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Paper 6
Date: July 19, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZOHO CORPORATION and
ZOHO CORPORATION PVT., LTD.,
Petitioner,

v.

MEETRIX IP, LLC,
Patent Owner.

IPR2023-00371
Patent 8,339,997 B2

Before KARL D. EASTHOM, BRIAN J. McNAMARA, and KARA L. SPONDOWSKI, *Administrative Patent Judges.*

McNAMARA, *Administrative Patent Judge*.

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

I. INTRODUCTION

Zoho Corporation and Zoho Corporation Pvt., Ltd. (collectively, "Petitioner") filed a petition, Paper 1 ("Petition" or "Pet."), to institute an *inter partes* review ("IPR") of claims 1–10 (the "challenged claims")[1] of U.S. Patent No. 8,399,997 B2 (Ex. 1001, "the '997 patent"). 35 U.S.C. § 311. Meetrix IP LLC ("Patent Owner") did not file filed a Preliminary Response. We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition "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."

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). In addition, per Board practice, if the Board institutes trial, it will institute "on all of the challenged claims and on all grounds of unpatentability asserted for each claim." *See* 37 C.F.R. § 42.108(a) (2023).

Having considered the arguments and the associated evidence presented in the Petition, for the reasons described below, we institute *inter partes* review of challenged claims 1–10.

[1] The '997 patent has eighteen claims. The Petition begins by requesting *inter partes* review of claims 1–18 of the '997 patent (Pet. 1) and ends by asserting that Petitioner has demonstrated claims 1–7 and 9–17 of the '689 patent (a different patent) are unpatentable (*id.* at 70). The Petition presents and analyzes specific challenges to claims 1–10 of the '997 patent. *Id.* at 4, 16–70). Petitioner's expert, Dr. Houh, states that he has be asked to provide his opinion concerning challenged claims 1–10 of the '997 patent. Ex. 1003, Houh Decl. ¶ 102. We consider only Petitioner's challenges to claims 1–10 of the '997 patent.

II. REAL PARTIES IN INTEREST

The Petition identifies Zoho Corp. and Zoho Corp. Pvt., Ltd. (collectively, "Petitioner") as its real parties-in-interest. Pet. 2. Patent Owner identifies itself (Meetrix IP, LLC) as its sole real party-in-interest. Paper 3, 2.

III. RELATED MATTERS

The Petition states that the '997 patent is asserted in the following litigation: *Meetrix, LLC v. Zoho Corp.*, No. 6:21-cv-01288 (W.D. Tex.). Pet. 3.

Patent Owner states that it is aware of the following matters that may affect or be affected by a decision in this proceeding:

Meetrix IP, LLC v. Zoho Corp. No. 1:22-cv-00588-LY (W.D. Tex.);

Meetrix IP, LLC v. Verizon Communications, et al., No. 1:22-cv-00758-LY (W.D. Tex);

Zoho Corp, and Zoho Corp. Pvt., Ltd. v. Meetrix IP, LLC, IPR2023-00377;

Zoho Corp. and Zoho Corp. Pvt., Ltd. v. Meetrix IP, LLC, IPR2023-00378;

Zoho Corp. and Zoho Corp. Pvt., Ltd. v. Meetrix IP, LLC, IPR2023-00379;

Zoho Corp. and Zoho Corp. Pvt., Ltd. v. Meetrix IP, LLC, IPR2023-00380;

Zoho Corp. and Zoho Corp. Pvt., Ltd. v. Meetrix IP, LLC, IPR2023-00382.

Paper 3, 2.

IV. THE '997 PATENT

The '997 patent describes a method that allows standard telephone users to audio conference with video conferencing participants over Internet protocol (IP) networks in a private secure environment. Ex. 1001, code (57). Figure 3 of the '997 patent, reproduced below, illustrates a multi-party virtual conference connected over the Internet. *Id.* at 6:4–5.

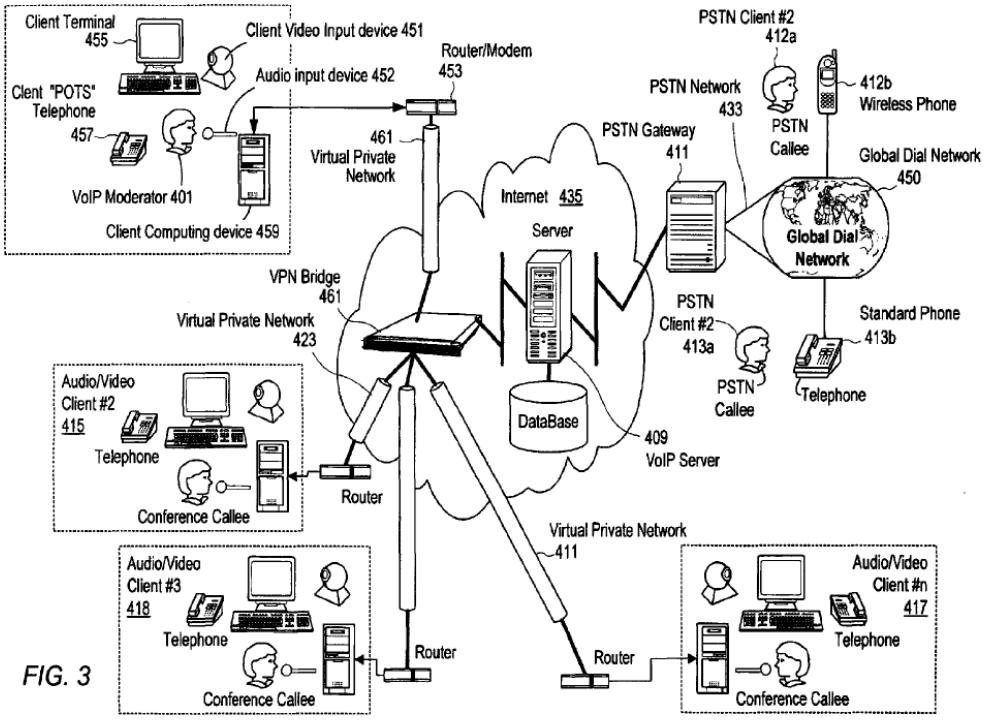


FIG. 3

Figure 3 shows audio-video clients 415, 417, and 418 are Internet based, and telephony clients 412, 413 use standard wireless or wired telephone systems, respectively. *Id.* at 6:4–7. Public switched telephone network (PSTN) client #1, shown at reference designator 412, is connected to wireless cell phone 412b that is in turn connected to global dial network 450 as specified by PSTN 433; remote telephone user client # 2, shown as reference designator 413, is connected to standard telephone handset 413b that is connected to global dial network 450 based on PSTN 433. *Id.* at 6:8–

15. Moderator 401 and Internet-based clients 415, 417, and 418 are connected through routers or modems, preferably in a virtual private network (VPN) configuration 461. *Id.* at 6:16–18.

VPN bridge 407 connects local and remote clients together within a secure private network. *Id.* at 6:18–20. A local connection from VPN bridge 407 to voice over internet protocol (VoIP) server 409 transfers conference audio from any participant on the IP network to any participant on the PSTN. *Id.* at 6:21–23. VoIP server 409 transcodes audio information from VPN 461 to and from PSTN gateway 411, thus bridging the PSTN and VPN together. *Id.* at 6:23–27.

The '997 patent discloses a method in which a first message that includes a group address identifying the participants of a conference is sent to each of a plurality of multicast appliances over the Internet. *Id.* at 4:20–24. A plurality of VPNs (virtual private networks) is established across the Internet between the multicast appliances, allowing one or more participants to join the video conference. *Id.* at 4:26–29. The steps of the method include, a participant contacting the telephone participant; establishing a phone number with a VoIP server; the VoIP server communicating with a gateway to call the telephone participant; and the telephone participant participating in the multi-participant video conference. *Id.* at 4:29–35.

V. ILLUSTRATIVE CLAIM

Claim 1, reproduced below with paragraph designations used in the Petition, is illustrative of the subject matter of the '997 patent.

