

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.,
Petitioner,

v.

SMART PATH CONNECTIONS LLC,
Patent Owner.

IPR2022-00815
Patent 7,386,010 B2

Before JAMESON LEE, DAVID C. McKONE, and
NATHAN A. ENGELS, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

Juniper Networks, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–27 (“challenged claims”) of U.S. Patent No. 7,386,010 B2 (Ex. 1001, “the ’010 patent”). Paper 1 (“Pet.”). Smart Path Connections, LLC (“Patent Owner”) filed a Preliminary Response.¹ Paper 6 (“Prelim. Resp.”). Petitioner filed an authorized Preliminary Reply. Paper 7. Patent Owner filed an authorized Preliminary Sur-Reply. Paper 8.

We have authority to determine whether to institute an *inter partes* review, under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018); *see also* 37 C.F.R. § 42.4(a) (2021) (“The Board institutes the trial on behalf of the Director.”). The “reasonable likelihood” standard is “a higher standard than mere notice pleading,” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one challenged

¹ The Preliminary Response relies on a Declaration of Robert Akl, D.Sc. (Ex. 2001).

claim. Accordingly, we do not institute an *inter partes* review on any claim of the '010 patent on any asserted ground of unpatentability.

B. Real Parties in Interest

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

C. Related Proceedings

Patent Owner identifies four *inter partes* review proceedings involving related patents: (1) IPR2021-01170 (U.S. Patent No. 7,463,580 B2 (review not instituted)); (2) IPR2021-01356 (U.S. Patent No. 7,697,525 B2 (review instituted)); (3) IPR2021-01551 (U.S. Patent No. 7,551,599 B2 (review not instituted)); and (4) IPR2022-00240 (U.S. Patent No. 7,961,755 B2 (review instituted)). Paper 4, 1. Petitioner has identified IPR2021-01170, IPR2021-01356, and IPR2022-00240 as related. Pet. ix.

Petitioner identifies two civil actions, both now terminated, in which the Patent Owner asserted the '010 patent: (1) *Smart Path Connections, LLC v. Juniper Networks, Inc.*, No. 6:21-cv-00328-ADA (W.D. Tex.); and *Smart Path Connections, LLC v. Adtran, Inc.*, No. 6:21-cv-00326-ADA (W.D. Tex.). Pet. ix.

D. The '010 Patent (Ex. 1001)

The '010 patent is directed to an apparatus and method for data communication. Ex. 1001, 2:44–46, 4:4–6. A Layer 2 network is provided to make connections between endpoints running heterogeneous Layer 2 protocols. *Id.* at 2:3–5.² The endpoints are connected to the Layer 2

² The '010 patent states: “(The term ‘Layer 2’ as used herein refers to the second layer in the protocol stack defined by the well-known Open Systems

network through edge devices which communicate with each other by use of a common packet-oriented Layer 2 communication protocol, such as Ethernet. *Id.* at 2:5–9. Each edge device has one or more native network interfaces which communicate with the endpoints connected thereto by use of disparate native Layer 2 protocols for which the endpoints are configured, such as Ethernet. *Id.* at 2:9–13. Each edge device includes a protocol converter which performs conversion functions required for interworking between the native protocols of the endpoints and the common packet-oriented protocol of the network. *Id.* at 2:14–18.

Figure 1 of the '010 patent is reproduced below:

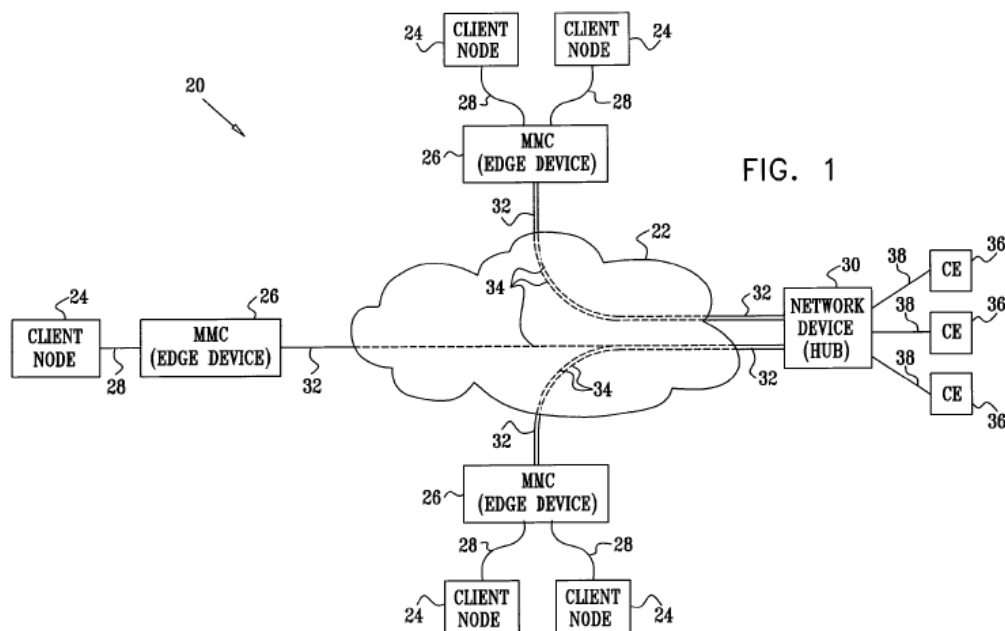


Figure 1 is a block diagram that illustrates a communication system according to the '010 patent. *Id.* at 4:27–29.

System 20 enables multiple endpoints, such as client nodes 24, running heterogeneous Layer 2 protocols, to communicate over a common

Interface (OSI) model, also known as the logical link, data link, or media access control (MAC) layer.).” Ex. 1001, 1:14–18.

Layer 2 network 22. *Id.* at 4:42–45. System 20 may operate as a Layer 2 virtual private network (VPN) to serve client devices in multiple different locations and facilities of an enterprise. *Id.* at 4:45–47. Network 22 is typically an Ethernet network. *Id.* at 4:47–48.

