

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.

IPR2023-00382
Patent 9,843,612 B2

Before KARL D. EASTHOM, CHARLES J. BOUDREAU, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

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

I. INTRODUCTION

Zoho Corporation and Zoho Corporation Pvt., Ltd, Petitioner, filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 19–29 of U.S. Patent No. 9,843,612 B2 (Ex. 1001, the “’612 patent”). Pet. 1. Meetrix IP, LLC, Patent Owner, did not file a preliminary response.

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). Institution of an *inter partes* review requires that “the information presented in the petition and . . . any response . . . 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). For the reasons set forth below, we determine that there is a reasonable likelihood that Petitioner will prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review of the ’612 patent.

II. BACKGROUND

A. *Real Parties in Interest*

The parties identify themselves as real parties in interest. Pet. 2; Paper 3, 2.

B. *Related Matters*

Petitioner challenges claims 10–18 of the ’612 patent in IPR2023-00380. IPR2023-00380, Paper 1. The parties identify the following district court proceedings as related matters involving the ’612 patent or related patents: *Meetrix IP, LLC v. Zoho Corp.*, No. 6:21-cv-01288 (W.D. Tex.) (filed Dec. 10, 2021); *Meetrix IP, LLC v. Verizon Comms., Inc.*, No. 6:21-cv-01289 (W.D. Tex.) (filed Dec. 10, 2021). *See* Pet. 3; Paper 3, 2.

Patent Owner identifies the following *inter partes* reviews as involving related patents challenged by Petitioner: IPR2023-00371, IPR2023-00377, IPR2023-00378, and IPR2023-00379. Paper 3, 2.

The '612 patent previously was the subject of two petitions for *inter partes* review filed by Cisco Systems, Inc. in IPR2019-00543 and IPR2019-00544, both of which proceedings settled and were dismissed prior to any decision on institution. IPR2019-00543, Papers 2, 8; IPR2019-00544, Papers 2, 8.

C. The '612 Patent

The '612 patent relates to “[a] system and method for supporting a multi-participant voice conference call using [Public Switched Telephone Network (PSTN)] and Internet networks.” Ex. 1001, code (57). The method includes receiving voice from a PSTN client. The method also includes receiving voice data from a moderator and from at least one remote client connected to the Internet. The method then proceeds to mix the voice data from the PSTN client with the voice data from the moderator into a first mixed voice data that is transmitted to the remote client that is connected to the Internet. The method also mixes the voice data from the moderator with the voice data from the remote client connected to the Internet into a second mixed voice data that is transmitted to the PSTN client.

Id.

Figure 3 follows:

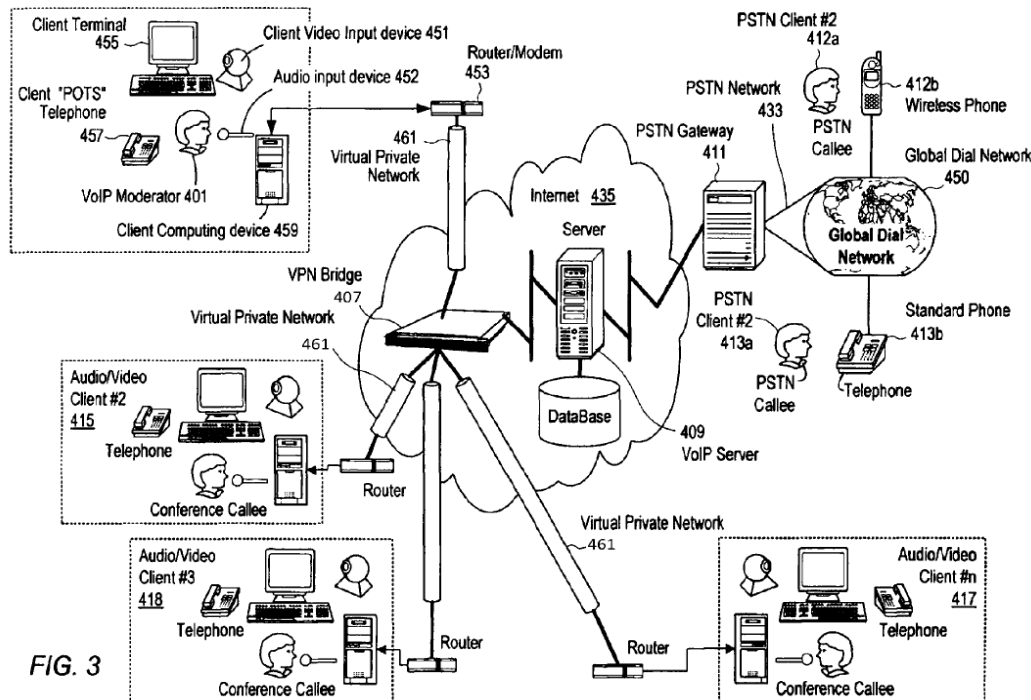


Figure 3 depicts clients, including local moderator client 401, PSTN clients 412, 413, and remote Internet audio video clients 415, 417, and 418.

Ex. 1001, 5:21–27, 7:17–38. The audio video clients “connect[] through routers or modems 453 preferably in a virtual private network [(VPN)] configuration 461” with “VPN bridge 407” located in the center of a “star topology,” with connections to the VPN bridge serving as a “VPN tunnel.” *Id.* at 5:1–13, 5:22–25, 5:45–48. The PSTN network includes “telephony clients using standard wired 413 or wireless telephone 412 systems,” and connected to the Internet clients via PSTN gateway 411. *Id.* at 5:14–33.

The remote Internet clients share audio/video data through the VPN tunnels. Ex. 1001, 5:34–59; *see also id.* at Fig. 4. The PSTN clients share audio with the Internet clients. *Id.* at 9:24–44. The local moderator client “may . . . be the initiator of the meeting” for all clients and may initiate a “dial out for audio conferencing to the PSTN client.” *Id.* at 7:22–26.

Alternatively, a “‘Dial-In’ may be used . . . using the same techniques . . . but in a reverse path scenario.” *Id.* at 7:55–57. “The local moderator 401 and the remote audio video clients 418 may share audio and video data in a full duplex mode among . . . all participants with the exception of the PSTN client 412.” *Id.* at 7:26–29.