> [1.P] A method for adding a telephone participant to a multi-participant audio video conference, the method comprising:
> [1.1] sending a first message to each of a plurality of multicast appliances over the Internet, wherein the first message

comprises a group address which identifies a plurality of participants;

[1.2] each of the multicast appliances receiving the first message;

[1.3] establishing a plurality of virtual private networks across the Internet routes between the multicast appliances;

[1.4] enabling at least one of the participants to communicate in the multi-participant video conferences;

[1.5] the telephone participant joining the multi-participant video conference, wherein said joining comprises:

[1.5a] the telephone participant calling into a gateway server;

[1.5b] the telephone participant providing conference ID information;

[1.5c] the gateway server establishing communication with a conferencing server;

[1.5d] authenticating the telephone participant; and

[1.5e] transmitting multicast group information to the gateway server;

[1.6] wherein the gateway server is operable to use the multicast group information to enable the telephone participant to participate in the multi-participant video conference.

Ex. 1001, 10:64–11:23.

VI. ASSERTED GROUNDS

Petitioner asserts that claims 1–10 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 3–7	103[2]	Knappe,[3] Elliott,[4] VPN Textbook,[5] de Moraes[6]
2, 8–10	103	Knappe, Elliott, VPN Textbook, de Moraes, Shepherd[7]

In support of its challenges, Petitioner also relies upon direct testimony in the Declaration of Dr. Henry H. Houh. Ex. 1003 ("Houh Decl.").

VII. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner asserts that a person of ordinary skill in the art ("POSITA" or "ordinarily skilled artisan") "would have had a working knowledge of available audio and video conferencing art," and "a bachelor's degree in electrical engineering, computer science, computer engineering, or an equivalent, and three years of professional experience relating to conferencing systems in packet-based networks." Pet. 10 (citing Ex. 1003, Houh Decl. ¶ 27). Petitioner also states that "[s]omeone with less technical education but more experience, or more technical education but less experience could also have met this standard." *Id.*

[2] *See* The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103, and 112. Because the application of the '997 patent was filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102, 103, and 112 apply.
[3] U.S. Patent No. 7,180,997 (Ex. 1006)
[4] U.S. Patent No. 6,690,654 (Ex. 1007)
[5] Guichard *et al.*, "MPLS and VPN Architectures," publ. 2000 (Ex. 1010)
[6] de Moraes *et al.*, "The Internet Multicast from ITS: How it was Done and Implications for the Future," publ. 1995 (Ex. 1022)
[7] U.S. Patent No. 7,281,058 (Ex. 1034)

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

As Petitioner's description of a person of ordinary skill appears commensurate with the subject matter of the '997 patent and the references, we apply Petitioner's description of an ordinarily skilled artisan in this Decision.

VIII. CLAIM CONSTRUCTION

We interpret claim terms using "the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). In this context, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317.

Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We construe only those claim terms that require analysis to determine whether to institute *inter partes* review. *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)).

Neither party has proposed a special definition or explicit construction of any claim term. As we do not perceive a need to construe any term, we apply the plain and ordinary meaning to the claim language.

IX. ANALYSIS

A. Legal Standards

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

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 ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir.

2006) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

An obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Petitioner cannot satisfy its burden of proving obviousness by employing "mere conclusory statements." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *In re NuVasive*, 842 F.3d 1376, 1382 (Fed. Cir. 2016).

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the "interrelated teachings of multiple patents"; "any need or problem known in the field of endeavor at the time of invention and addressed by the patent"; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–21 (2007)).

In determining whether a claim is obvious in light of the prior art, when in evidence, we consider any relevant objective evidence of non-obviousness. *See Graham*, 383 U.S. at 17. Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted,

including objective evidence of non-obviousness, may lead to a conclusion that the challenged claims would not have been obvious to one of ordinary skill. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). At this stage of the proceeding Patent Owner does not present evidence of such objective considerations

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish a reasonable likelihood of success at trial.

B. Knappe (Ex. 1006)

Figure 1 of Knappe, reproduced below, shows a multi-party distributed communication system for transmitting audio, voice, data and other suitable real-time and/or non-real-time traffic. Ex. 1006, 3:24–29.

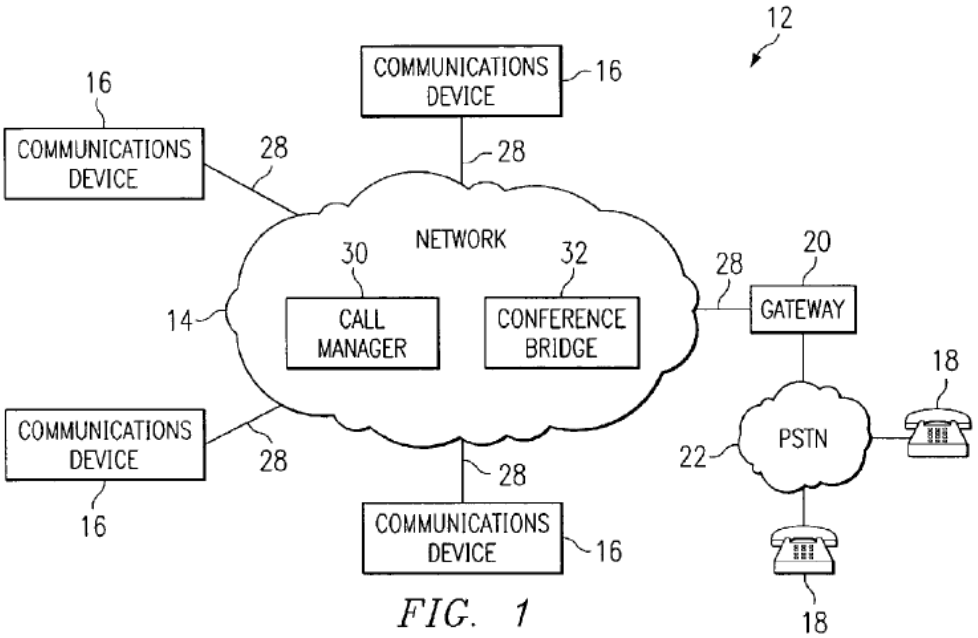


FIG. 1

In communication system 12 of Knappe's Figure 1, network 14 connects a plurality of communication devices 16 (e.g., digital phones, personal computers,) to each other and to standard analog telephones 18 through gateway 20 and PSTN 22 through any suitable wireline or wireless

links 28 (e.g., twisted pair, cable, fiber optic, infrared, or microwave links). *Id.* at 3:41–49, 3:62–65. Network 14 is a suitable packet switched network (e.g., the Internet, a wide area network, a local area network) using appropriate protocols and formats. *Id.* at 3:50–61. In the Internet embodiment, network 14 transmits information in Internet Protocol (IP) packets; telephone voice information is transmitted using VoIP, e.g. with real-time transport protocol (RTP packets). *See id.* at 3:50–67. Communication devices 16 include applications and codecs that convert audio, video, or other suitable signals from analog to digital form to be encapsulated into IP or other suitable packets for transmission over network 14. *Id.* at 4:5–17. Gateway 20 converts between analog and/or digital formats, converting standard telephony signals received through PSTN 22 e.g., to and from VoIP format, and translating between the network call control system and Signaling System 7 protocol used in PSTN 22. *Id.* at 4:18–28. Call manager 30 manages call network 14 and is responsive to service requests from communication devices 16 and standard telephones 18 through gateway 20. *Id.* at 4:29–50. Call manager 30 provides voicemail, bridging, multicasting, call hold, conference call, and other multiparty communications. *Id.* at 4:51–57. Conference bridge 32 provides conference call and suitable audio, video, and/or real-time multiparty communication sessions between communication devices by receiving media from participating devices and, using suitable signal processing techniques, mixing it to provide conference signals. *Id.* at 4:58–5:2.