Client nodes 24 communicate with network 22 through edge devices 26 connected to the client nodes through attachment circuits 28. *Id.* at 4:54–56. Attachment circuits 28 typically comprise Layer 2 communication links, which may be of different types, including packet links, synchronous Time Domain Multiplexed (TDM) links such as SONET links, and serial links such as V.35, RS232 or High-Speed Serial Interface (HSSI) links. *Id.* at 4:55–61. Client nodes 24 communicate with edge devices 26 through attachment circuits 28 using different native protocols such as SONET, Frame Relay, ATM, Ethernet, Cisco HDLC and PPP. *Id.* at 4:61–64. Edge devices 26 perform multiprotocol media conversion (MMC) functions “to interwork between the native protocols of circuits 28 and the Ethernet protocol used in network 22.” *Id.* at 4:64–67.

Edge devices 26 are connected through ports 32 and links 34 through network 22 to a network device 30 with a hub interface. *Id.* at 5:1–3. Network device 30 is labeled as “(HUB).” *Id.*, Fig. 1. Although only one port 32 is shown in Figure 1 for each edge device, the ’010 patent states: “Typically, each circuit 28 served by one of edge devices 26 is mapped to a different port 32 or to a different Virtual Local Area Network (VLAN) on [HUB] device 30.” *Id.* at 5:14–16. The ’010 patent describes that such a mapping enables HUB device 30 “to serve each client node 24 as though it were physically connected to one of the hub ports.” *Id.* at 5:16–19. “As a result, client nodes 24 are able to communicate transparently . . . with other

client nodes as though they were directly connected through a conventional Layer 2 link, operating in accordance with the native protocol of the client node.” *Id.* at 5:19–23.

Figure 2 of the ’010 patent is reproduced below:

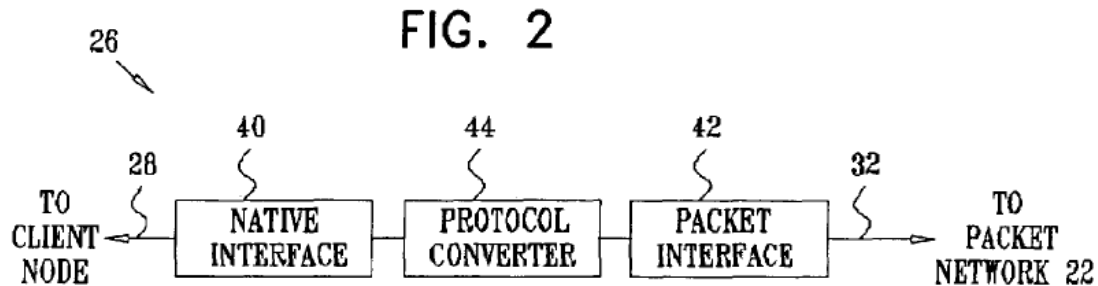


Figure 2 shows a block diagram of the components in an edge device. Ex. 1001, 4:30–32. Native interface 40 couples to attachment circuit 28 which connects to a client node, and native interface may comprise a TDM interface, a serial interface, or HSSI-type interface. *Id.* at 54:29–32. Packet interface 42, typically an Ethernet interface, connects to network 22. *Id.* at 4:32–33. Protocol converter 44 performs (1) “Converting Layer 2 frames received by native interface 40 using the native protocol of circuit 28 to Ethernet frames for transmission over network 22”; and “Converting Ethernet frames received by packet interface 42 to Layer 2 frames in accordance with the native protocol of circuit 28.” *Id.* at 4:38–45.

E. Illustrative Claims

Claims 1 and 14 are representative and reproduced below:³

1. [1.Pre] Apparatus for data communications, comprising:

³ The preamble caption and element captions are added and used by Petitioner to reference the preamble and claim elements. *See* Pet. iii–viii. We use the same captions here for ease of reference, understanding, and consistency.

- [1.1] a hub, comprising a plurality of ports, which are configured to receive and transmit data frames in accordance with a packet-oriented Layer 2 communication protocol; and
- [1.2] a plurality of edge devices, each such edge device comprising:
 - [1.3] at least one network port for communicating with the ports of the hub via a network in accordance with the packet-oriented Layer 2 communication protocol;
 - [1.4] one or more native interfaces, for communicating with client nodes in accordance with respective native Layer 2 protocols, at least one of which is different from the packet-oriented Layer 2 communication protocol; and
 - [1.5] a protocol converter, which is configured to convert the data frames received on the one or more native interfaces from at least a first format specified by the native Layer 2 protocols to a second format specified by the packet-oriented Layer 2 communication protocol, so as to transmit the data frames in the second format via the at least one network port, and to convert the data frames received on the at least one network port from the second format to at least the first format, so as to transmit the data frames in at least the first format via the one or more native interfaces,
- [1.6] such that the edge devices are configured to direct the data frames received from two or more of the native interfaces to one of the ports of the hub, and to map the two or more of the native interfaces to different, respective Virtual Local Area Networks (VLANs) on the network, such that the at least one network port comprises an Ethernet port, and such that the one or more native interfaces comprise at least one of a time domain multiplexed (TDM) interface and a serial interface.

Ex. 1001, 12:40–13:6.

14. [14.Pre] A method for data communications, comprising:
- [14.1] linking a plurality of edge devices to communicate with a hub via a network in accordance with a packet-oriented Layer 2 communication protocol;
 - [14.2] at each of the plurality of edge devices, receiving incoming data frames from client nodes in accordance with respective native Layer 2 protocols, at least one of which is different from the packet-oriented Layer 2 communication protocol;
 - [14.3] converting the received incoming data frames at each of the edge devices from at least a first format specified by the native Layer 2 protocols to a second format specified by the packet-oriented Layer 2 communication protocol; and
 - [14.4] transmitting the incoming data frames in the second format via the network to the hub,
 - [14.5] such that transmitting the incoming data frames comprises transmitting the incoming data frames received from two or more of the client nodes to one of the ports of the hub, and such that converting the received incoming data frames comprises associating the two or more of the client nodes with different, respective Virtual Local Area Networks (VLANs) on the network, such that receiving the [incoming data] frames comprises receiving the incoming frames through at least one of a time domain multiplexed (TDM) interface and a serial interface, and such that transmitting the incoming data frames comprises transmitting the incoming data frames through an Ethernet port.