The system also performs encoding and decoding of audio data using codecs of the prior art H.323 standard and the transmission of collaboration data per the prior art T.120 standard. Ex. 1001, 2:63–3:1, 3:17–22 (“[T]he H.323 recommendation defines a data collaboration capability as known and outlined in the T.120 data collaboration unit 225.”).

D. Illustrative Claim

Independent claim 19 is illustrative of the challenged claims, and follows (with bracketed information conforming to Petitioner’s notation):

19. [19.P] A method for conducting a secure multi-participant conference call including full duplex audio, the method comprising:

[19.1.1] receiving first audio data, first video data, and first collaboration data at a server from a first remote client [19.1.2] through a first Virtual Private Network (VPN) tunnel;

[19.2.1] receiving second audio data at the server from a second remote client [19.2.2] through a second VPN tunnel;

[19.3] receiving third audio data at the server from a Public Switched Telephone Network (PSTN) client through a PSTN gateway;

[19.4] mixing the first audio data with the second audio data into a first mixed audio data;

[19.5] mixing the second audio data with the third audio data into a second mixed audio data;

[19.6] mixing the first audio data with the third audio data into a third mixed audio data;

[19.7] transmitting the first mixed audio data from the server to the PSTN client through the PSTN gateway;

[19.8] transmitting the second mixed audio data from the server to the first remote client through the first VPN tunnel;

[19.9] transmitting the third mixed audio data from the server to the second remote client through the second VPN tunnel; and

[19.10] transmitting the first video data and the first collaboration data from the se[r]ver to the second remote client.

E. Asserted Grounds of Unpatentability

Petitioner contends that claims 19–29 are unpatentable as follows:¹

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
19–21, 25–27	103(a)	Knappe, ² Elliott, ³ VPN Textbook, ⁴ Hendricks ⁵
22–24, 28, 29	103(a)	Knappe, Elliott, VPN Textbook, Hendricks, Drell ⁶

Pet. 4. Petitioner supports its Petition with a Declaration of Dr. Henry H. Houh. Ex. 1003.

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103, effective March 16, 2013, which is after the ’612 patent’s effective filing date, Mar. 10, 2003 or March 9, 2004. See Ex. 1001, codes (60, 63). Therefore, the pre-AIA version of § 103 applies for purposes of institution.

² US Patent No. 7,180,997 B2, issued Feb. 20, 2007, filed Sept. 6, 2002. Ex. 1006.

³ US Patent No. 6,690,654 B2, issued Feb. 10, 2004, filed Oct. 1, 1998. Ex. 1007.

⁴ Excerpts from Jim Guichard & Ivan Pepelnjak, MPLS AND VPN ARCHITECTURES (2001). Ex. 1010.

⁵ PCT Pub. No. WO 01/18665 A1, published Mar. 15, 2001. Ex. 1040.

⁶ US Patent No. 7,089,285 B1, issued Aug. 8, 2006, filed Oct. 5, 2000. Ex. 1008.

III. ANALYSIS OF THE GROUNDS

A. Legal Standards

Section 103(a) forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). The obviousness question involves resolving 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 when presented (not so here), (4) objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Determining whether an invention would have been obvious under 35 U.S.C. § 103 requires resolving the level of ordinary skill in the pertinent art at the time of the effective filing date of the claimed invention. *Graham*, 383 U.S. at 17. The person of ordinary skill in the art is a hypothetical person who knows the relevant art. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors in determining the level of ordinary skill in the art include the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* One or more factors may predominate. *Id.*

Petitioner contends as follows:

The subject matter of the ’612 patent generally relates to the technical field of audio/video conferencing systems. A Person of Ordinary Skill in the Art (“POSITA”) in March 2003

would have had a working knowledge of the conferencing art. Ex. _1003, ¶27. A POSITA would have had a bachelor’s degree in computer science, computer engineering, or an equivalent, and three or more years of professional experience relating to conferencing systems in packet-based networks, or without said professional experience, further education relating to conferencing systems in packet-based networks. *Id.* ¶¶24–27.

Pet. 7.

Based on a review of the preliminary record, for purposes of the Institution Decision, we adopt Petitioner’s proposed level of ordinary skill in the art because it is consistent with the evidence of record, including the asserted prior art and ’612 patent specification, except that we delete the qualifier “or more” in the phrase “three or more years” to eliminate vagueness as to the stated amount of professional experience.

C. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under this standard, claim terms have their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14.

Petitioner relies on the ordinary and customary meaning under *Phillips*. Pet. 7–8. At this stage, it is not necessary to construe explicitly any claim terms, because any explicit construction would not alter the outcome. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we need only construe 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))).

D. Obviousness, Claims 19–21 and 25–27

Petitioner asserts that claims 19–21 and 25–27 would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Knappe, Elliott, VPN Textbook, and Hendricks. Pet. 4.

1. Knappe (Ex. 1006)

Knappe “relates generally to the field of multiparty communications.” Ex. 1006, 1:8–9. Knappe’s “method includes processing the plurality of participant voice streams and the moderator voice stream such that the intelligibility of the moderator voice stream is enhanced relative to at least one of the participant voice streams.” *Id.* at 2:7–11.

Knappe’s Figure 1 follows:

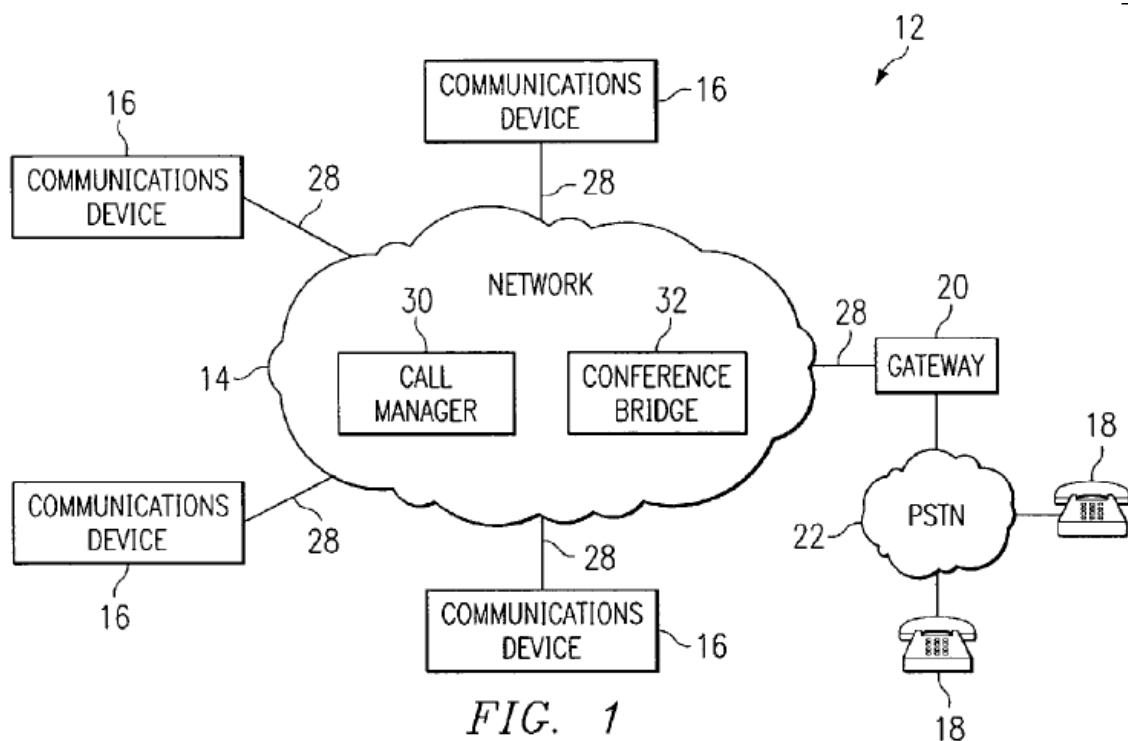


Figure 1 is a block diagram of Knappe’s communication system 12, which “includes a network 14 connecting a plurality of communication devices

16 to each other and to standard analog telephones 18 through a gateway 20 and the public switched telephone network (PSTN) 22.” Ex. 1006, 3:41–45. “[C]all manager 30 controls the conference bridge 32 to set up, process and tear down conference calls and other multiparty communication sessions.” *Id.* at 5:29–31. “The call manager 30 and the conference bridge 32 may be located in a central facility or have their functionality distributed across and/or at the periphery of the network 14.” *Id.* at 4:30–33.

Under control of call manager 30, “conference bridge 32 provides real-time multiparty audio connections between three or more participants.” Ex. 1006, 5:42–44. “[T]he conference bridge 32 receives media from participating devices 16 and, using suitable signal processing techniques, mixes the media to produce conference signals.” *Id.* at 4:63–66. In other words, “[d]uring the multiparty communications sessions, participants are connected and stream media through the conference bridge 32.” *Id.* at 5:31–33.

“In accordance with a particular embodiment, network 14 is the Internet, a wide area network (WAN), a local area network (LAN) or other suitable packet-switched network.” Ex. 1006, 3:50–53. Communication devices 16 include all types of IP (internet protocol) or other digital telephones, computers, PDAs, etc., and also include a “telephone 18 and gateway 20 combination capable of communicating real-time audio, video and/or other information over the network 14.” *Id.* at 3:62–4:2. “[C]ommunication devices 16 also communicate control information with the network 14 to control call setup, teardown and processing as well as call services.” *Id.* at 4:2–4. “[M]ultiparty communications sessions includ[e] real-time audio streams and/or video streams.” *Id.* at 5:46–47.

Knappe's Figure 2 follows:

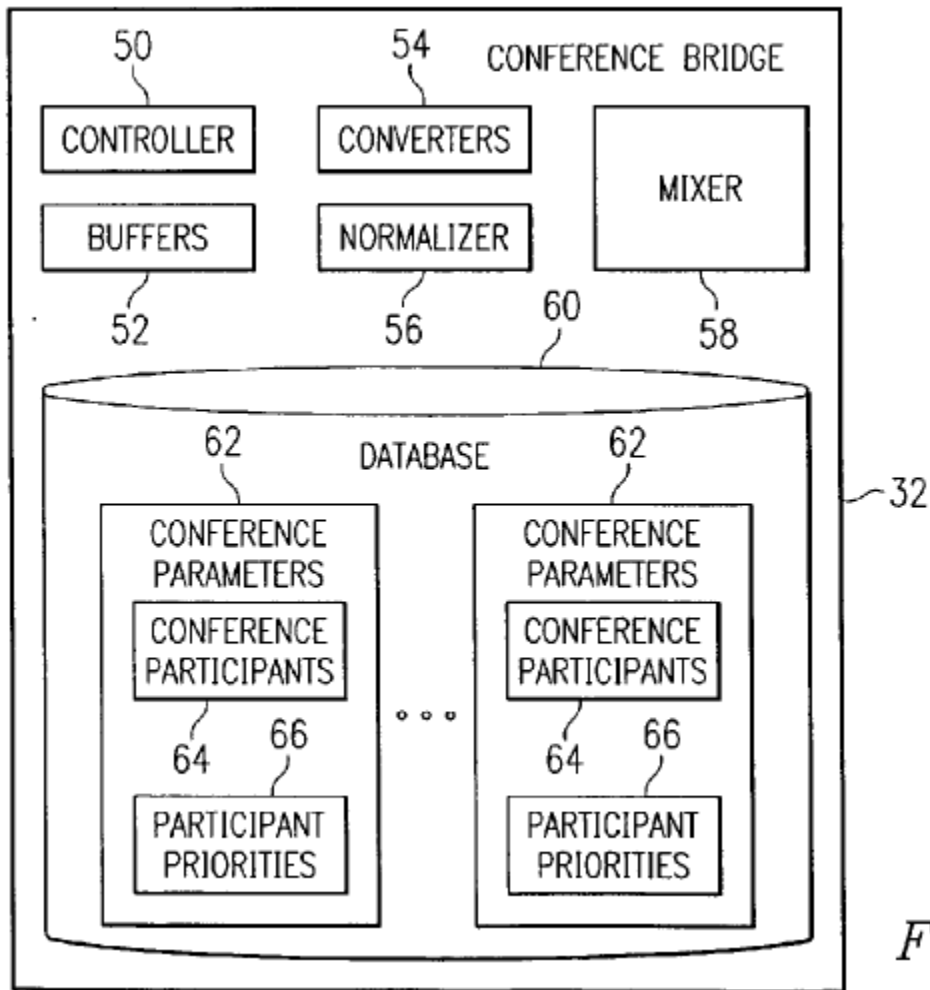


FIG. 2

As illustrated in Figure 2, Knappe's conference bridge 32 includes mixer 58. "[M]ixer 58 includes a plurality of summers or other suitable signal processing resources each operable to sum, add or otherwise combine a plurality of input streams into conference output streams for participants to a conference call." Ex. 1006, 6:33–37.