Call manager 30 responds to a call initiation request from a communication device 16 or, through gateway 20 from a telephone device 18, by transmitting a ring signal to a destination device that can accept the call; when the call is answered, call manager 30 begins media streaming. *Id.*

at 5:9–26. For conference calls, call manager 30 identifies the participants based on the called number and controls conference bridge 32 to set up, process and tear down conference calls. *Id.* at 5:27–31. Conference bridge 32 connects participants so that each participant receives a conference output stream that includes media of all other participants as required by the multiparty session. *Id.* at 5:31–39.

C. Elliott (Ex. 1007)

Elliott concerns multi-media collaboration services that allow two or more parties to exchange information in a conference setting. Ex. 1007, 1:41–42. Figure 1 of Elliott is reproduced below:

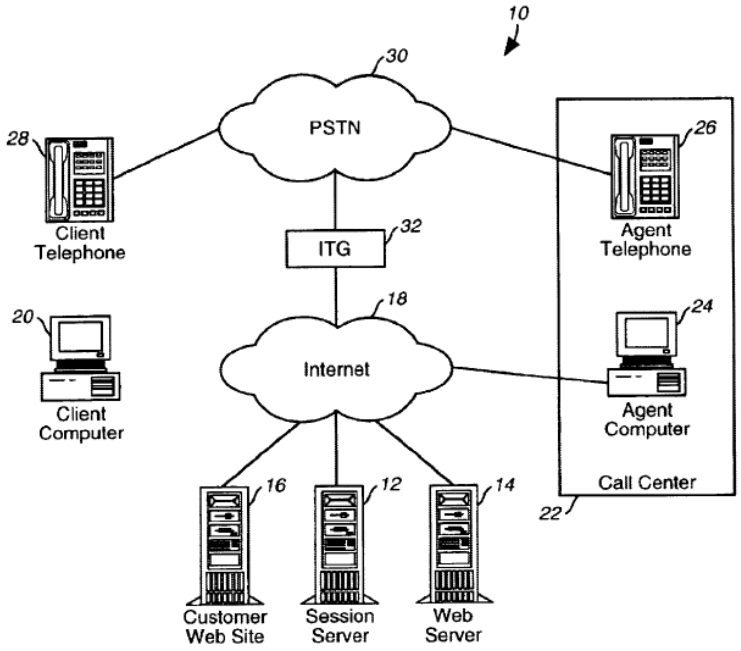


FIG. 1

Figure 1 of Elliott illustrates network architecture 10 in which shared network resources, e.g., session server 12, web server 14, and web site 16, provide services for plurality of parties. *Id.* at 3:57–63. Network 18 can be an IP-based network or an intranet that is or is not connected to the network, e.g., a public or carrier supported VPN or a local area network (LAN) which

uses IP or IP-tunneling. *Id.* at 4:6–34. Client computer 20 can be connected to network 18 via an analog, digital or cable modem, a T-1 line, or any other suitable subscriber line, and may itself be connected to a corporate intranet that includes a gateway to the Internet. *Id.* at 5:25–33. Session server 12 may be a conference server following the ITU T.120 standard that provides application protocols and services to support real-time multi-point data communications. *Id.* at 5:49–54. Preferably, session server 12 is able to set up to conduct video conferences, audio conferences and data conferences with application sharing and collaborative web browsing with URL push technology. *Id.* at 5:54–61. In operation, a client computer 20 accesses web server 14 that causes a program, e.g., a Java applet, to run on client computer 20, causing the computer to initiate a session with session server 12. *See id.* at 6:12–45. Once a session is established, multimedia collaboration is enabled. *Id.* at 6:46–47.

D. VPN Textbook (Ex. 1010)

The VPN textbook describes VPN topologies, the most common being the hub-and-spoke topology, also referred to as a "star" topology. Pet. 20–21 (citing Ex. 1010, 129–130; Ex. 1003, Houh Decl. ¶ 112).

E. De Moraes (Ex. 1022)

De Moraes relates to IP multicasting. *See generally* Ex. 1022. IP multicasting is the transmission of an IP datagram to a set of hosts identified by a single IP address, i.e., a host group. Ex. 1030,[8] 1. A host transmits an IP multicast datagram as a local network multicast to all immediately neighboring members of the destination host group; if the datagram has a

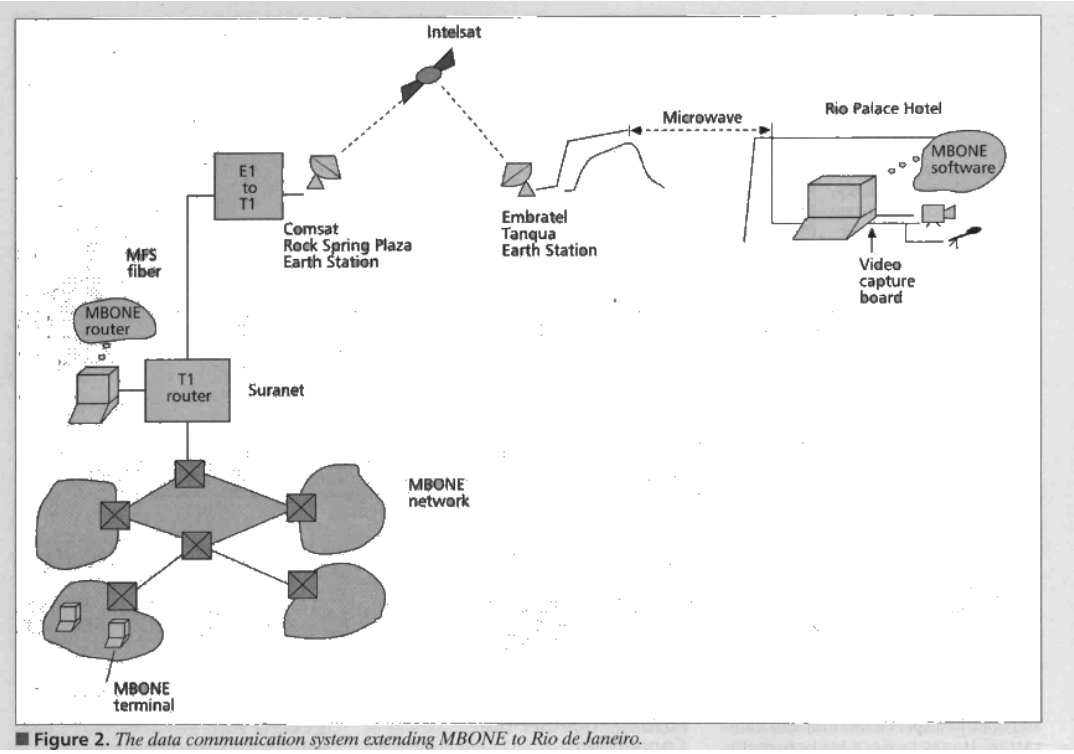
[8] Network Working Group Request for Comments 1112 ("RFC 1112"). RFC1112 is the IP multicast addressing standard.

time-to-live greater than 1, multicast routers attached to the local network are responsible for forwarding the datagram toward other networks that have members of the destination group. *Id.*

De Moraes discloses multicast backbones (MBONES) that enable unicast connections between multicast routers. Pet. 21–22. De Moraes describes MBONE as a virtual network layered on portions of the existing Internet, stating that MBONE is composed of islands, e.g., multicast LANs like Ethernet, joined by virtual point-to point links called "tunnels." Ex. 1022, 6.[9] The end-points are workstation with operating systems that support IP multicasting and have software, e.g. audio coding and compression software, to use RTP for transmission of audio, video, and whiteboard media. *Id*. Multicast packets are encapsulated for transmission through tunnels, so that they look like normal unicast packets to intervening routers and subnets. *Id.*

Figure 2 of de Moraes (with its background fill modified to enhance readability) is shown below.

[9] Consistent with the Petition, we refer to the page number of the article, as published, not the page number of Exhibit 1022.