Ex. 1001, 14:44–15:5.

Claim 22 is an independent method claim. It reads the same as claim 14, except that the “such that” clause that is limitation [14.5] is

replaced with the following two “such that” clauses that are limitation [22.5] and limitation [22.6]:

- [22.5] such that converting the received incoming data frames comprises terminating the native Layer 2 protocols of the incoming data frames, and determining a destination media access control (MAC) address on the network for the incoming data frames, and inserting the destination MAC address in a header of the data frames in the second format for transmission over the network and
- [22.6] such that determining the destination MAC address comprises determining that a given data frame in the first format is a broadcast frame, and setting the destination MAC address of the given data frame in the second format to a broadcast MAC address specified by the packet-oriented Layer 2 communication protocol.

Ex. 1001, 16:11–24.

Claim 8 is an independent apparatus claim. It reads the same as claim 1, except that the “such that” clause that is limitation [1.6] is replaced with the following two “such that” clauses that are limitation [8.6] and limitation [8.7]:

- [8.6] such that the protocol converter is configured to terminate the native Layer 2 protocols of the data frames received on the one or more native interfaces and to determine a destination media access control (MAC) address on the network of the data frames received from the client nodes, and to insert the destination MAC address in a header of the data frames in the second format for transmission over the network, and
- [8.7] such that the protocol converter is configured to determine that a given data frame in the first format is a broadcast frame, and to set the destination MAC address of the given data frame in the second format to a broadcast MAC address specified by the packet-oriented Layer 2 communication protocol.

Ex. 1001, 14:1–14.

Thus, claims 1 and 14 are apparatus and method counterparts of each other, with functions recited as performed by structural components (claim 1) or recited as method steps (claim 14). The same is true for claims 8 and 22, albeit the features of claims 1 and 14 are slightly different from the features of claims 8 and 22.

F. Evidence Relied on by Petitioner

Petitioner relies on the following evidence:⁴

References		Date	Exhibit
PacketStar	<i>PacketStar® PSAX 1250 Multiservice Media Gateway User Guide</i> , Issue 1, August 2001, System Software Release 7.0, Lucent Technologies	Published 2001	Ex. 1005
Taubert	US Pat. 6,721,353 B1	Issued April 13, 2004, filed June 21, 2000	Ex. 1006

Petitioner also relies on the Declaration of Tal Lavian, Ph.D. (Ex. 1003).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–27 of the '010 patent based on the following grounds:

⁴ The '010 patent issued from Application 10/461,807, filed June 13, 2003. Ex. 1001, codes (21), (22).

Claims Challenged	35 U.S.C. § ⁵	Reference(s)/Basis
1–7, 9–21, 23–27	103	PacketStar
4–8, 18–24	103	PacketStar, Taubert

II. ANALYSIS

A. *Discretionary Denial under 35 U.S.C. § 325(d)*

Patent Owner asserts that the Board should discretionarily deny the Petition under 35 U.S.C. § 325(d), because “the Petition is based on art that is either the same or substantially the same as the art that was previously presented to the Office.” Prelim. Resp. 20. We need not, however, reach this issue under 35 U.S.C. § 325(d) because, for reasons discussed below, Petitioner has not shown a reasonable likelihood that it would prevail in establishing the unpatentability of any challenged claim.

B. *Level of Ordinary Skill in the Art*

Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a closely related field, and three to four years of experience in the design and development of telecommunication networks, systems, equipment, and components.” Pet. 6.

Petitioner also presents an alternative articulation, that such a person “would have a Master’s degree or similar post-graduate work in electrical engineering, computer engineering, computer science, or a closely related

⁵ The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Based on the record before us, the ’010 patent has an effective filing date prior to the effective date of the applicable AIA amendments (March 16, 2013). Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

field, and *fewer years* of design and development experience.” *Id.* (emphasis added).

We focus on the primary articulation of Petitioner, because the alternative articulation is vague by using the term “fewer” which indicates no lower bound. The primary articulation is supported by the testimony of Dr. Lavian (Ex. 1003 ¶ 67), and appears consistent with the content of the applied prior art references. *Cf. Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (the applied prior art may reflect an appropriate level of skill).

Patent Owner has not disputed Petitioner’s assertion of the level of ordinary skill in the art. Nor has Patent Owner proposed its own statement of the level of ordinary skill in the art. Prelim. Resp. 16.

We adopt Petitioner’s primary articulation of the level of ordinary skill in the art, i.e., that a person of ordinary skill in the art at the time of the alleged invention “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a closely related field, and three to four years of experience in the design and development of telecommunication networks, systems, equipment, and components.” *See* Pet. 6.

C. Claim Construction

We use the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). The

claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) is applicable.

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.