Knappe's Figure 3 follows:

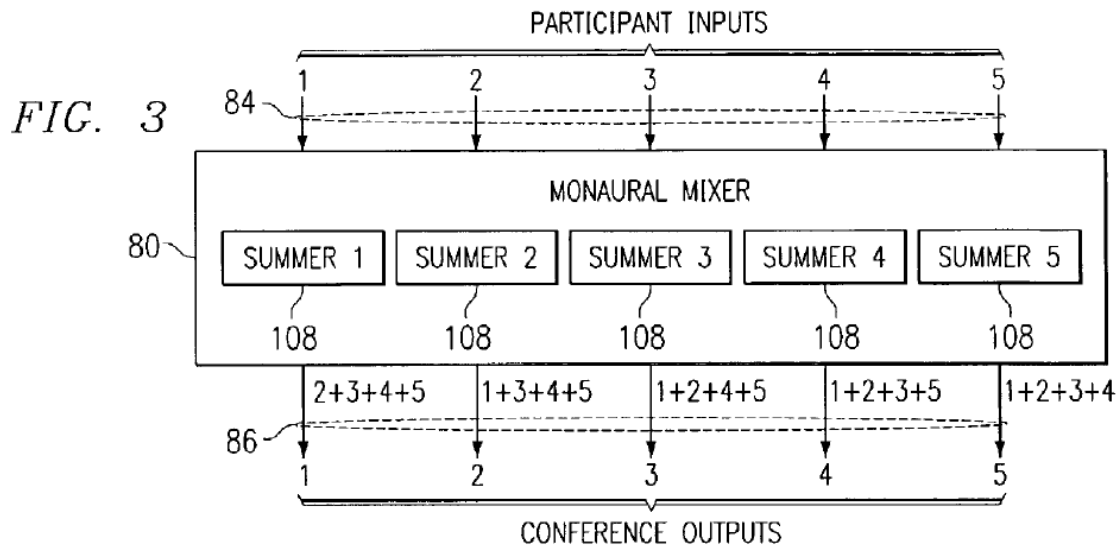


Figure 3 above represents an embodiment of Knappe's mixer 58 (*supra* Figure 2) in the form of monaural mixer 80. Ex. 1006, 6:52–55. “Monaural mixer 80 receives participant input streams 84 and combines the streams in summers 82 to generate conference output streams 86 for each participant to a conference call.” *Id.* at 6:59–62. In one embodiment, a summer 82/108 assigned to each participant “receives audio input streams from each other participant to the conference call,” and “combines the audio input streams to generate a conference output stream for delivery to the participant.” *Id.* at 6:63–67.⁷

⁷ Knappe refers to “summer 108” in connection with Figure 7 and “summers 82” in connection with Figure 3, although Figure 3 shows summers 108. Compare Ex. 1006, 8:24–26, with 6:59–63.

2. *Elliott (Ex. 1007)*

Elliott relates to a “method of communicating with a plurality of remote parties allows for multi-media collaboration.” Ex. 1007, code (57). “Multi-media collaboration refers to the use of more than one media stream (e.g.: voice, fax, data, video, etc.) used in collaboration with more than one party.” *Id.* at 2:66–3:1.

Elliott’s Figure 1 follows:

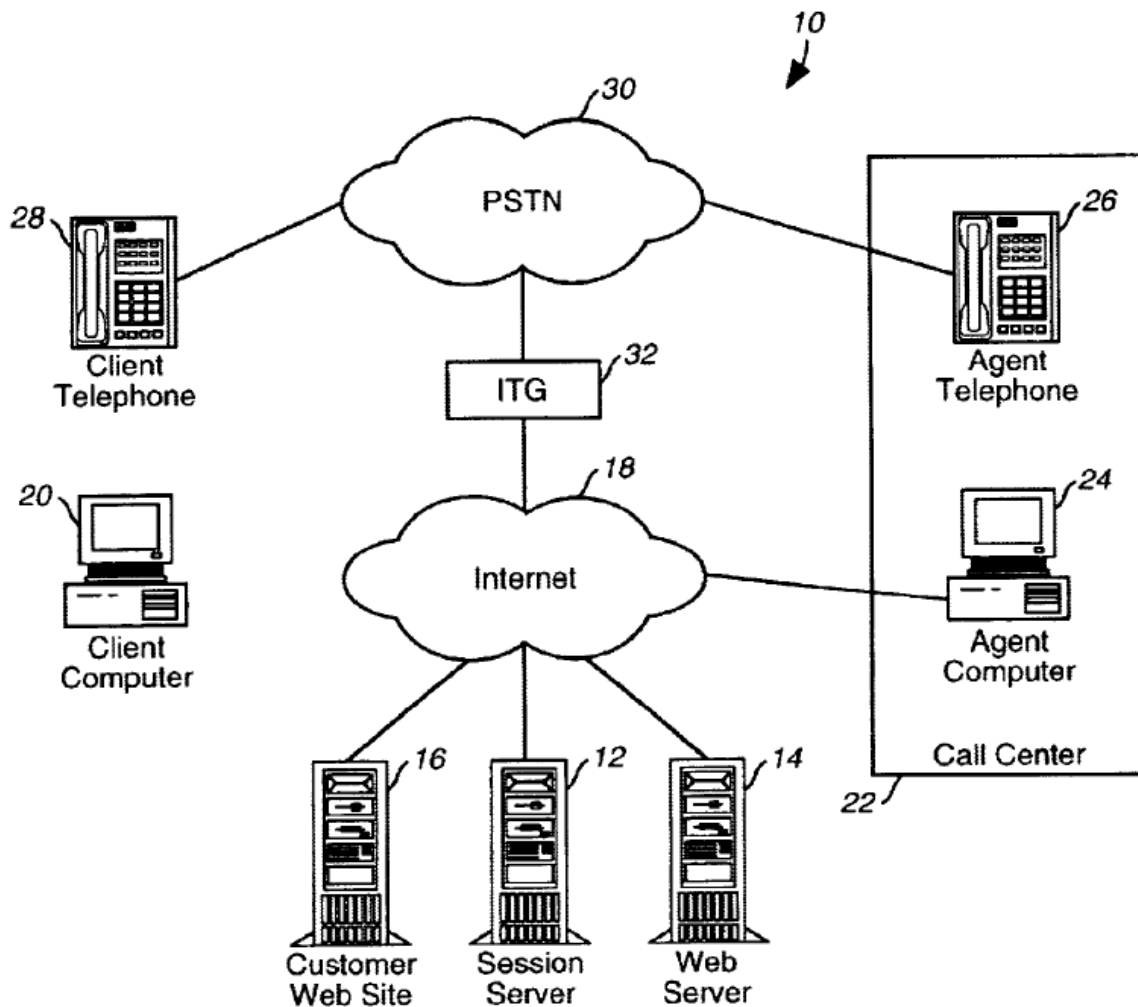


FIG. 1

Figure 1 illustrates network architecture 10 for using shared network resources by client computers 20 and client telephone 28 connected by

