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Paper 8
Date: August 8, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
v.
CORRIGENT CORPORATION,
Patent Owner.

IPR2023-00447
Patent 9,118,602 B2

Before KRISTEN L. DROESCH, NATHAN A. ENGELS, and CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner Cisco Systems, Inc. filed a Petition (Paper 3, "Pet.") requesting *inter partes* review of claims 1–26 of U.S. Patent No. 9,118,602 B2 (Ex. 1001, "the '602 patent"). Patent Owner Corrigent Corporation filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and any response thereto shows "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." Upon consideration of the Petition and the evidence of record, we determine Petitioner has demonstrated a reasonable likelihood of prevailing in establishing unpatentability of at least one claim of the '602 patent. Accordingly, we institute *inter partes* review.

A. Real Parties-in-Interest

Petitioner identifies itself as the sole real party-in-interest. Pet. 65. Patent Owner identifies itself as the sole real party-in-interest. Paper 5, 2.

B. Related Matters

The parties state that the '602 patent is involved in the following district court cases: *Corrigent Corp. v. Cisco Systems, Inc.*, No. 6:22-cv-396 (W.D. Tex.), and *Corrigent Corp. v. Arista Networks, Inc.*, No. 1:22-cv-497 (D. Del.). Pet. 65; Paper 4, 2.

C. Illustrative Claim

Of the challenged claims, claims 1, 15, and 26 are independent claims. Claim 1 is copied below with bracketed labels added to reflect those referenced in the parties' briefs.

> [1.0] A method for assigning and utilizing an Ethernet physical data port in an Ethernet Link Aggregation Group (LAG) in a

Multi-Protocol Label Switching (MPLS) network, the method comprising the steps of:

[1.1] assigning, by a first MPLS/LAG switch, a single physical tunnel port of a LAG to a network tunnel, wherein the single physical tunnel port of the LAG meets a bandwidth requirement of the network tunnel, and wherein said single physical tunnel port of the LAG has a port serial number;

[1.2] dedicating a sub-set of bits in a data packet label prepared by the first MPLS/LAG switch to encode said port serial number of said single physical tunnel port of the LAG into the data packet label;

[1.3] sending, by said first MPLS/LAG switch, the data packet label, in which said port serial number of said single physical tunnel port is encoded, to a preceding node;

[1.4] receiving from the preceding node, by said first MPLS/LAG switch, a data packet comprising said data packet label, in which said port serial number of said single physical tunnel port is encoded; and

[1.5] sending said data packet from said first MPLS/LAG switch to a second MSPLS/LAG switch via said single physical tunnel port having the port serial number encoded in the data packet label.

D. Alleged Grounds of Unpatentability

Petitioner asserts that claims 1–26 would have been unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–13, 15–24, 26	103[1]	Raz[2]
1–26	103	Raz, Ferguson[3]

Pet. 5. Petitioner also supports its challenge with a Declaration of Samrat Bhattacharjee, Ph.D. Ex. 1004.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends a person of ordinary skill in the art at the time of the invention would have had "a bachelor's degree in computer science, computer engineering or an equivalent, as well as two years of professional experience" and "a working knowledge of hardware and software for packet-switched networking, MPLS and LAG." Pet. 6 (citing Ex. 1004 ¶¶ 57–58). Petitioner also states that a lack of work experience can be

[1] The '605 patent was filed after the Leahy-Smith America Invents Act ("AIA") revisions to 35 U.S.C. § 103 became effective. Therefore, we apply the AIA version of § 103; however, our analysis would be the same under the pre-AIA version of the statute.
[2] US 7,466,697 B1; filed July 23, 2002. Ex. 1006.
[3] US 6,545,979 B1; filed Nov. 12, 2002. Ex. 1007.

remedied by additional education, and vice versa. Pet. 6 (citing Ex. 1004 ¶ 57).

Patent Owner does not address the level of ordinary skill in its Preliminary Response. For the purposes of this Decision, we apply Petitioner's level of ordinary skill, which is consistent with the level reflected by the '602 patent and the asserted prior art.

B. Claim Construction

We construe claims using the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc) and related cases. *See* 37 C.F.R. § 42.100(b) (2022). Under that precedent, the words of a claim are generally given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13.

Neither party proposes any express claim constructions. Pet. 6–7; *see generally* Prelim. Resp. At this stage, we determine it is unnecessary to construe any terms. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. Discretionary Denial Under 35 U.S.C. § 314

"[T]he PTAB will not discretionarily deny institution of an IPR or PGR in view of parallel district court litigation where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the

petition." Katherine K. Vidal, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022), available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf. Petitioner filed such a stipulation. Ex. 1020.