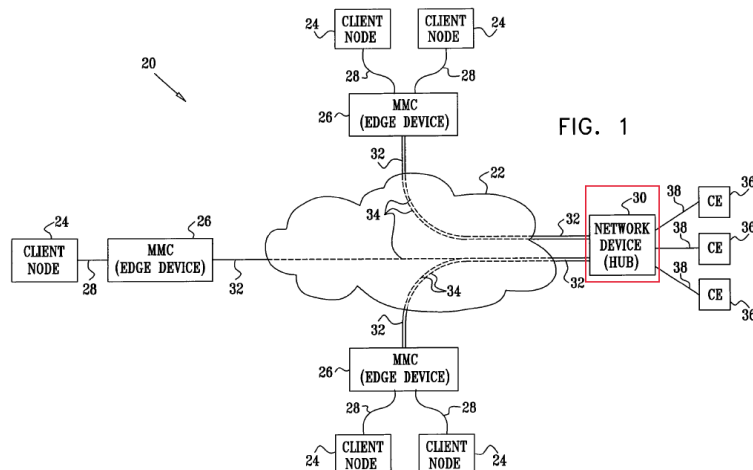
The specification may reveal a special definition given to a claim term by the patentee, or the specification or prosecution history may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *Id.* at 1316. If an inventor acts as his or her own lexicographer, the definition must 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). The disavowal, if any, can be effectuated by language in the specification or the prosecution history. *Poly-America, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016).

Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner has not proposed a specific construction for any claim term, and states that no express construction is necessary. Pet. 7. Further, Petitioner states that it interprets claim terms according to their ordinary and customary meaning. *Id.* Patent Owner also has not proposed a specific construction for any claim term and, like Petitioner, asserts that the ordinary and customary meaning as understood by one of ordinary skill in the art should be applied. Prelim. Resp. 16.

“hub”

Each independent claim 1, 8, 14, and 22 recites a “hub.” Ex. 1001, 12:41, 13:42, 14:46, 15:53. The ’010 patent provides no definition for “hub,” and neither party asserts a construction for “hub.” Figure 1 of the ’010 patent is reproduced below, with color annotation added:



Above-reproduced Figure 1 is a block diagram of a communication system according to an embodiment of the ’010 patent, with a red rectangular box added for emphasis around network device 30, which is labeled as “HUB.” Ex. 1001, 4:27–29. As discussed above, edge devices 26 communicate with each other via network 32 and through the “HUB.” Ex. 1001, 5:1–3. The Specification further states that the HUB device 30

serves each client node 24 (local to each edge device) as though it were physically connected to one of the hub ports. *Id.* at 5:16–19. We observe nothing in the Specification to suggest that HUB device 30 is an originator of communication. Rather, it serves to facilitate communication between devices connected to it through a network.

Consistent with applying the term’s plain and ordinary meaning in light of the Specification, we construe “hub” as a *circuit connecting components coupled to it through a network for effecting communication therebetween*.

No other express claim construction is necessary for this decision on whether to institute *inter partes* review.

D. Alleged Obviousness of Claims 1–7, 9–21, 23–27 over PacketStar

1. Principles of Obviousness

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *See 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) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the

fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). “[T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Kahn*, 441 F.3d at 988.

2. *The Status of PacketStar as Printed Publication*

Patent Owner asserts that “Petitioner has failed to provide any evidence that PacketStar was actually available to the public before the critical date.” Prelim. Resp. 17. Patent Owner further asserts the following:

There is no presumption for finding a reference to be a printed publication, including when determining institution for *inter partes* review. *Hulu v. Soundview Innovations*, IPR2018-01039, Paper 29 at 16 (PTAB Dec. 20, 2019) (precedential). “Whether a reference qualifies as a ‘printed publication’ is a legal conclusion based on underlying factual findings.” *Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018).

Id. at 17–18. However, we need not reach the issue of whether PacketStar is a printed publication with sufficient public accessibility to constitute prior art, because, for reasons discussed below, even assuming PacketStar had sufficient public accessibility as prior art for consideration at the institution stage, Petitioner has not shown a reasonable likelihood that it would prevail in establishing the unpatentability of any challenged claim.

3. *Overview of PacketStar*

PacketStar is a user guide published by Lucent Technologies for the PSAX 1250 Multiservice Media Gateway system. Ex. 1005, 35. Dr. Lavian testified that “[a]s of 2001, Lucent Technologies was an established publisher that was well known to those interested in the fields of networking devices.” Ex. 1003 ¶ 57.

Regarding its purpose, PacketStar states:

The PacketStar® PSAX 1250 Multiservice Media Gateway User Guide provides information about the following:

- Understanding the PSAX 1250 Multiservice Media Gateway system functions and features
- Configuring basic system parameters and managing the PSAX 1250 Multiservice Media Gateway system

Ex. 1005, 35. PacketStar also states: “The information in this guide is intended for users who will configure and maintain the basic PSAX 1250 Multiservice Media Gateway system.” *Id.*

PacketStar describes that the PSAX 1250 Multiservice Media Gateway system “provides high-capacity, universal connectivity over an asynchronous transfer mode (ATM) wide area network (WAN),” and also “provides highly reliable network access for TDM voice, frame relay, and ATM data applications.” *Id.* at 43.

Figure 3-1 of PacketStar is reproduced below:

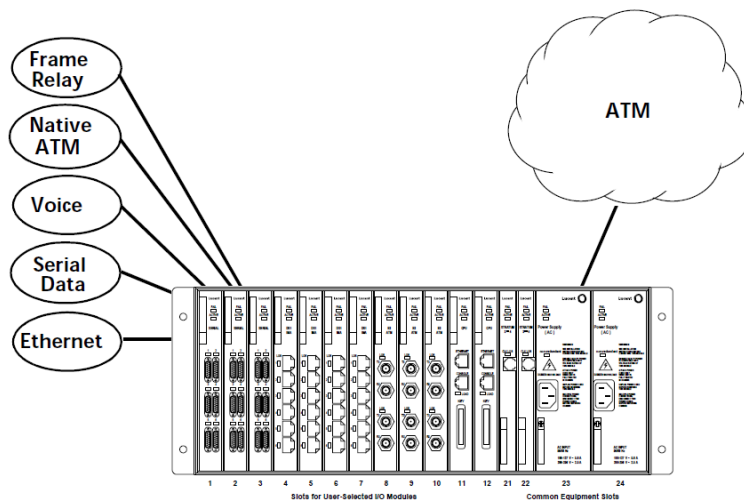


Figure 3-1. Interface Capabilities of the PSAX 1250 Multiservice Media Gateway System