■ **Figure 2.** *The data communication system extending MBONE to Rio de Janeiro.*

Id. at 8. Figure 2 of de Moraes illustrates the elements of a demonstration project in which a microwave link carried digital compressed audio/video signal from a conference room in the Rio Palace hotel in Rio de Janeiro, shown on the upper right portion of the Figure, to an Internet access provider in College Park, Maryland (Suranet) shown on the left of the Figure. *Id.* at 7–8. Workstations functioned as Internet hosts and media processors at the two ends. *Id.* The workstation at College Park also served as a MBONE multicast router. *Id.* About sixty listeners signed in to the conference. *Id.*

F. Reasons to Combine Teachings of the References

1. *Knappe & Elliott*

Petitioner contends that, because Knappe and Elliott both pertain to the same primary field of multiparty conferencing and support computer and PSTN conference participants, Knappe and Elliott are analogous art. Pet 24 (citing, e.g., Ex. 1006, (code 57), 3:26–29, 3:41–49; Ex. 1007, (code 57), 5:35–39, Fig. 1; Ex. 1003, Houh Decl. ¶ 115). Petitioner further notes that

Knappe and Elliott discuss sharing data during a conference call to facilitate collaboration among conference participants. *Id.* (citing Ex. 1006, 3:26–29; Ex. 1007, 1:43–44; Ex. 1003, Houh Decl. ¶ 116). In view of the similarity of the systems disclosed by Knappe and Elliott, the existence of standards for collaborative Web browsing (including for sharing collaborative information during video and audio conferring), and the conventional nature of VPN tunneling, Petitioner asserts that an ordinarily skilled artisan would have had a reasonable expectation of successfully combining the teachings of Knappe and Elliott to enhance the conferencing experience and secure communications among multiple sites using a VPN. *Id.* at 25–30 (citing Ex. 1003, Houh Decl. ¶¶ 116–121). Petitioner also states that its proposed combination of Knappe and Elliott permits, but does not require, physical incorporation of elements from Knappe and Elliott. *Id.* at 30.

As Knappe and Elliott both address multiparty conferencing and disclose similar systems, as discussed above, we find that, for purposes of this Decision, Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Knappe and Elliott. In particular, we find that a person of ordinary skill would have had reason to use Elliott's VPN tunneling approaches to improve the performance of systems taught by Knappe.

2. *Knappe and VPN Textbook*

Petitioner contends that, when implementing a conferencing system with VPN tunneling, as in Knappe and Elliott, an ordinarily skilled artisan would have had reason to consider known, predictable, VPN tunneling implementations and topologies, e.g., the hub-and-spoke topology found in the VPN Textbook. Pet. 31–32 (citing, e.g., Ex. 1003, Houh Decl. ¶¶ 115–120, 123–124; Ex. 1007, 2:66–3:1, 4:29–34, 6:53–54). Petitioner's

argument is persuasive. As Petitioner notes, an ordinarily skilled artisan would have known the hub-and-spoke topology had been applied in conference bridges and video-conferencing. *Id.* at 32–33 (citing Ex. 1003, Houh Decl. ¶¶ 85–86, 111–112, 126; Ex. 1019,[10] 4:23–27, 6:36–41; Ex. 1023,[11] ¶¶ 1411–1412, 1451–1453).

3. *Knappe and de Moraes*

Petitioner asserts that a person of ordinary skill in the art would have been motivated to combine the teachings of Knappe's multicast capable multiparty communications system with de Moraes's teachings to obtain the obvious, beneficial, and predictable results of transmitting data to multicast appliances, e.g. routers, using multicast packets over unicast connections. Pet. 33–34 (citing Ex. 1003, Houh Decl. ¶¶ 128–129; Ex. 1006, 3:50–61, 4:51–54; Ex. 1022, 6). Petitioner cites the demonstration system documented in de Moraes as evidence a person of ordinary skill would have had a reasonable expectation of success in combining Knappe and de Moraes. *Id.* at 34 (citing Ex. 1022, 7–8).

In view of Petitioner's citation of the demonstration system discussed de Moraes, we find that Petitioner has demonstrated a person of ordinary skill been motivated to combine the technique described in de Moraes with the teachings of Knappe to facilitate audio/video conferencing. Ex. 1022, 7.

[10] U.S. Patent No. 6,782,413
[11] U.S. Patent Publication No. 2004/0261116 A1

G. Petitioner's Challenge to Claims 1 and 3–7 as Obvious Over Knappe, Elliott, VPN Textbook, and de Moraes

1. *Claim 1*

a) Element 1.P

Petitioner identifies the preamble of claim 1 as claim element 1.P. Pet. 35. The preamble of claim 1 recites "[a] method for adding telephone participants to a multi-participant audio-video conference." Pet. 35. Petitioner cites Knappe as disclosing a system that can support multiple participants in an audio/video conference call by connecting communication devices 16 to each other and to standard analog telephones 18 through gateway 20 and PSTN 22. Pet. 35–36 (citing Ex. 1006, Fig. 1; Ex. 1003, Houh Decl. ¶ 131). Petitioner further cites Elliott as disclosing more than one media stream used in collaboration with more than one party over telephony, multi-party conferencing, and virtual private networks. *Id.* at 36 (citing Ex. 1007, Fig. 1; Ex. 1003, Houh Decl. ¶ 132).

On the present record, we determine that Petitioner has demonstrated Knappe and Elliott each disclose the subject matter in the preamble of claim 1.

b) Limitation 1.1

Petitioner designates as claim limitation 1.1 the recitation "sending a first message to each of a plurality of multicast appliances over the Internet, wherein the first message comprises a group address which identifies a plurality of participants." Pet. 37. Petitioner cites the combined teachings of Knappe and de Moraes as disclosing or suggesting claim limitation 1.1. *Id.* at 37–38.

Petitioner cites Knappe as disclosing that for each call, conference parameters 62 include an identification of participants 64 and priority

parameters 66 assigned to each participant. *Id.* (citing Ex. 1006, 6:43–51). Petitioner cites Knappe Figure 1 as showing a system capable of sending messages to each of a plurality of multicast appliances, e.g., communication devices 16, over the Internet with call manager 30 identifying participants based on the called number or other suitable criteria. *Id.* at 38 (citing Ex. 5:27–29).

Petitioner cites de Moraes as describing IP multicast addressing using Internet standard RFC 1112. *Id.* (citing Ex. 1022, 7; Ex. 1003, Houh Decl. ¶ 135). Noting that RFC 1112 explains IP multicasting is the transmission of an IP datagram to a host group, Petitioner contends that an ordinarily skilled artisan would have understood that using the RFC 1112 standard in an MBONE network, as disclosed by de Moraes, would enable a host to send messages to a plurality of multicast appliances, e.g., routers, with such messages including a group address that identifies a plurality of participants, as recited in claim limitation 1.1. *Id.* (citing Ex. 1003, Houh Decl. ¶ 135; Ex. 1030, 1, 11–16).

On the present record, we determine that Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Knappe and de Moraes and that in combination these references would have taught or suggested claim limitation 1.1 to a person of ordinary skill in the art.

c) Limitation 1.2

Petitioner identifies as claim limitation 1.2 the recitation "each of the multicast appliances receiving the first message." Pet. 39. Petitioner cites the combined teachings of Knappe and de Moraes as teaching claim limitation 1.2. *Id.* at 39–40. According to Petitioner, the claimed first message refers to "a group address which identifies a plurality of

participants." *Id.* Petitioner cites Knappe's disclosure of a multiparty communication session in which three or more parties exchange audio and/or other suitable information and notes that Knappe's conference bridge 32 is configured to send each communication device 16 conference parameters 62 that include an identification of participants 64 for each conference call. *Id.* (citing Ex. 1006, 4:58–5:1, 6:54–61; Ex. 1003, Houh Decl. ¶ 137).

Petitioner contends that a person of ordinary skill would have known that each communication device 16 can be a multicast appliance capable of receiving the first message. *Id.* at 40 (citing Ex. 1003, Houh Decl. ¶ 137). According to Petitioner, an ordinarily skilled artisan would have understood that communication devices 16 could be implemented as de Moraes endpoints with operating system support for IP multicast capable of receiving multicast packets encapsulated for transmission through tunnels. *Id.* (citing Ex. 1022, 6; Ex. 1003, Houh Decl. ¶ 137).