network 18, including “customer web site 16,” “session server 12[,] and a web server 14 to provide services for a plurality parties such as call centers, agents, and clients.” Ex. 1007, 3:57–63. “The ‘client’ is the party or parties which desire communication with the call center 22.” *Id.* at 4:53–54.

“[C]lient computer 20 could be connected to a corporate intranet which includes a gateway to the Internet.” *Id.* at 5:31–33. “Client computer 20 may also be equipped with other software such as Internet telephone software, for placing Internet telephony calls. A client may also have a traditional telephone 28 for placing calls to call center agents over the public switched telephone network (PSTN) 30.” *Id.* at 5:34–39.

Network 18 includes a variety of networks, including “the public Internet,” “an exemplary Internet Protocol-based (IP-based) network 18 for multi-media collaboration.” Ex. 1007, 4:10–12. Elliott describes the following exemplary networks or combinations thereof:

Network 18 could also comprise other IP-based networks as well as other networks. For example, network 18 could comprise an internet which is not connected to the public Internet. In this context, an “internet” (lowercase “i”) is any collection of separate physical networks, interconnected by a common protocol, to form a single logical network. An internet would preferably, but not necessary use Internet Protocol. An internet which is owned by a single entity sometimes referred to as an intranet. Network 18 can comprise an intranet, which is or is not connected to the Internet. For example, network 18 can be either a public or a carrier supported virtual private network (VPN) or local area network (LAN) which uses IP or IP-tunneling. Other protocols can alternatively be utilized.

Id. at 4:20–24.

3. *VPN Textbook (Ex. 1010)*

VPN Textbook generally describes VPN (virtual private network) topologies for different networks. Ex. 1010, 115 (Chapter 7 heading page),

129.⁸ VPN Textbook notes that “VPN is a concept that is more than 10-years old and is well known in the service provider market space.” *Id.* at 115.

According to VPN Textbook, “[t]he most commonly encountered topology is a hub-and-spoke topology, where a number of remote offices (spokes) are connected to a central site (hub), similar to the setup in Figure 7-10.” Ex. 1010, 129.

Figure 7-10 follows:

Figure 7-10 *Hub-and-spoke Topology*

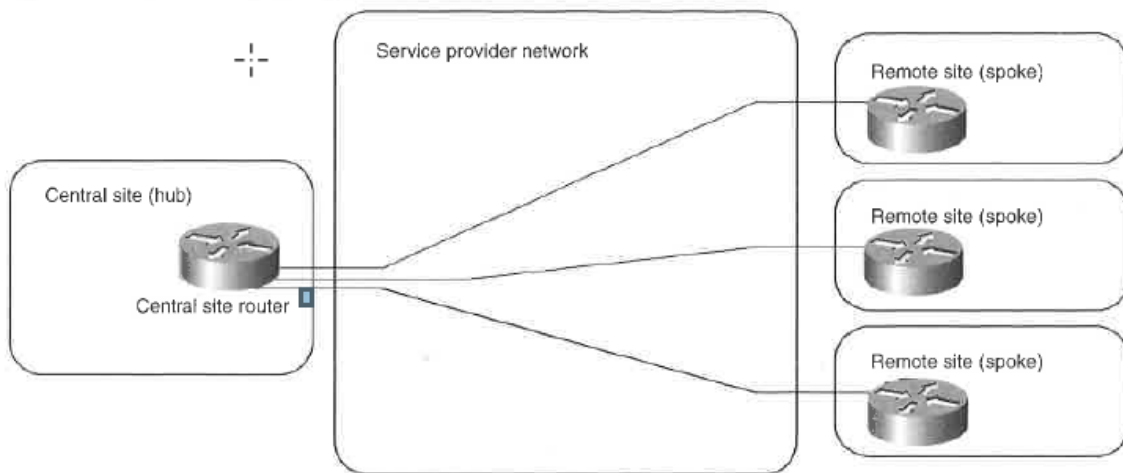


Figure 7-10 shows a central site (hub) router connected in a hub-and-spoke topology over service provider network lines secured by VPN technology and terminated at three different remote sites (spokes). *See id.* at 129–30. VPN customers often choose “the hub-and-spoke technology for cost or complexity reasons.” *Id.* at 129.

VPN Textbook states that “it’s no surprise that more and more business-to-business traffic takes place over the Internet.” Ex. 1010, 119.

⁸ Following Petitioner’s usage, we cite the original page numbers at the top left and right corners of VPN Textbook’s pages rather than the page numbers added by Petitioner in the lower right corner of the pages.

Accordingly, the security solution involves using “encryption or one-time passwords” on an “end-to-end basis,” for example as depicted below in Figure 7-3 (*id.*):