Figure 3-1 is a block diagram of a PacketStar® PSAX 1250 Multiservice Gateway system connected to a variety of user interfaces to support voice, video, and data application. *Id.* at 52. Among the

interfaces illustrated are Frame Relay, Native ATM, Voice, Serial Data, Ethernet, and ATM. *Id.* PacketStar explains: “While voice, video, and data traffic have traditionally been carried on separate overlay networks, the PacketStar® PSAX Multiservice Media Gateway systems aggregate all traffic types into a common network infrastructure.” *Id.*

4. *Independent Claims 1 and 14*

Claim 1 recites in its preamble: “Apparatus for data communications.” Ex. 1001, 12:40. Claim 14 recites in its preamble” “A method for data communications.” *Id.* at 14:44. Petitioner asserts that PacketStar describes a multiservice media gateway system with user interfaces to support voice, video, and data applications that aggregates all traffic types into a common network infrastructure. Pet. 10 (citing Ex. 1005, 52; Ex. 1003 ¶¶ 76, 191; Fig. 3-1). Petitioner’s assertion is supported by the cited evidence and not disputed by Patent Owner. We are persuaded that PacketStar discloses the preamble recitations of claims 1 and 14.⁶

Claim 1 recites limitation [1.1]: “a hub, comprising a plurality of ports, which are configured to receive and transmit data frames in accordance with a packet-oriented Layer 2 communication protocol.” Ex. 1001, 12:41–44.

Petitioner asserts that PacketStar describes that its Multiservice Media Gateway device can be configured as either a client or a server. Pet. 11 (citing Ex. 1005, 163). Petitioner further asserts:

⁶ We need not decide whether the preamble recitations of claims 1 and 14 are limiting.

When configured as a server as shown below in Figure 3-4, PacketStar's device operates as a hub (i.e., "PacketStar Hub") including a plurality of ports capable of "network-wide rerouting regardless of the number of connections."

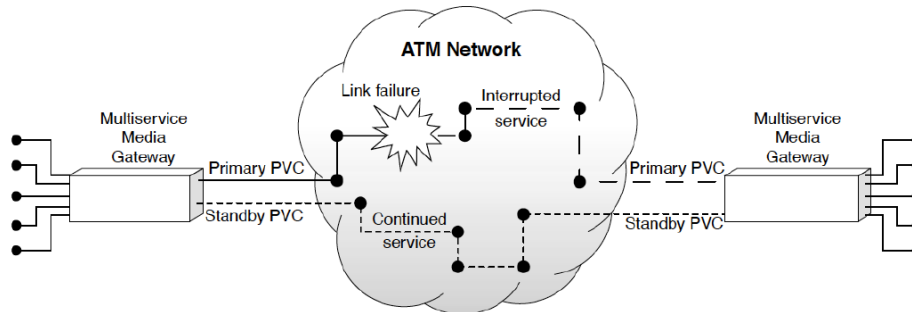


Figure 3-4. Automatic Rerouting With Dual-Homed PVCs

[Figure 3-4 is a block diagram illustrating the connection between a pair of PSAX 1250 Multiservice Media Gateway systems acting as the originating node and terminating node (Ex. 1005, 69)]

Pet. 12. Petitioner also asserts that PacketStar's description of such a "hub" is consistent with how the '010 patent describes a hub. *Id.* at 13 (citing Ex. 1003 ¶ 83). Petitioner refers to Figure 1 of the '010 patent and states: "For example, as shown below in Figure 1, the patent discloses that a 'hub' network device 30 is a device connecting edge devices 26." *Id.*

Figure 1 of the '010 patent is reproduced below:

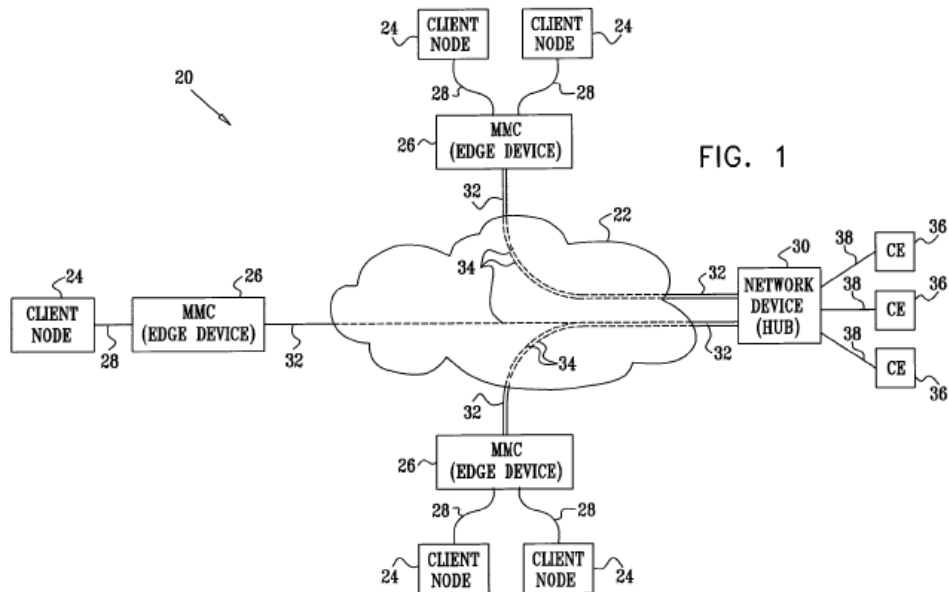


Figure 1 is a block diagram of a communication system according to an embodiment of the '010 patent. Ex. 1001, 4:27–29.

For several reasons, Petitioner's assertion that when configured as a server as shown in Figure 3-4, PacketStar's Multiservice Media Gateway device, i.e., PSAX 1250, is a hub as recited in limitation [1.1], and acts as the disclosed hub in the '010 patent, is unpersuasive.