On the present record, we determine that Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Knappe and de Morase and that in combination these references would have taught or suggested claim limitation 1.2 to a person of ordinary skill in the art.

d) Limitation 1.3

Petitioner identifies the recitation "establishing a plurality of virtual private networks across the Internet routes between the multicast appliances," as claim limitation 1.3. Pet. 41. Petitioner asserts that the combined teachings of Knapp, Elliott, and the VPN Textbook disclose claim limitation 1.3. *Id.*

Petitioner cites Knappe as disclosing multicast appliances connected through network 14, e.g., the Internet, in a multi-party conferencing system. *Id.* (citing Ex. 1006, 3:54 (disclosing network 14 transmits information in IP packets); Ex. 1003, Houh Decl. ¶ 138). Petitioner cites Elliott as disclosing the multi-party conferencing system, e.g. Knappe's network 14 and Elliott's network 18, can be a public or carrier supported VPN that uses IP or IP-tunneling. *Id.* (citing Ex. 1007, 4:20–34; Ex. 1003, Houh Decl. ¶ 138). Petitioner cites VPN Textbook as disclosing well known methods of implementing VPNs, including the hub-and-spoke or "star" topology shown in the '997 patent. *Id.* at 41–43 (citing Ex. 1010, 130, Figs. 7–10; Ex. 1003, Houh Decl. ¶ 139).

On the present record, we determine that Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Knappe, Elliott, and VPN Textbook and that in combination these references would have taught claim limitation 1.3 to a person of ordinary skill in the art.

e) Limitation 1.4

Petitioner identifies the recitation "enabling at least one of the participants to communicate in the multi-participant video conferences," as claim limitation 1.4. Pet. 43. Petitioner contends that Knappe's description of a multi-participant video conferencing system discloses this limitation. *Id.* (citing Ex. 1006, Figs. 1–2, (code 57), 1:8–11, 3:24–40; Ex. 1003, Houh Decl. ¶ 140). As Petitioner notes, Knappe discloses that, during a multiparty communication session, participants are connected and stream media through conference bridge 32. *Id.* (citing Ex. 1006, 5:31–33).

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe teaches claim limitation 1.4.

f) Claim limitation 1.5

Petitioner identifies the recitation "the telephone participant joining the multi-participant video conference," as claim limitation 1.5. Pet. 43. Petitioner cites Knappe as describing network 14 connecting a plurality of communication devices 16 to each other and to a standard analog telephone 18 through gateway 20 and PSTN 22, wherein gateway 20 converts standard telephony signals into IP packets and vice versa. *Id.* at 42–43 (citing Ex. 1006, 3:41–49, 4:5–28, Fig. 1; Ex. 1003, Houh Decl. ¶ 141).

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe teaches claim limitation 1.5.

(1) Limitation 1.5a

Petitioner identifies the recitation "[wherein said joining comprises] the telephone participant calling into a gateway server" as claim limitation 1.5a. Pet. 44. Petitioner cites Knappe's disclosure that standard analog telephones 18 communicate telephony signals through PSTN 22 to gateway 20, where the signals are converted to IP packets in the VoIP format. *Id.*

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe teaches claim limitation 1.5a.

(2) Limitation 1.5b

Petitioner identifies the recitation "[wherein said joining comprises] the telephone participant providing conference ID information," as claim limitation 1.5b. Pet. 45. Petitioner cites Elliott's description of a user

logging in to a "session" that provides videoconferencing, audio conferencing, data conferencing and collaborative browsing. *Id.* (citing Ex. 1007, 6:46–64, Figs. 1, 2; Ex. 1003, Houh Decl. ¶ 143). Petitioner states that an ordinarily skilled artisan would have understood telephone participants 18 in Knappe's system would provide conference ID information, such as Elliott's session ID. *Id.*

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Elliott and Knappe teach claim limitation 1.5b.

(3) Limitation 1.5c

Petitioner identifies the recitation "[wherein said joining comprises] the gateway server establishing communication with a conferencing server," as claim limitation 1.5c. Pet. 45. Petitioner contends that an ordinarily skilled artisan would have understood Knappe's call manager 30 and/or conference bridge 32, alone or together, to be a conferencing server, as claimed. *Id.* at 46 (citing Ex. 1003, Houh Decl. ¶ 144). As evidence a person of ordinary skill would understand these devices to be a conferencing server, Petitioner notes that Knappe's call manager 30 includes functions such as bridging, multicasting, conference call, and other multiparty communications and conference bridge 32 provides conference call and other suitable audio, video, and real-time multiparty communication sessions between communication devices 16. *Id.* at 46–47 (citing Ex. 1006, 4:42–66; Ex. 1003, Houh Decl. ¶ 144).

Similarly, Petitioner argues that a person of ordinary skill would have understood Elliott's Internet telephone gateway ("ITG") 32 to establish communication with one or both of session server 12 and Web server 14. *Id.* Petitioner notes that Elliott's session server 12 manages communication

sessions among one or more agents and one or more clients and can set up to conduct videoconferences, audio conferences and data conferences with application sharing. *Id.* at 47. Petitioner further notes that Elliott's Web server 14 provides software for communications with client computer 20. *Id.* at 47–48 (citing Ex. 1007, 5:39–56; Ex. 1003, Houh Decl. ¶ 145).

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe and/or Elliott, alone or in combination, teach or suggest claim limitation 1.5c.

(4) Limitation 1.5d

Petitioner identifies the recitation "[wherein said joining comprises] authenticating the telephone participant," as claim limitation 1.5d. Pet. 48. Petitioner cites Knappe's disclosure that, for each conference, call conference parameters 62 include the identification of participants 64 and that telephone participants 18 may be identified by a caller ID, phone number, or other suitable identifier. *Id.* (citing Ex. 1006, 6:45–50, 5:12–23; Ex. 1003, Houh Decl. ¶ 147).

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe teaches claim limitation 1.5d.

(5) Limitation 1.5e

Petitioner identifies the recitation [wherein said joining comprises] "transmitting multicast group information to the gateway server," as claim limitation 1.5e. Pet. 49. Petitioner cites Knappe and de Moraes in combination as disclosing claim limitation 1.5e. *Id.* Petitioner states that "any or all of Knappe's communication devices 16 can be multicast appliances connected over a network capable of transmitting multicast group information (e.g., MBONE as described in de Moraes) to other participants

in the multi-party conference." *Id.* (citing Ex. 1003, Houh Decl. ¶¶ 134–139, 148). Petitioner further notes Knappe's disclosure that media streaming occurs between gateway 20 and the destination device and that gateway 20 transmits media to telephone 18. *Id.* (citing Ex. 1006, 5:23–26; Ex. 1003, Houh Decl. ¶ 148). Based on the combined teachings of Knappe and de Moraes, Petitioner asserts that an ordinarily skilled artisan would have known to combine Knappe and de Moraes to transmit multicast group information to a gateway, e.g., Knappe's gateway 20, as recited in this claim limitation.

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that in combination Knappe and de Moraes teach or suggest claim limitation 1.5e.

g) Limitation 1.6

Petitioner identifies as claim limitation 1.6 the recitation "wherein the gateway server is operable to use the multicast group information to enable the telephone participant to participate in the multi-participant video conference." Pet. 49. Petitioner asserts that Knappe and Elliott, each in combination with de Moraes, disclose claim limitation 1.6. *Id.* (citing Ex. 1003, Houh Decl. ¶ 149). Petitioner cites Knappe's gateway 20 as converting VoIP packets received from network 14 into standard telephony signals for delivery to destination telephone 18 PSTN 22. *Id.* (citing Ex. 1006, 4:18–28). Petitioner asserts that a person of ordinary skill would have known to combine Knappe's teachings with those of de Moraes to implement Knappe's gateway server 20 to use multicast group information from destination devices, e.g., multicast appliances, to enable a telephone participant 18 to participate in the multi-participant videoconference. *Id.* at 50 (citing Ex. 1003, Houh Decl. ¶ 149).