Figure 7-3 *Typical Extranet Setup*

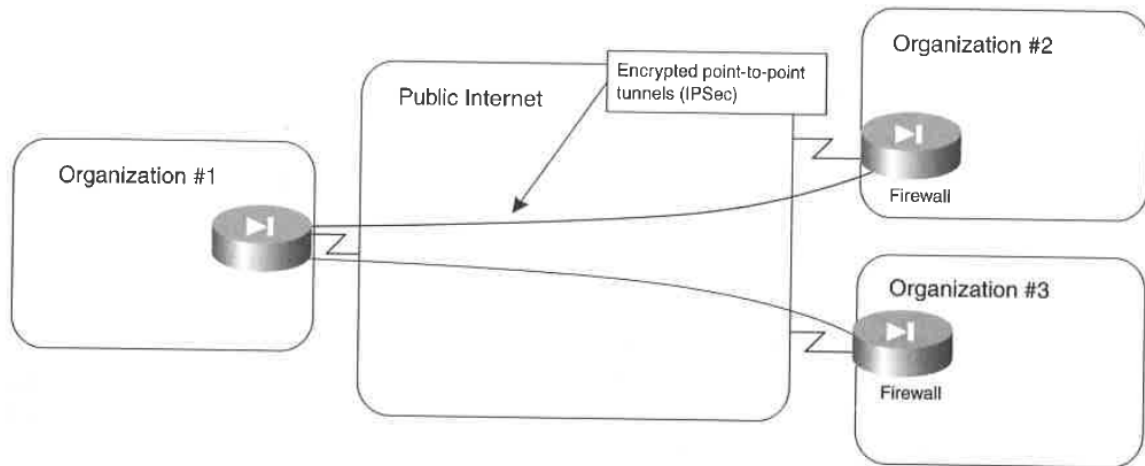


Figure 7-3 above illustrates a typical solution for Internet security by encrypting packets in point-to-point tunnels over the Internet for communications between organizations 1 and 2, and 1 and 3, with firewalls protecting the networks within organizations 2 and 3. *See id.*

4. *Hendricks (Ex. 1040)*

Hendricks relates to a system for performing conference calls for multiple parties, “preferably video conference calls.” Ex. 1040, code (57).

The system provides for “duplex calls,” as follows:

one or a combination of several types of media (e.g., voice only or voice plus video and/or other media such as data, programs, etc.), and includes one-way broadcast calls . . . as well as full duplex calls or mixed media combinations of one-way broadcast and full duplex (e.g., broadcast video from one party and shared return audio from all parties).

Id. at 3:6–10.

5. *Claim 19*

The preamble of claim 19 recites “[a] method for conducting a secure multi-participant conference call including full duplex audio, the method comprising.” Petitioner relies on Knappe, or the combined teachings of Knappe, Elliott, and Hendricks to address the preamble. Pet. 27–29.

First, Petitioner quotes Knappe as disclosing “multiparty communications, and more particularly [] a method and system for improving the intelligibility of a moderator during a multiparty communication session,” wherein “[s]uch communication networks also allow multiple people to participate in . . . a ‘conference call.’” Pet. 27 (alterations in original) (quoting Ex. 1006, 1:8–27). Petitioner relies on Knappe’s Figure 1 (*see supra* § III.D.1) and contends that it “shows ‘communication devices 16’ that ‘comprise IP or other digital telephones . . . cell or other mobile telephones or handset or any other device or set of devices such as the telephone 18 and gateway 20 combination capable of communicating real-time audio, video and/or other information over the network 14.’” Pet. 28 (alteration in original) (quoting Ex. 1006, 3:62–4:1).

Second, Petitioner contends that Knappe implies that its conference calls include full-duplex audio, because “Knappe teaches that the conference participants communicate with each other through conference bridge 32, which mixes the audio from other participants while excluding the audio of the participant that receives the mixed audio.” Pet. 28 (citing Ex. 1006, 6:59–7:11 (“During normal operation, each participant receives the audio input of each other participant. Thus, for example, the conference output stream of participant 1 includes the audio inputs of participants 2–5.”));

Ex. 1003 ¶¶ 387–388).⁹ Based on Knappe’s teachings, Petitioner contends that “[a] POSITA would recognize this simultaneous transmission and reception as a conference call that includes full-duplex audio.” *Id.* at 29 (citing Ex. 1003 ¶¶ 387–388).

Third, Petitioner relies on Hendricks as teaching “full duplex calls” and “full duplex interconnectivity” for conference calls. Pet. 29 (quoting Ex. 1040, 3:8, 17:21; citing Ex. 1040, 27:12–19; Ex. 1003 ¶¶ 197, 389). Therefore, according to Petitioner, “[i]t would have been obvious for a POSITA to utilize full duplex audio in Knappe’s system (as Hendricks teaches) because doing so would provide the participants of Knappe’s communication devices 16 and telephones 18 a more natural way to communicate with each other during the conference.” *Id.* (citing Ex. 1003 ¶¶ 371–378, 390; Ex. 1041, 1:20–39; Ex. 1042, 7:14–34).

Finally, addressing the “secure” aspect of the preamble, Petitioner contends that “Elliott supplements Knappe and teaches using VPN tunneling for securing communications over a public network like the Internet.” Pet. 28 (citing Ex. 1007, 4:6–12; Ex. 1003 ¶¶ 194–195, 353–361, 386). Therefore, Petitioner contends “[i]t would have been obvious to use in Knappe the VPN tunneling as taught in Elliott to secure communications over Knappe’s Internet network 14.” *Id.* at 28 (citing Ex. 1003 ¶¶ 194–195, 353–361, 386).

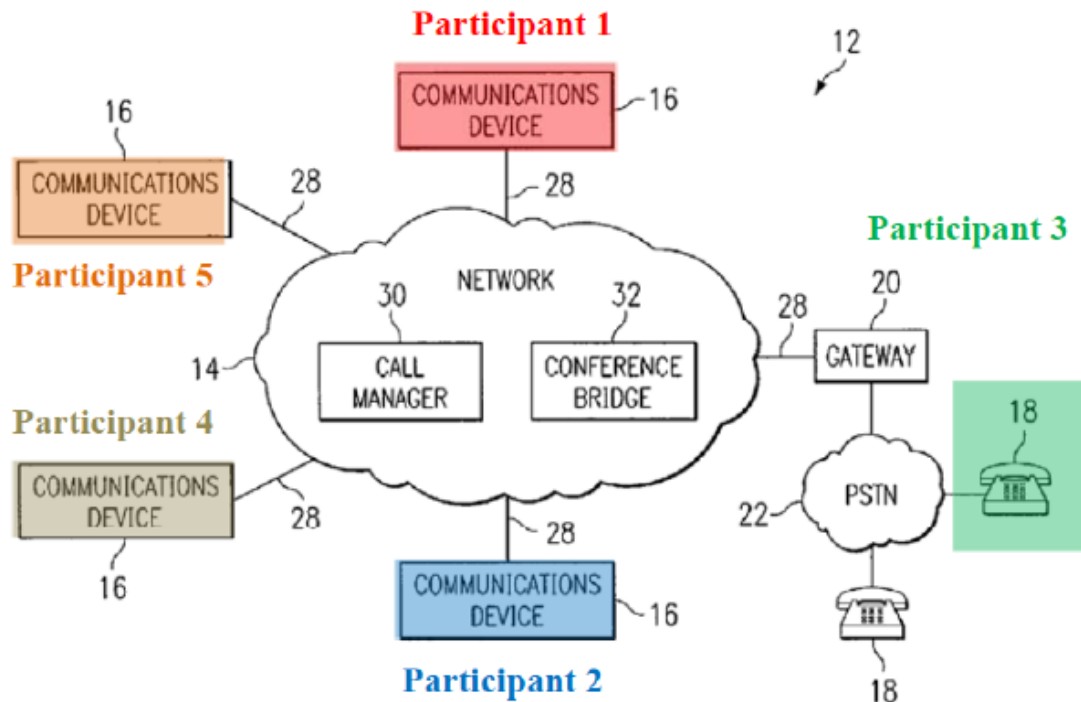
After a review of the preliminary record as summarized above, we determine that Petitioner’s showing for the preamble (even if it is