First, "hub," as we have construed above means a *circuit connecting components coupled to it through a network for effecting communication therebetween*. As Petitioner has expressly recognized, Figure 1 of the '010 patent shows a hub network device 30 that connects edge devices 26 to each other through network 22. Pet. 13 (citing Ex. 1001, Fig. 1). As PacketStar itself describes, and as Patent Owner notes, the two Multiservice Media Gateways shown in PacketStar's Figure 3-4 are originating and terminating nodes and do not connect two devices coupled to them through the ATM network to complete communication therebetween. Ex. 1005, 69; Prelim. Resp., 35–36.

Patent Owner correctly states that Figure 3-4 depicts functionality relating to alternate routing between the two gateways themselves in the event of a failure in one route through the network. *Id.* at 36 (citing Ex. 1005, 68–70). Patent Owner also correctly states that Figure 3-4 of PacketStar shows a pair of gateway devices acting as an originating node and a terminating node communicating with each other directly via an ATM network without a hub. *Id.* at 41. Contrary to Petitioner’s assertion, the media gateway devices shown in Figure 3-4 of PacketStar are unlike network device 30 (“HUB”) in Figure 1 of the ’010 patent and do not constitute a “hub,” whether or not it is configured as a server or client.

Second, Petitioner cites to the same two Multiservice Media Gateway devices in PacketStar’s Figure 3-4 as the plurality of edge devices recited in limitation [1.2]. Pet. 17–18. That is problematic for Petitioner, because as required by limitation [1.3], each edge device must connect to the hub through a network and communicate with the hub through a packet-oriented Layer 2 communication protocol. That means the hub and the edge devices must be different structures and cannot be met by the same device.

Third, interspersed among Petitioner’s arguments are disjointed assertions that are not integrated into the arguments in a meaningful manner. As such, they do not help in strengthening Petitioner’s argument. Rather, they cause uncertainty and confusion. For example, Petitioner asserts:

PacketStar further describes configuring its Multiservice Media Gateway device as a “core switch” or hub device:

A Broadband Switching System (BSS) which is located in the core of the network. Conceptually equivalent to a Tandem Office in the voice world, a core switch serves to interconnect “edge switches,” which provide user access to the

broadband network much as Central Offices do in the circuit switched voice world.

Pet. 11 (citing Ex. 1005, 515). The above-quoted text from PacketStar is taken from a Glossary at the end of PacketStar. Ex. 1005, 515. It is simply the definition for “core switch.” We do not find the term “core switch” in PacketStar except in its Glossary. Patent Owner appears correct in noting that the term “core switch” is mentioned only six times in PacketStar, all of which are within the Glossary and not in the context of describing a Multiservice Media Gateway device. Prelim. Resp. 40. It is not adequately explained how this “core switch” fits into any embodiment described in PacketStar including the Figure 3-4 embodiment Petitioner has relied on as discussed above. Nor is it adequately explained how this “core switch” relates to what Petitioner has identified as the “hub” in Figure 3-4.

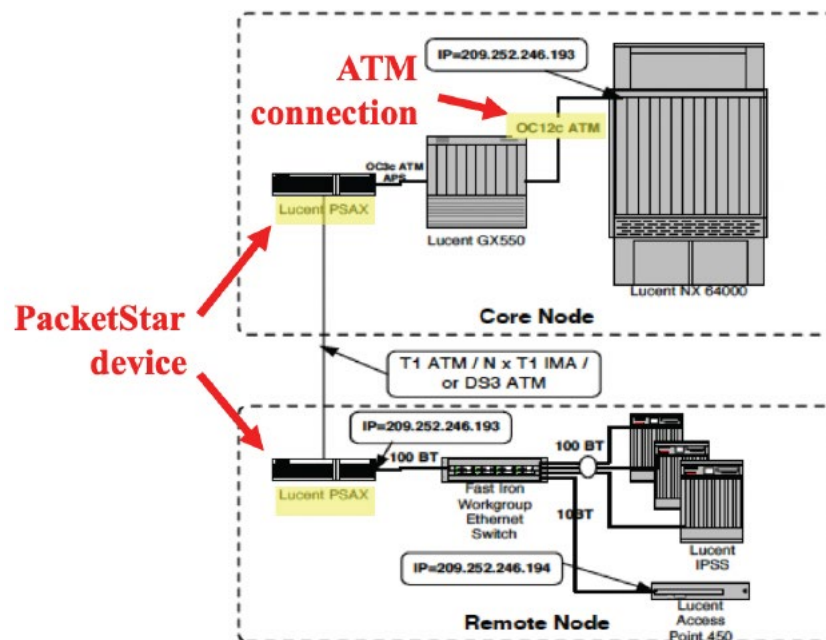
It also does not appear from Figure 3-4 that either one of the two Multiservice Media Gateway devices in Figure 3-4, which Petitioner has identified as the hub, can be this “core switch.” Further, the above-quoted text does not indicate that the “core switch” is implemented by a Multiservice Media Gateway device as Petitioner asserts. Nor does the above-quoted text refer to a Multiservice Media Gateway device as a hub as Petitioner suggests. In summary, Petitioner’s citation to a definition in the Glossary for “core switch” is too vague and lacks cohesion with Petitioner’s other assertions to help Petitioner with respect to limitation [1.1].

As another example, in accounting for separate limitation [1.3], Petitioner asserts:

Further, PacketStar describes that the PacketStar hub, or core, device communicates via a network with the PacketStar edge devices:

A single PSAX 4500 system at the edge of the carrier network can transition traffic from a large number of network customers over high speed OC-12c/STM-4c trunks into the ATM core, managing the whole quickly and efficiently. [citing Ex. 1005, 38]

And as shown below, and described and annotated by Dr. Lavian, PacketStar's Figure [3-3] shows the connection and communication between a PacketStar Hub (core) device and an PacketStar Edge (remote) device over a network via at least an ATM packet-oriented Layer 2 communication protocol. [citing Ex. 1003 ¶ 97]



[With color annotations added by Petitioner, the Figure illustrates “IP Forwarding on the Ethernet Module.” Ex. 1005, 60]

Pet. 21–22.