Petitioner also cites Elliott's gateway ITG 32 as providing an interface between circuit-switched PSTN 30 and packet switched IP network 18 through which multi-media collaboration, including videoconferencing, is enabled. *Id.* (citing Ex. 1007, 1:41–44, 6:7–10; Ex_1003, Houh Decl. ¶ 150). Petitioner further asserts that an ordinarily skilled artisan would have known to combine Elliott with de Moraes's disclosure of an MBONE with multicast endpoints capable of sharing multicast group information over the Internet to enable a telephone participant to participate in a multi-participant videoconference with such multicast endpoints. *Id.* (citing Ex. 1022, 6–7; Ex. 1003, Houh Decl. ¶ 150).

On the present record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have understood that Knappe and Elliott, each in combination with de Moraes, teach or suggest claim limitation 1.6.

h) Summary as to Claim 1

On the current record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Knappe, Elliott, VPN Textbook, and de Moraes and that their combined teachings would have taught or suggested all the limitations of claim 1 to the ordinarily skilled artisan.

2. *Claim 3*

a) Limitations 3.P–3.5

Petitioner designates the following limitations of claim 3 as limitations 3.P–3.5:

> 3.P A method for adding a telephone participant to a multiparticipant audio-video conference comprising:

> 3.1 sending a first message to each of a plurality of multicast appliances over the Internet, wherein the first message comprises a group address which identifies the participants;
> 3.2 each of the multicast appliances receiving the first message,
> 3.3 establishing a plurality of virtual private networks across the Internet routes between the multicast appliances;
> 3.4 enabling at least one of the participants to communicate in the multi-participant video conferences;
> 3.5 the telephone participant joining the multi-participant video conference, wherein said joining comprises:

Pet. 51. Petitioner cites its discussion of claim limitations 1.P–1.5 as demonstrating the references teach corresponding limitations 3.P–3.5. *Id.* We agree with Petitioner that the subject matter recited in claim limitations 1.P–1.5 and 3.P–3.5 are similar. Therefore, for the same reasons as those discussed above with respect to claim 1, we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, VPN Textbook, and de Moraes would have taught or suggested corresponding limitations 3.P–3.5 to the ordinarily skilled artisan.

(1) Limitation 3.5a

Petitioner designates the recitation "the telephone participant providing conference ID information," as claim limitation 3.5a. Pet. 51. Petitioner cites its discussion of claim limitation 1.5b as demonstrating the references teach claim limitation 3.5a. *Id.* We agree with Petitioner that the subject matter recited in claim limitations 1.5b and 3.5a is similar. Therefore, for the same reasons as those discussed above with respect to claim 1, we determine that Petitioner has demonstrated that the combined teachings of Knappe and Elliott would have taught or suggested limitation 3.5a to the ordinarily skilled artisan.

(2) Limitation 3.5b

Petitioner designates the recitation "authenticating the telephone participant," as claim limitation 3.5b. Pet. 52. Petitioner cites its discussion of claim limitation 1.5d as demonstrating the references teach claim limitation 3.5b. *Id.* We agree with Petitioner that the subject matter recited in claim limitations 1.5d and 3.5b is similar. Therefore, for the same reasons as those discussed above with respect to claim 1, we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, and de Moraes would have taught or suggested limitation 3.5b to the ordinarily skilled artisan.

b) Limitation 3.6

Petitioner designates the recitation "the telephone participant participating in the multi-participant video conference comprises." as claim limitation 3.6. Pet. 52, *see also id.* n.4. Petitioner cites its discussion of claim limitation 1.5 as demonstrating the references teach claim limitation 3.6. *Id.* We agree with Petitioner that the subject matter recited in claim limitations 1.5 and 3.6 is similar. Therefore, for the same reasons as those discussed above with respect to claim 1, we determine that Petitioner has demonstrated that Knappe would have taught or suggested limitation 3.6 to the ordinarily skilled artisan

(1) Limitation 3.6a

Petitioner designates the recitation "the telephone participant speaking in the video conference," as claim limitation 3.6a. Pet. 52. Petitioner cites Knappe as disclosing this limitation. *Id.* Petitioner cites Knappe as disclosing a method in which voice streams are received from telephone participants connected to the videoconference through PSTN 22 and gateway 20. *Id.* (citing Ex. 1006, 9:9–10, Fig. 1; Ex. 1003, Houh Decl.

¶ 161). Petitioner further notes that Knappe states "[i]f the moderator is not speaking, at step 208 the participant voice streams are transmitted to all participants." *Id.* (citing Ex. 1006, 9:13–15).

On the present record, we determine that Petitioner has demonstrated that Knappe would have taught or suggested claim limitation 3.6a to a person of ordinary skill.

(2) Limitation 3.6b

Petitioner designates the recitation "generating digital voice data in response to the telephone participant speaking," as claim limitation 3.6b. Pet. 53. Petitioner cites Knappe as disclosing claim limitation 3.6b. *Id.* In particular, Petitioner notes that Knappe discloses gateway 20 having a codec and converting standard telephony signals to IP packets in VoIP format. *Id.*

On the present record, we determine that Petitioner has demonstrated that Knappe would have taught or suggested claim limitation 3.6b to a person of ordinary skill.

c) Summary as to claim 3

On the current record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Knappe, Elliott, VPN Textbook, and de Moraes and that their combined teachings would have taught or suggested all the limitations of claim 3 to the ordinarily skilled artisan.

3. *Claim 4*

Claim 4 depends from the method for adding a telephone participant to a multi-participant audio-video conference recited in claim 3 and further recites that "the telephone participant joining the multiparticipant videoconference further comprises [4.1] the telephone participant calling into a gateway server; and [4.2] the gateway server establishing

communication with a conferencing server." *See* Pet. 53–54. As to claim limitation 4.1, Petitioner cites its discussion of claim limitation 1.5a; as to claim limitation 4.2, Petitioner cites its discussion of claim limitation 1.5c. *Id.* (citing Ex. 1003, Houh Decl. ¶¶ 164–165).

We agree with Petitioner that the subject matter recited in claim limitations 4.1 and 4.2 is similar to the subject matter recited in claim limitations 1.5a and 1.5c, respectively. Therefore, on the current record, we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, VPN Textbook, and de Moraes would have taught or suggested all the limitations of claim 4 to a person of ordinary skill.

4. *Claim 5*

Claim 5 depends from the method for adding a telephone participant to a multi-participant audio-video conference recited in claim 4 and further recites that "the telephone participant joining the multi-participant video conference further comprises: [5.1] transmitting multicast group information to the gateway server; and [5.2] wherein the gateway server is operable to use the multicast group information to enable the telephone participant to participate in the multi-participant video conference." Pet. 54. As to claim limitation 5.1, Petitioner cites its discussion of claim limitation 1.5e; as to claim limitation 5.2, Petitioner cites its discussion of claim limitation 1.6. *Id.* (citing Ex. 1003, Houh Decl. ¶ 168).

We agree with Petitioner that the subject matter recited in claim limitations 5.1 and 5.2 is similar to the subject matter recited in claim limitations 1.5e and 1.6, respectively. Therefore, on the current record, we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, VPN Textbook, and de Moraes would have taught or suggested all the limitations of claim 5 to a person of ordinary skill.

5. *Claim 6*

Claim 6 depends from the method for adding a telephone participant to a multi-participant audio-video conference recited in claim 4 and further recites that "the gateway server includes a PSTN gateway server." Pet. 54. Petitioner cites its discussion of the preamble of claim 1 and limitation 1.5c as evidence that the references teach the limitations recited in claim 6. *Id.* (citing Ex. 1003, Houh Decl. ¶ 169).

We agree with Petitioner that the subject matter recited in the preamble of claim 1 and claim limitation 1.5c is similar to the subject matter recited in claim 6. Therefore, on the current record, we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, VPN Textbook, and de Moraes would have disclosed or suggested all the limitations of claim 6 to a person of ordinary skill.

6. *Claim 7*

Claim 7 depends from the method for adding a telephone participant to a multi-participant audio-video conference recited in claim 4 and further recites that "the telephone participant participating in the multi-participant video conference further comprises: [7.1] the gateway transforming the digital voice data into IP packets; and [7.2] configuring the IP packet with a group address according to a multicast protocol to create a multicast IP packet." Pet. 54–55.