⁹ See participants in Petitioner’s annotated versions of Knappe’s Figures 1 and 3 below.

limiting) based on the combined teachings of Knappe, Elliott, and Hendricks is sufficient for institution purposes.

Limitations 19.1.1 and 19.1.2 recite “[19.1.1] receiving first audio data, first video data, and first collaboration data at a server from a first remote client [19.1.2] through a first Virtual Private Network (VPN) tunnel.” Petitioner relies on the combined teachings of Knapp and Elliott to address limitation 19.1.1 and Knapp, Elliott, and VPN Textbook to address limitation 19.1.2. Pet. 30–40. Limitations 19.2.1 and 19.2.2 recite “[19.2.1] receiving second audio data at the server from a second remote client [19.2.2] through a second VPN tunnel.” Petitioner relies on Knapp to address limitation 19.1.1 and Knapp, Elliott, and VPN Textbook to address limitation 19.2.2. *Id.* at 40–44.

Petitioner annotates Knappe’s Figure 1 to illustrate its showing, as follows (Pet. 34):



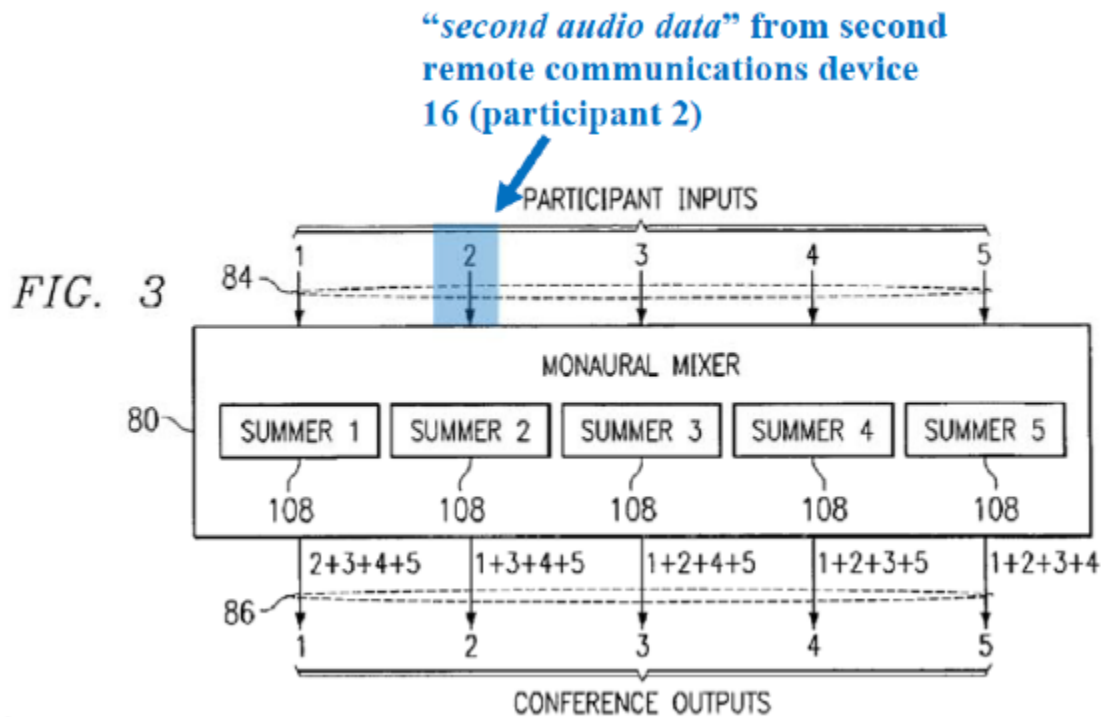
Designating participant 1 and participant 2 at red and blue communications devices 16, respectively, in its annotated version of Knappe’s Figure 1, Petitioner reads the claimed “first remote client” of limitation 19.1.1 and “second remote client” of limitation 19.2.1 onto Knappe’s communication devices 16. Pet. 34, 41. Petitioner contends that Knappe’s “call manager 30 and conference bridge 32 provide a conferencing service where [remote] ‘participants are connected and stream media through the conference bridge 32.’” *Id.* at 30 (quoting Ex. 1006, 5:31–44; citing Ex. 1003 ¶¶ 393–394).

To further support its showing, Petitioner points out that “Knappe’s conference call manager 30 provides ‘multiparty communications and/or other suitable services for the communications devices 16,’” and “conference bridge 32 ‘provides conference call and other suitable audio, video, and/or real-time multiparty communication sessions between communication devices 16.’” Pet. 30 (quoting Ex. 1006, 4:50–54, 4:58–61;

citing Ex. 1003 ¶¶ 393–394). Based on these teachings and related teachings describing Knappe’s Figure 1, Petitioner reads the claimed “server” onto “Knappe’s call manager 30, either alone or in combination with the conference bridge 32, . . . because it (and they collectively) provide a conference call service to communication devices 16 and PSTN telephones 18.” *Id.* at 30–31 (citing Ex. 1003 ¶ 395); *see also id.* at 44 (“[C]onference bridge 32, either alone or together with conference call manager 30, corresponds to the claimed ‘server.’”).

Petitioner also relies on Knappe’s teaching that mixer 80 receives and processes inputs from participants at remote devices 16. *See* Pet. 32–34, 41–43, Ex. 1006, Fig. 1, Fig. 2. Petitioner explains that Knappe’s mixer 80 is part of conference bridge 32 (i.e., part of the claimed “server”). *Id.* at 32 (citing Ex. 1006, 1:29–41; Ex. 1003 ¶¶ 398–400).