The assertion is vague and not reasonably connected to Petitioner’s accounting of a “hub” in limitation [1.1]. The “ATM core” is not what Petitioner identified as the “hub” in addressing limitation [1.1]. Nor is the illustrated “core node.” It is also unclear what, through its assertion here,

Petitioner identifies as the hub, e.g., ATM core, core node, or something else. Further, the quoted text of PacketStar and Figure 3-3 of PacketStar indicate that both “ATM core” and “core node” mean something more than a Multiservice Media Gateway device. It appears that Petitioner changes, midstream, what it previously identified as the hub, i.e., the Media Gateway devices in PacketStar’s Figure 3-4. The assertion here lacks coherency and consistency in view of Petitioner’s presentation of “hub” in the context of limitation [1.1]. The assertion is vague and confusing. We do not find it persuasive.

As a further example, in accounting for separate limitation [1.3], Petitioner asserts:

Further, as shown below, PacketStar’s Figures 4-10 and 4-11 describes a system connecting an “Ethernet Hub” to multiple edge devices via a Layer 2 packet oriented protocol, such as the Ethernet protocol.

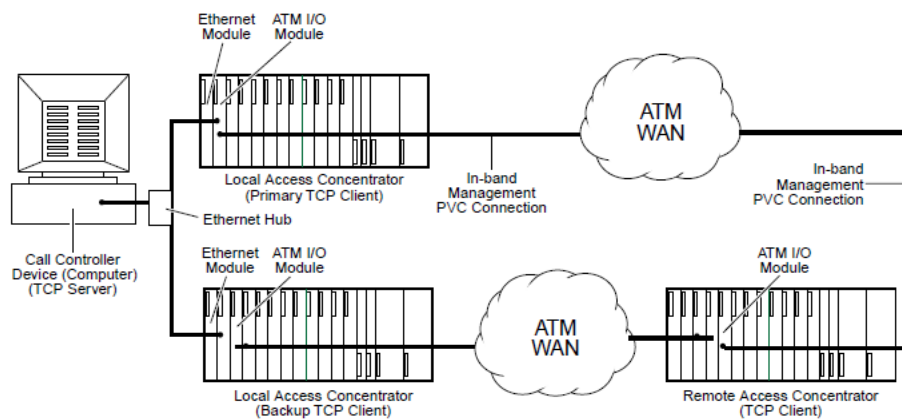


Figure 4-10. *PacketStar*® PSAX System as a TCP Client

[Figure 4-10 is a block diagram of one system configuration according to PacketStar (Ex. 1005, 164)]

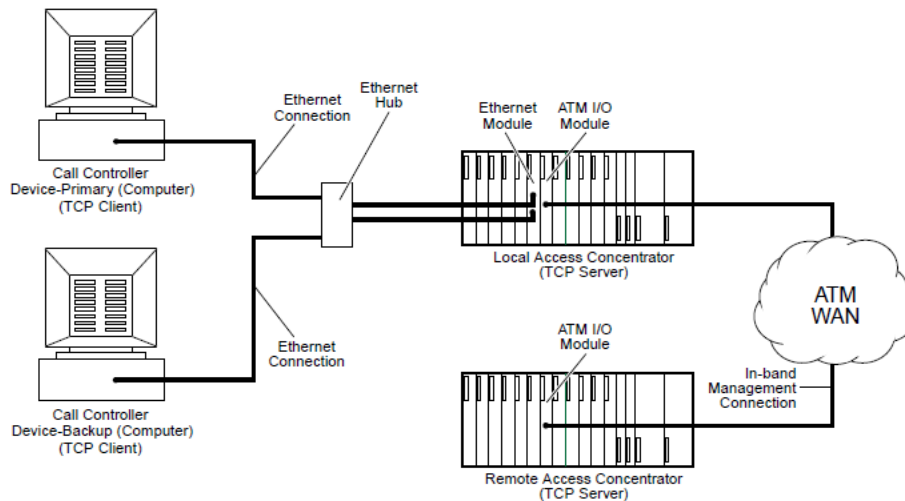


Figure 4-11. *PacketStar*® PSAX System as a TCP Server

[Figure 4-11 is a block diagram of another system configuration according to *PacketStar* (Ex. 1005, 164)]

Pet. 22–23. But the assertion is not reasonably connected to Petitioner’s accounting of a “hub” in limitation [1.1].

The Ethernet Hub is not the hub previously identified by Petitioner, i.e., the Multiservice Media Gateway devices in Figure 3-4. Nor is the Ethernet the network previously identified by Petitioner as connecting to the hub, i.e., the ATM network shown in Figure 3-4. It is clear through these figures that the ATM network does not connect edge devices to each other through the Ethernet Hub. Again, it appears that Petitioner changes, midstream, what it previously identified as the hub, and what it previously identified as the network. The assertion here lacks coherency and consistency in view of Petitioner’s presentation of “hub” in the context of

limitation [1.1]. The assertion is vague and confusing. We do not find it persuasive.⁷

Finally, Petitioner asserts:

[I]n its infringement contentions, Patent Owner relies on the same features found in similar types of network devices, including the exemplary presence of a plurality of port interfaces supporting ATM, Frame Relay, and Ethernet protocols on a network device, as shown below. This confirms that a POSITA would have found PacketStar discloses this claim element [1.1].