D. Ground 1

Petitioner provides a claim-by-claim, limitation-by-limitation comparison of each of claims 1–13, 15–24, and 26 to specific teachings of Raz, with citations to testimony from Dr. Bhattacharjee as additional supporting evidence. Pet. 12–52. Patent Owner contends Petitioner has not shown that any challenged claim is unpatentable in view of Raz, with arguments directed to limitation [1.5] of claim 1 (Prelim. Resp. 4–10), which Patent Owner contends are also applicable to limitations [15.8] and [26.6] of claims 15 and 26, respectively (Prelim. Resp. 10).

1. *Claim 1*

a) *[1.0] A method for assigning and utilizing an Ethernet physical data port in an Ethernet Link Aggregation Group (LAG) in a Multi-Protocol Label Switching (MPLS) network, the method comprising the steps of:*

Petitioner contends Raz teaches the communication of packets in an MPLS network using link aggregation to transport high-speed network traffic within a Label Switching Router ("LSR") of the MPLS network. Pet. 13. According to Petitioner, Raz teaches that individual packets from a high-speed data stream are assigned to one of a plurality of subports for transportation through the LSR and then re-aggregated into the high-speed packet stream before being forwarded to the next node in a network such as the next LSR. Pet. 13–14 (citing Ex. 1006, 2:41–67, 6:34–45, Fig. 1), 25.

Petitioner contends that "[w]hile Raz discusses the utilization of subports in a LAG within a LSR to communicate high-speed packet streams in an MPLS network, a [person of ordinary skill in the art] similarly would have known to use Ethernet physical data ports of a router or switch in an Ethernet LAG to communicate high-speed packet streams in a MPLS network." Pet. 15.

On the current record, Patent Owner does not address or rebut Petitioner's showing for this limitation.

b) *[1.1] assigning, by a first MPLS/LAG switch, a single physical tunnel port of a LAG to a network tunnel, wherein the single physical tunnel port of the LAG meets a bandwidth requirement of the network tunnel, and wherein said single physical tunnel port of the LAG has a port serial number;*

Petitioner contends Raz teaches the assignment of one subport of a LAG to a LSP within a LSR to communicate packets in a high-speed packet stream. Pet. 16. Further, Petitioner contends "Raz explains that the assigned subport meets a bandwidth requirement of the LSP (i.e., the claimed network tunnel)" and that bits in the MPLS label indicate the subport's serial number. Pet. 18 (citing Ex. 1006, 2:23–25, 7:7–26, 9:41–48, 11:13–12:9, Fig. 5; Ex. 1004 ¶¶ 88, 89). Further, Petitioner contends Raz would have motivated a person of ordinary skill "to assign a physical tunnel port of the MPLS/LAG switch to a network tunnel in order to provide a tunnel pathway that can meet the bandwidth requirements 'in the event a wide connection is to be allocated' for forwarding packets in a high-speed packet stream" to communicate packets between MPLS/LAG switches. Pet. 19–20 (citing Ex. 1006, 2:23–25, 7:7–16, 11:3–12:9, Fig. 5; Ex. 1004 ¶ 91).

On the current record, Patent Owner does not address or rebut Petitioner's showing for this limitation.

c) *[1.2] dedicating a sub-set of bits in a data packet label prepared by the first MPLS/LAG switch to encode said port serial number of said single physical tunnel port of the LAG into the data packet label;*

Petitioner contends "Raz discusses dedicating a sub-set of bits in MPLS label 140 (i.e. a data packet label) prepared by an LSR to encode the subport serial number of a physical subport of the LAG into the label." Pet. 20–22 (citing Ex. 1006, 9:33–36, 9:41–58, Figs. 3, 4; Ex. 1004 ¶ 94). Petitioner also contends a person of ordinary skill would have been motivated to extend Raz's teaching of dedicating a sub-set of bits in MPLS label 140 to dedicating a sub-set of bits in an MPLS label to encode the serial number of the physical port of the MPLS/LAG switch to be used to forward packets through a network tunnel formed by the LSP. Pet. 22 (citing Ex. 1006, 2:23–25, 7:7–16, 7:22–26, 11:3–12:9, Fig. 5; Ex. 1004 ¶ 95).

On the current record, Patent Owner does not address or rebut Petitioner's showing for this limitation.

d) *[1.3] sending, by said first MPLS/LAG switch, the data packet label, in which said port serial number of said single physical tunnel port is encoded, to a preceding node;*

Petitioner contends that Raz teaches that the label encoding the serial number of the subport is sent from an LSR that generates the label (the claimed first MPLS/LAG switch) to an upstream (preceding) node. Pet. 23 (citing Ex. 1006, 7:26–38, 8:4–10, 9:49–58; Ex. 1004 ¶¶ 97–101).

