined teachings of EDC_525, EDC_892, and Hanif, and that a person of ordinary skill in the art at the time of the claimed invention would have had sufficient reason to combined the asserted art in the manner proposed and would have had a reasonable expectation of success in so doing.

5. Dependent Claims 2–5, 7–10

Petitioner contends the combination of EDC_525, EDC_892, and Hanif teaches or suggests the recited limitations of dependent claims 2–5 and 7–10. *See* Pet. 70–74, 77. Petitioner provides sufficient evidence and

argument showing that the combination of EDC_525, EDC_892, and Hanif teaches the limitations of these dependent claims. Petitioner also provides evidence and argument that one of ordinary skill in the art would have combined the teachings of EDC_525, EDC_892, and Hanif in the manner described in the Petition. Petitioner's position is supported by the testimony of Dr. Houh. *See* Ex. 1003 ¶¶ 192–204, 216–221.

Patent Owner does not respond substantively to Petitioner's arguments or evidence with respect to these dependent claims. *See generally* Prelim. Resp.

We have considered Petitioner's evidence and arguments with respect to dependent claims 2–5 and 7–10. Based on this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently that the combined teachings of EDC_525, EDC_892, and Hanif meet the recited limitations of these dependent claims and that one of ordinary skill in the art at the time of the claimed invention would have had sufficient reason to combine the teachings of the asserted art in the manner described in the Petition.

Based on this preliminary record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to dependent claims 2–5 and 7–10 under 35 U.S.C. § 103(a) as obvious over the combination of EDC_525, EDC_892, and Hanif.

F. Obviousness Based on EDC_525, EDC_892, Hanif, and Li (Ground 2)

Petitioner contends that claims 1–10 are unpatentable as obvious under 35 U.S.C. § 103(a) over EDC_525, EDC_892, Hanif, and Li. Pet. 77–87. Petitioner's position is supported by the testimony of Dr. Houh. *See* Ex. 1003 ¶¶ 222–250.

Patent Owner provides only a limited response to Petitioner's showing under Ground 2. *See* Prelim. Resp. 42.

We have considered Petitioner's evidence and arguments with respect to Ground 2 as well as Patent Owner's response. However, because we determine that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge to independent claim 1 under 35 U.S.C. § 103(a) as obvious over EDC_525, EDC_892, and Hanif (Ground 1), we institute *inter partes* review as to all challenges in the Petition, including Petitioner's challenge under Ground 2. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

III. CONCLUSION

For the foregoing reasons, we are persuaded that the Petition demonstrates a reasonable likelihood of prevailing in showing the unpatentability of at least one of the challenged claims of the '691 patent.

IV. ORDER

Accordingly, it is

ORDERED that an *inter partes* review is instituted as to all challenged claims on the grounds raised in the Petition; and

FURTHER ORDERED that *inter partes* review is instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

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