Referencing its discussion of claim limitations 1.6 and 3.6b, Petitioner cites Knappe as disclosing claim limitation 7.1. *Id.* at 55. Petitioner notes that Knappe discloses gateway 20 that converts standard telephony signals to IP packets in the VoIP format and a codec that converts audio, video and other analog signals into digital encoded data that is encapsulated into IP or

other suitable packets for transmission over network 14. *Id.* (citing Ex. 1006, 4:18–26: Ex. 1003, Houh Decl. ¶ 171).

Petitioner cites de Moraes's disclosure of IP multicast addressing using Internet standard RFC 1112 as teaching claim limitation 7.2. *Id.* (citing Ex. 1022, 7; Ex. 1003, Houh Decl. ¶ 172). According to Petitioner, an ordinarily skilled artisan would have understood that using an Internet standard like RFC 1112 in an MBONE network, as described in de Moraes, would include configuring an IP multicast packet with the group address according to a multicast protocol. *Id.* (citing Ex. 1003, Houh Decl. ¶¶ 72–73, 114, 172; Ex. 1030, 1, 9–16).

On the current record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Knappe, Elliott, VPN Textbook, and de Moraes and that their combined teachings would have taught or suggested all the limitations of claim 7 to the ordinarily skilled artisan.

H. Petitioner's Challenge to Claims 2 and 8–10 as Obvious Over Knappe, Elliott, the VPN Textbook, de Moraes, and Shepherd

1. *Shepherd*

Shepherd discloses a system that supports delivery and reception of multicast content across a unicast network in which a first device is a destination device and a second device is a multicast enable router. Ex. 1034, (code 57). The destination device is a host within a computer network that seeks to receive content delivered as multicast packets from a source device. *Id.* at 2:4–8. In order to join a multicast group and receive the associated content, the destination device sends a multicast join message to a local router. *Id.* at 2:8–11. If the attempt to join the multicast group fails, i.e., the route to the source device is not multicast enabled, the destination

device sends a unicast request message that includes, as a destination address, an address that is associated with the source and is marked for interception by an intermediate network device, such as a multicast router. *Id.* at 2:12–18. A multicast router on the route to the source can perform similarly, if the next-hop router is not multicast enabled. *Id.* at 2:18–29. The multicast router that receives the unicast request message receives multicast packages with the source/group address indicated in the unicast request message and delivers the packets to the requesting device as unicast packets compatible with a requested delivery mode, e.g. encapsulated delivery. *Id.* at 16:35–55.

2. *Reasons to Combine*

As a reason an ordinarily skilled artisan would have combined Shepherd's teachings with those of Knappe, Petitioner cites Shepherd's disclosure that the ability of a multicast enabled router to deliver multicast content across unicast networks may reduce costs borne by the content provider to deliver content to destination devices. Pet. 60–61 (citing Ex. 1034, 6:6–11, 10:8–12, 15:19–23). Petitioner also notes that delivering Knappe's video conferencing content over unicast networks would require only combining known methods to achieve the predictable and beneficial cost savings. *Id.* at 61 (citing Ex. 1003, Houh Decl. ¶ 178).

Noting that de Moraes MBONE multicast routers are interconnected with unicast tunnels that use unicast IP address to reach the next router, Petitioner asserts that a person of ordinary skill would have viewed Shepherd's multicast router to be an exemplary implementation of an MBONE router. *Id.* (citing Ex. 1034, 18:20–28, Figs. 1–3, 5–7; Ex. 1003, Houh Decl. ¶ 179).

For the reasons discussed above, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Shepherd with those of Knappe.

3. *Claim 2*

a) Limitation 2.P

Petitioner designates the preamble of claim 2 as element 2.P. Pet. 62. The preamble of claim 2 recites "[t]he method of claim 1, wherein the telephone participant in the multi-participant conference comprises." *Id.* Petitioner cites its analysis of claim limitations 1.P–1.7 and 3.6 as demonstrating that Knappe, Elliott and de Moraes disclose the features of the preamble. *Id.* (citing Ex. 1003, Houh Decl. ¶ 181). For the same reasons as those discussed above with respect to claim 1, we determine that Petitioner has demonstrated the combined teachings of Knappe, Elliott, the VPN Textbook, and de Moraes would have disclosed or suggested preamble 2.P to the ordinarily skilled artisan.

b) Limitation 2.1

Petitioner designates as claim limitation 2.1 the recitation "the telephone participant speaking in the video conference." Pet. 62.

Petitioner cites its discussion of claim limitation 3.6a as evidence that the combined teachings of Knappe, Elliott and de Moraes teach claim limitation 2.1. *Id.* (citing Ex. 1003, Houh Decl. ¶ 182). For the same reasons as those discussed above with respect to limitation 3.6a, we find that Petitioner has demonstrated Knappe would have taught or suggested limitation 2.1 to the ordinarily skilled artisan.

c) Limitation 2.2

Petitioner designates as claim limitation 2.2 the recitation "generating digital voice data in response to the telephone participant speaking." Pet. 62.

Petitioner cites its discussion of claim limitation 3.6b as evidence that the combined teachings of Knappe, Elliott and de Moraes teach claim limitation 2.2. *Id.* (citing Ex. 1003, Houh Decl. ¶ 183). For the same reasons as those discussed above with respect to limitation 3.6b, we determine that Petitioner has demonstrated Knappe would have taught or suggested limitation 2.2 to the ordinarily skilled artisan.

d) Limitation 2.3

Petitioner designates as claim limitation 2.3 the recitation "the gateway transforming the digital voice date into IP packets." Pet. 62. Petitioner cites its discussion of claim limitation 7.1 as evidence that the combined teachings of Knappe, Elliott and de Moraes teach claim limitation 2.3. *Id.* (citing Ex. 1003, Houh Decl. ¶ 182). For the same reasons as those discussed above with respect to limitation 7.1, we determine that Petitioner has demonstrated the combined teachings of Knappe, Elliott, and de Moraes would have taught or suggested limitation 2.3 to the ordinarily skilled artisan.

e) Limitation 2.4

Petitioner designates as claim limitation 2.4 the recitation "configuring the IP packet with a group address according to a multicast protocol to create a multicast IP packet." Pet. 62. Petitioner cites its discussion of claim limitation 7.2 as evidence that the combined teachings of Knappe, Elliott and de Moraes teach claim limitation 2.4. *Id.* (citing Ex. 1003, Houh Decl. ¶ 182). For the same reasons as those discussed above with respect to limitation 7.2, we determine that Petitioner has demonstrated the combined teachings of Knappe, Elliott, and de Moraes would have taught or suggested limitation 2.4 to the ordinarily skilled artisan.

f) Limitation 2.5

Petitioner designates as claim limitation 2.5 the recitation "encapsulating the multicast IP packet as a unicast packet." Pet. 62. Petitioner notes that de Moraes discloses multicast routers are connected with IP tunnels and that such IP tunnels are unicast tunnels using IP addresses to get to the next MBONE router. *Id.* (citing Ex. 1022, 6; Ex. 1003, Houh Decl. ¶ 186). Petitioner also notes that IP multicast packets are encapsulated for transmission through tunnels, so that they look like normal unicast packets to intervening routers and subnets. *Id.*; *see also* Ex. 1022, 6. Petitioner cites Shepherd as describing ways such unicast tunnels can be implemented. Pet. 63 (citing Ex. 1034, 18:20–28).

Petitioner cites Shepherd's disclosure of the steps shown in Figure 5. *Id.* Shepherd discloses that a destination device requesting to receive multicast content sends a multicast join message as an IGMP control packet. Ex. 1034, 16:4–19, *see also* Ex. 1030, 4. If the destination device recognizes that the route to the source device is not multicast enabled, the destination device sends a unicast message. *See* Ex. 1034, 16:20–36. The unicast request message contains information that will be recognized by a multicast router to receive multicast packets containing the multicast content and deliver the multicast packets to the destination device as unicast packets. *Id.* at 16:35–30. The information includes the group address associated with the multicast content, the address of the source device (which may by the destination address or one or more packets of the unicast request message), the address of the destination device, and a delivery mode indication. *Id.* at 16:35–47. One possible delivery mode is "encapsulated delivery," in which the multicast packets are encapsulated with a header that includes the address of the destination device. *Id.* at 16:53–55.