On the current record, Patent Owner does not address or rebut Petitioner's showing for this limitation.

e) *[1.4] receiving from the preceding node, by said first MPLS/LAG switch, a data packet comprising said data packet label, in which said port serial number of said single physical tunnel port is encoded; and*

Petitioner contends Raz teaches that the LSR corresponding to the claimed first MPLS/LAG switch receives a data packet from a previous node via the LSP. Pet. 24 (citing Ex. 1006, 7:39–45, 8:7–10, 9:29–58, 11:13–12:9, 14:23–26; Ex. 1004 ¶¶ 102–105).

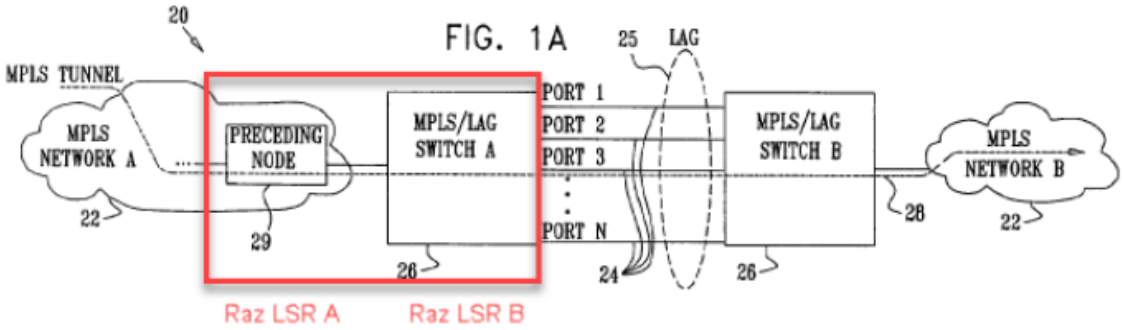
On the current record, Patent Owner does not address or rebut Petitioner's showing for this limitation.

f) *[1.5] sending said data packet from said first MPLS/LAG switch to a second MSPLS/LAG switch via said single physical tunnel port having the port serial number encoded in the data packet label.*

Petitioner contends Raz discloses sending a data packet from a first MPLS/LAG switch to a second MPLS/LAG switch via a single physical tunnel port having the port serial number encoded in the data packet label. Pet. 25 (citing Ex. 1004 ¶ 107). Petitioner contends LSR B in the example described in column 7 of Raz corresponds to the claimed first MPLS/LAG switch and a person of ordinary skill "would have understood that the data packet in LSR B could be sent to another LSR (which would correspond to the claimed second MPLS/LAG switch) via a physical tunnel support (subport 3 [in the example of column 7]) having the port serial number encoded in the data packet label." Pet. 25 (citing Ex. 1006, 7:17–29, 7:39–45, 9:29–58, 14:23–26, Fig. 3, 4; Ex. 1004 ¶ 107). Petitioner also contends that "it would have been within the knowledge of a [person of ordinary skill in the art] to communicate packets from a first MPLS/LAG switch to a second MPLS/LAG switch in a MPLS network in the same way as packets

communicated from one LSR to another in Raz." Pet. 25 (citing Ex. 1004 ¶ 108).

Patent Owner contends Raz focuses on port assignment within a single LSR, and Patent Owner provides the following annotated version of Figure 1A of the '602 patent to illustrate its arguments:



Prelim. Resp. 7. Figure 1A of the '602 patent is a block diagram illustrating two MLPS Networks 22 connected by two MPLS/LAG switches 26 using N physical Ethernet ports 24. Ex. 1001, 1:58–65. Patent Owner's annotations depict that Raz discloses communications between LSR B and its preceding node LSR A, and Patent Owner argues "Raz has no discussion of communication of a data packet between a first and second MPLS/LAG switch" and "says ***nothing*** about how Raz (or a modified version of Raz) would handle data packets ***after*** they leave the first MPLS/LAG switch, let alone *how* or *why* those packets would be handled in the claimed manner." Prelim. Resp. 7–8. Similarly, Patent Owner argues "none of the cited passages from Raz say anything about what would happen to a data packet ***after*** it leaves the LSR that is the focus of Raz, let alone which port the data would travel on in a subsequent loop." Prelim. Resp. 8.

Patent Owner also contends that neither the Petition nor Dr. Bhattacharjee discusses how or why Raz would be modified or why such modifications would occur with a reasonable expectation of success. Prelim.

Resp. 8–10. Further, Petitioner contends Dr. Bhattacharjee's testimony is conclusory and entitled to little weight. Prelim. Resp. 8–9.