Access-Agnostic with Leading Densities

[the figure above is a picture of a Juniper M Series router]

With its broad interface portfolio, a single M Series router can provide a single point of edge aggregation for thousands of customers over any access type—including ATM, Frame Relay, Ethernet and time-division multiplexing (TDM)—and at any speed from DS0 up to (OC-192/STM-64 and 10 Gigabit Ethernet). Leveraging dense

⁷ Further undermining Petitioner’s assertion is Patent Owner’s assertion, which we find to have a rational basis, that “a POSITA would understand that the information shared between the call controller(s) and the PSAX Gateway(s) via the “Ethernet Hub” when the connection APIU is used relates to network management tools and signals that manage network devices and monitor network performance, for example, and not data frames as required by claim element [1.1] of the Challenged Claims. Ex. 2001, ¶ 72.” Prelim. Resp. 47 (citing Ex. 2001 ¶ 72).

Ethernet and highly channelized interfaces, the M Series boast leading densities.

Pet. 16–17 (citing Ex. 1003 ¶ 88; Ex. 1009, [4]).

The assertion is vague and not adequately explained with respect to the presence or absence of a hub. It only indicates that an edge device can aggregate a plurality of end units local to that edge device.

Limitation [14.1] recites “linking a plurality of edge devices to communicate with a hub via a network in accordance with a packet-oriented Layer 2 communication protocol.” Ex. 1001, 14:45–47. Petitioner’s accounting for “hub” in limitation [14.1] is essentially the same as its accounting for “hub” in limitation [1.1] as we have discussed above. Pet. 20–23. For essentially the same reasons discussed above, Petitioner has not adequately addressed the requirement for a “hub” in limitation [14.1].

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of either claim 1 or claim 14 over PacketStar.

5. *Dependent Claims 2–7, 9–13, 15–21, and 23–27*

Claims 2–7 and 9–13 each depend, directly or indirectly, from claim 1. Ex. 1001, 13:7–39, 14:15–43. Claims 15–21 and 23–27 each depend, directly or indirectly, from claim 14. *Id.* at 15:6–50, 16:26–54. Each dependent claim incorporates all the limitations of the claim on which it depends. The deficiency of Petitioner’s accounting for “hub” in the context of claims 1 and 14 equally applies to dependent claims 2–7, 9–13, 15–21, and 23–27.

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of any of claims 2–7, 9–13, 15–21, and 23–27 over PacketStar.

*E. Alleged Obviousness of Claims 4–8 and 18–24
over PacketStar and Taubert*

1. Overview of Taubert

Taubert discloses a method for improving network compatibility. Ex. 1006, code (57). The method includes receiving a first-protocol data-link layer packet having a first protocol address and encapsulating a network-layer packet bound for a network layer entity native to a second-protocol data-link layer environment. *Id.* The method also includes directly translating the first-protocol data-link layer packet to at least one second-protocol data-link layer packet encapsulating at least a part of the network layer packet. *Id.* The method further includes transmitting the at least one second-protocol data-link layer packet into the second-protocol data-link layer environment. *Id.*

Taubert refers to one data-link environment as type B and another data-link environment as type C, and describes as follows:

[F]or each data-link layer type-B packet received into the compatibility device, (1) the data-link layer type-B destination header address (e.g., 1201DLE-B) of the data-link layer type-B entity (e.g., data-link layer entity 1241) internal to Compatibility Device 200 is replaced with the data-link layer type-C packet destination address (e.g., Router1DLE-C) of the “Companion” data-link layer Type-C entity (e.g., data-link layer type-C entity 2121R) external to Compatibility Device 200, and (2) the data-link layer type-B source header address (e.g., 120DLE-B) of the data-link layer type-B entity (e.g., data link layer entity 124) external to compatibility device 200 is replaced with the data-link layer type-C packet source address (e.g., 2121DLE-C) of the “Companion” data-link layer type-C entity (e.g., data-link layer entity 2121) internal to Compatibility Device 200.

Ex. 1006, 5:40–54.

2. *Independent Claims 8 and 22*

With respect to requiring a “hub,” limitation [8.1] reads the same as limitation [1.1]. Ex. 1001, 12:41–44, 13:41–44. With respect to requiring a “hub,” limitation [22.1] reads the same as limitation [14.1]. *Id.* at Ex. 1001, 14:45–47, 15:52–54. Petitioner’s accounting of the claimed “hub” in claims 8 and 22 is essentially the same as its accounting for a “hub” in claim 1. Pet. 80, 83. For the same reasons discussed above in the alleged obviousness of claims 1 and 14 over PacketStar, Petitioner has not adequately accounted for the claimed “hub” in claims 8 and 22. Taubert, as applied by Petitioner, does not relate to or cure that deficiency.

Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 8 and 22 over PacketStar and Taubert.

3. *Dependent Claims 4–7 and 18–21*

Claims 4–7 each depend, directly or indirectly, from claim 1. Ex. 1001, 13:17–39. Claims 18–21 each depend, directly or indirectly, from claim 14. *Id.* at 15:26–50. Each dependent claim incorporates all the limitations of the claim on which it depends. The deficiency of Petitioner’s accounting for “hub” in the context of claims 1 and 14 equally applies to dependent claims 4–7 and 18–21. Taubert, as applied by Petitioner, does not relate to or cure that deficiency.

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of any of claims 4–7 and 18–21 over PacketStar and Taubert.

4. *Dependent Claims 23 and 24*

Claim 23 depends from claim 14, and claim 24 depends from claim 23. Ex. 1001, 16:26–36. Petitioner has not provided any argument and explanation as to why claims 23 and 24 would have been obvious over the

combined teachings of PacketStar and Taubert, aside from its contention, addressed above, that claims 23 and 24 would have been obvious over PacketStar alone. Pet. 58–62.

The deficiency of Petitioner’s accounting for “hub” in claims 1 and 14 equally applies to dependent claims 23 and 24. Taubert, as applied by Petitioner, does not relate to or cure that deficiency. Further, Petitioner has not addressed the additional limitations recited in claims 23 and 24.

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of either claim 23 or claim 24 over PacketStar and Taubert.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has not shown a reasonable likelihood that it would prevail in establishing the unpatentability of any claim.

IV. ORDER

It is

ORDERED that the Petition is *denied*, and no *inter partes* review is instituted.

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Patent 7,386,010 B2

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