Thus, as Petitioner points out, we determine that Shepherd discloses limitation 2.5 because Shepherd teaches sending in a unicast request message, that a multicast router can recognize, an indication of an encapsulated delivery mode in which multicast packets received should be encapsulated with a header that includes the address of the destination device. Pet. 63 (citing Ex. 1034, 16:47–63; Ex. 1003, Houh Decl. ¶ 187).

g) Limitation 2.6

Petitioner designates as claim limitation 2.6 the recitation "transmitting the unicast packet over the virtual private networks across the Internet between one or more appliances." Pet. 64. Petitioner cites Shepherd's discussion of Figure 3 as demonstrating that network 40 supports delivery and reception of multicast content across a unicast network, e.g., label switched network 42, and "may provide additional advantages, such as allowing the delivery of multicast content in a virtual private network (VPN) utilizing a label-switched network of a provider of the VPN service." *Id.* at 65 (citing Ex. 1034, 12:1–4, 15:26–29; Ex. 1003, Houh Decl. ¶ 189); *see also* Ex. 1034, 15:20–36 ("[a] provider of the VPN service to the enterprise may provide access to label-switched network 42 via multicast-enabled routers 16E and 16F that are maintained by the VPN service provider")). Based on this evidence, we determine that Petitioner has demonstrated that Shepherd teaches limitation 2.6.

h) Limitation 2.7

Petitioner designates as claim limitation 2.7 the recitation "one or more of the appliances determining the multicast data from the unicast packet." Pet. 65. Petitioner cites de Moraes and Shephard as disclosing this limitation. *Id.*

Petitioner notes that de Moraes discloses multicast routers are interconnected with IP tunnels, which are unicast tunnels and use unicast IP addresses to get to the next MBONE router. *Id.* (citing Ex. 1022, 6 (disclosing tunnel end points are workstations with operating systems that support IP multicast and always run the "mrouted" routing daemon in the background)).

Petitioner cites Shepherd as disclosing that a multicast enabled router that sends a unicast message eventually receives a unicast packet from the multicast enabled router the intercepts the unicast request message. *Id.* at 66; Ex. 1034, 18:7–10. Petitioner notes that the multicast enabled router that receives the unicasts packets may remove the encapsulation or labels to expose the multicast packets for the source/group address pair indicated in the unicast request message; this enables that destination device to determine the multicast data from the unicast packet. Pet. 66 (citing Ex. 1034, 18:20–24; Ex. 1003, Houh Decl. ¶ 191). We agree with Petitioner that this feature of Shepherd enables a destination device to determine the multicast data from the unicast packet as claimed. *Id.* Based on this evidence, we determine that Petitioner has demonstrated that de Moraes and Shepherd teach limitation 2.7.

i) Limitation 2.8

Petitioner designates as claim limitation 2.8 the recitation "the appliances providing the multicast data to each of the other participants in the group address." Pet. 67. Petitioner cites de Moraes and Shepherd, individually, and in combination, as disclosing this limitation. *Id.*

Petitioner cites de Moraes as disclosing MBONE multicast routers interconnected with IP tunnels that are unicast tunnels using IP address to get to the next MBONE router and Shepherd as disclosing how to implement

such tunnels. *Id.* (citing Ex. 1022, 6; Ex. 1003, Houh Decl. ¶¶ 192–193); *see also* Section IX.H.3.f herein.

In support of its contention that Shepherd teaches this limitation, Petitioner cites Shepherd's disclosure that the multicast router that sends the unicast request message and receives the unicast packet, may replicate the multicast packets, and if more than one interface is indicated in the multicast forwarding information maintained by the multicast enabled router for the source/group address pair and forward the multicast packets via the indicated interfaces. *Id.* at 68 (citing Ex. 1034, 18:20–28), *see also id.* (disclosing that multicast enabled router 16 "may replicate the received multicast packets, and readdress and deliver, encapsulate and deliver, or forward the replicated packets as indicated by the multicast forwarding information," where the appliances "received multiple unicast request messages and/or multicast join messages for the same source/group address pair.").

Based on the above, we determine that Petitioner has demonstrated that de Moraes and Shepherd teach this limitation.

j) Summary as to claim 2

On the current record, we determine that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Knappe, Elliott, the VPN Textbook, de Moraes, and Shepherd and that their combined teachings would have taught or suggested all the limitations of claim 2 to the ordinarily skilled artisan.

4. *Claim 8*

Claim 8 recites "[8.P] The method of adding a telephone participant to a multi-participant audio-video conference of claim 1, wherein the telephone

participant participating in the multi-participant video conference further comprises [8.1] encapsulating the multicast IP packet as a unicast packet."

Petitioner cites its discussion of claim limitations 7.P–7.2 as evidence that the combined teachings of Knappe, Elliott and de Moraes teach the preamble of claim 8 and its discussion of limitation 2.5 as evidence that the further combination with Shepherd teaches limitation 8.1. Pet. 69 (citing Ex. 1003, Houh Decl. ¶¶ 191–192). For the same reasons as those discussed above with respect to limitation 7.1, 7.2, and 2.5 we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, de Moraes, the VPN Textbook, and Shepherd would have taught or suggested the limitations of claim 8 to the ordinarily skilled artisan.

5. *Claim 9*

Claim 9 depends from claim 8 and further recites "transmitting the unicast packet over the virtual private networks across the Internet between one or more appliances."

Petitioner cites its discussion of claim limitations 8.P–8.1, and 2.6 as evidence that the combined teachings of Knappe, Elliott, de Moraes, and Shepherd teach the imitations of claim 9. Pet. 69 (citing Ex. 1003, Houh Decl. ¶ 193). For the same reasons as those discussed above with respect to limitation 8.P–8.1 and 2.6 we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, de Moraes, the VPN Textbook, and Shepherd would have taught or suggested the limitations of claim 8 to the ordinarily skilled artisan.

6. *Claim 10*

Claim 10 depends from claim 9 and further recites "[10.1] one or more of the appliances determining the multicast data from the unicast packet; and [10.2] the appliances providing the multicast data to each of the

other participants in the group address." Petitioner cites its discussion of limitations 2.7 and 2.8 as evidence that the combined teachings of Knappe, Elliott, de Moraes, and Shepherd teach the imitations of claim 10. Pet. 69–70 (citing Ex. 1003, Houh Decl. ¶¶ 195–196). For the same reasons as those discussed above with respect to claim 9 and limitations 2.7 and 2.8 we determine that Petitioner has demonstrated that the combined teachings of Knappe, Elliott, de Moraes, the VPN Textbook, and Shepherd would have disclosed or suggested the limitations of claim 10 to the ordinarily skilled artisan.

X. CONCLUSION

For the reasons discussed above, we determine that Petitioner has demonstrated a reasonable likelihood that it will succeed on the following challenges to patentability:

Claims 1 and 3–7 as obvious under 35 U.S.C. § 103(a)over Knappe in view of Elliott, the VPN Textbook, and de Moraes, and

Claims 2 and 8–10 as obvious under 35 U.S.C. § 103(a) over Knappe in view of Elliott, the VPN Textbook, de Moraes, and Shepherd.

XI. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, pursuant to 35 U.S.C. § 314(a) an *inter partes* review of the '997 patent is hereby 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.

FURTHER ORDERED that the trial is authorized on all grounds set forth in the Petition, in particular:

Claims 1 and 3–7 as obvious under 35 U.S.C. § 103(a)over Knappe in view of Elliott, the VPN Textbook, and de Morae, and

Claims 2 and 8–10 as obvious under 35 U.S.C. § 103(a) over Knappe in view of Elliott, the VPN Textbook, de Moraes, and Shepherd; and,

FURTHER ORDERED that the trial will be conducted in accordance with a corresponding separately issued Scheduling Order.

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