On the current record, we preliminarily determine Petitioner has adequately shown that a person of ordinary skill in the art would have understood Raz's teachings would have applied to packet communications between a first and second MPLS/LAG switch. Pet. 15 (citing Ex. 1004 ¶ 82). Contrary to Patent Owner's argument that Dr. Bhattacharjee's testimony is conclusory, Dr. Bhattacharjee quotes Raz's description of a port forwarding module in LSR B that examines the label in a received packet and forwards the packet to the correct subport for packet processing. Ex. 1004 ¶ 107 (quoting Ex. 1006, 7:39–45). Dr. Bhattacharjee also quotes Raz's claim 1, which recites forwarding inbound packets transmitted by an upstream node to a downstream node in accordance with the label associated with the inbound packet. Ex. 1004 ¶ 107. Patent Owner is free to explore Dr. Bhattacharjee's testimony during the trial phase, but for the purposes of institution, we preliminarily determine that Raz sufficiently teaches or suggests limitation [1.5].

g) Conclusion Regarding Ground 1

Based on the current record, we preliminarily determine that Petitioner has shown a reasonable likelihood that it will prevail in its challenge to claim 1 as unpatentable in view of Raz. Petitioner additionally presents contentions for claims 2–13, 15–24, and 26, which Patent Owner has not separately address at this stage. We institute on all claims and all grounds raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); 37 C.F.R. § 42.108(a) ("When instituting . . . review, the

Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.").

E. Ground 2

Petitioner provides a claim-by-claim, limitation-by-limitation comparison of claims 1–26 to the combined teachings of Raz and Ferguson, citing Ferguson as "build[ing] on the previous analysis of Raz by disclosing a system for communicating packets between switches and routers in an MPLS network." Pet. 52; *see* Pet. 52–55. Petitioner also cites Ferguson as teaching the limitations of dependent claims 14 and 25, citing Ferguson's teachings that link aggregation refers to a technique by which multiple physical interconnects are logically associated and treated as a single, aggregated link. Pet. 60 (citing Ex. 1007, 1:28–30, 1:60–63, 2:44–47, 3:42–44, 4:1–7; Ex. 1004 ¶¶ 293, 346).

According to Petitioner, among other reasons for combining the teachings of Raz and Ferguson, "both Raz and Ferguson are directed to solving the problem of ensuring enough bandwidth is available to communicate high-speed packet streams through an MPLS network." Pet. 57 (citing Ex. 1006, 10:60–11:12, 14:33–41, 15:47–55, 17:1–9, Fig. 5; Ex. 1007, 1:28–42, 2:54–57, 4:55–60; Ex. 1004 ¶¶ 247–249). Further, Petitioner contends a person of ordinary skill "would have understood from the disclosures in Ferguson that techniques for utilizing an Ethernet physical data port in a LAG to communication data packets between routers or switches in an MPLS network are also applicable to the use of subports transmitting the data packets within the routers or switches, and vice versa." Pet. 59 (citing Ex. 1004 ¶ 250; Ex. 1007, 5:61–6:6); *see* Pet. 56–59.

Patent Owner contends Petitioner "relies on Ferguson primarily for its Figures 2A–2C, which stand for the unremarkable proposition that communications can occur between routers in an aggregated interface." Prelim. Resp. 13. Further, Patent Owner argues "[t]he sheer fact that Ferguson might illustrate, at a high-level, communication between routers in an aggregated interface (such as those shown in Figs. 2A–2C of Raz [sic, Ferguson]) does nothing to explain *how* or *why* ***Raz*** would be modified in view of Ferguson to meet the requirements of the claims (such as element [1.5]), let alone why there would be a reasonable expectation of success in doing so." Prelim. Resp. 13.

On the current record, we preliminarily determine Petitioner has adequately shown a person of ordinary skill would have understood from the teachings of Raz and Ferguson that Raz's techniques for using subports to transmit data packets within a router or switch would also have been applicable to an Ethernet physical data port in a LAG that communicates data packets between routers or switches in an MPLS network. *See* Pet. 59. Consistent with Patent Owner's characterization of this combination as "unremarkable" (Prelim. Resp. 13), on the current record, we preliminarily agree with Petitioner's explanations of what a person of ordinary skill would have understood from the teachings of Raz and Ferguson and we preliminarily disagree with Patent Owner's arguments that Petitioner has failed to explain how or why a person of ordinary skill would have combined the teachings of Raz and Ferguson.

III. CONCLUSION

For the reasons set forth above, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail with respect to at

least one of claims 1–26 of the ’602 patent. Accordingly, we institute an *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review is instituted as to claims 1–26 of the ’602 patent on each of the grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’485 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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