For example, regarding limitation 19.1.2, Petitioner reproduces and annotates Knappe's Figure 3, as follows:



Petitioner explains that in Figure 3, “Knappe’s mixer 80 receives input audio from participant 2 [(blue)], which corresponds to the second remote communications device 16 (*“second remote client”*).” Pet. 42 (citing Ex. 1006, Fig. 3; Ex. 1003 ¶¶ 426–427). Petitioner provides a similar showing for limitation 19.1.1. *Id.* at 34 (annotating Knappe’s Fig. 3).

Collectively, for limitations 19.1.1 and 19.1.2, Petitioner relies on Knappe’s summers 1 and 2 in mixer 80 of conference bridge 32, asserting that the recited “first remote client” (participant 1) and “second remote client” (participant 2) transmit “first audio data” and “second audio data,” respectively, to the claimed “server” (call manager 30 and/or conference bridge 32, collectively). Pet. 32–34 (citing Ex. 1006, 3:62–4:16, 4:63–64, 6:59–7:11, Figs. 1, 3; Ex. 1003 ¶¶ 398–400, 402), 40–43 (citing Ex. 1006, 3:45–49, 4:58–66; 5:31–33, 6:59–7:11, Figs. 1, 3; Ex. 1003 ¶¶ 425–429).

Further regarding the “first remote client” and “second remote client” as recited in limitations 19.1.1 and 19.1.2, respectively, Petitioner contends that Knappe contemplates remote clients because “Knappe’s Internet transports ‘packets containing data that represents audible sounds from one location to another,’” and “Knappe also refers to ‘minimizing travel expenses’ and how its conferencing techniques improve over ‘a meeting with persons physically present in the same location.’” Pet. 31 (quoting Ex. 1006, 1:18–21, 1:42–44).

Regarding receiving “first audio data, first video data, and first collaboration data at a server” as limitation 19.1.1 recites, Petitioner explains that Knappe “teaches that ‘conference bridge 32 receives media from participating devices 16,’ which Knappe discloses as ‘capable of communicating real-time audio, video, and/or other information over the network 14.’” Pet. 32 (quoting Ex. 1006, 4:63–64, 3:62–41). Petitioner similarly asserts that “Knappe teaches that ‘[d]uring the multiparty communications sessions, participants are connected and stream media through the conference bridge 32,’ where the media includes ‘audio, video, voice, data and other suitable types of real-time . . . traffic between source and destination endpoints.’” *Id.* at 36 (quoting Ex. 1006, 3:26–29, 5:31–33). Therefore, Petitioner asserts that “a POSITA would have understood Knappe’s conference bridge 32 to receive ‘audio, video, and/or other information’ and ‘data.’” *Id.* at 32 (citing Ex. 1003 ¶¶ 398–400; Ex. 1006, 1:29–41). Petitioner also asserts that “a POSITA would have understood” that Knappe’s real-time traffic or media “is used for collaboration,” and that Knappe teaches “*receiving first audio data, first video data, and first collaboration data.*” *Id.* at 35.

Further regarding the claimed “collaboration data” as recited in limitation 19.1.1, Petitioner asserts that “a POSITA would have understood that Knappe contemplated that the real-time ‘data’ transmitted during conferencing . . . include well-known collaboration data, such as T.120 standard data.” Pet. 35 (citing Ex. 1006, 3:27–29, 3:62–4:1, 5:45–48; Ex. 1003 ¶ 405). To support or supplement this assertion, Petitioner asserts that “Elliott describes ‘[m]ulti-media collaboration services’ allowing for the ‘exchange [of] information in a conference setting.’” *Id.* (quoting Ex. 1007, 1:40–44). Petitioner further asserts “that Elliott explains such services ‘include collaborative Web browsing, audio conferencing, video conferencing, and application sharing’ using ‘communication and application protocols’ defined in the ‘T.120 standard.’” *Id.* (quoting Ex. 1007, 1:40–44, 6:46–54, 5:49–61). In other words, according to Petitioner, “Elliott’s teaching of collaboration services, which exchange data using the T.120 standard, discloses a multimedia conferencing stream including ‘collaboration data.’” *Id.* (citing Ex. 1003 ¶¶ 254–255, 406–407).

Noting that Knappe’s communication devices 16 include personal computers, Petitioner contends that “it would have been obvious to a POSITA that Knappe’s ‘other information’ would include collaboration data as Elliott teaches (e.g., application sharing data, web browsing data, and other collaboration data per the T.120 standard).” Pet. 35–36 (citing Ex. 1003 ¶ 408). Petitioner explains that “[i]ncluding Elliott’s collaboration data in the additional data exchanged by Knappe’s communication devices would allow different ways for the participants to collaborate thereby enhancing the effectiveness of the collaboration among the participants.” *Id.* at 36 (citing Ex. 1003 ¶¶ 342–361, 408).

Summarizing with respect to limitation 19.1.1, Petitioner contends as follows:

Knappe teaches that “[d]uring the multiparty communications sessions, participants are connected and stream media through the conference bridge 32,” where the media includes “audio, video, voice, data and other suitable types of real-time . . . traffic between source and destination endpoints.” Ex_1006, 3:26–29, 5:31–33. Accordingly, it would have been obvious to a POSITA that in the combination, conference bridge 32 would receive the audio, video, and data (such as collaboration data per Elliott) from each participant and distribute the mixed data (including audio, video, and collaboration data) to each participant. Ex_1003 ¶409. Thus, the prior art teaches that that call manager 30 and conference bridge 32 provide conference services, including receiving audio, video, and data (e.g., collaboration data such as web browsing data, application sharing data, and other collaboration data) from a first remote communications device 16, which renders this limitation obvious. *Id.* ¶410.

Pet. 36–37. This summary, which refers to “each participant” in Knappe, also applies to the recited “second audio data” and “second remote client” (Knappe’s participant 2) in limitation 19.2.1, as Petitioner relies partly on its showing for limitation 19.1.1 to address 19.2.1. *See id.* at 40–43.

Regarding the similar VPN recitations of limitation 19.1.2 (“receiving first audio data, first video data, and first collaboration data at a server from a first remote client [19.1.2] through a first Virtual Private Network (VPN) tunnel”) and limitation 19.2.2 (“receiving second audio data at the server from a second remote client [19.2.2] through a second VPN tunnel”), Petitioner annotates VPN Textbook’s Figure 7-10, as follows (Pet. 43):

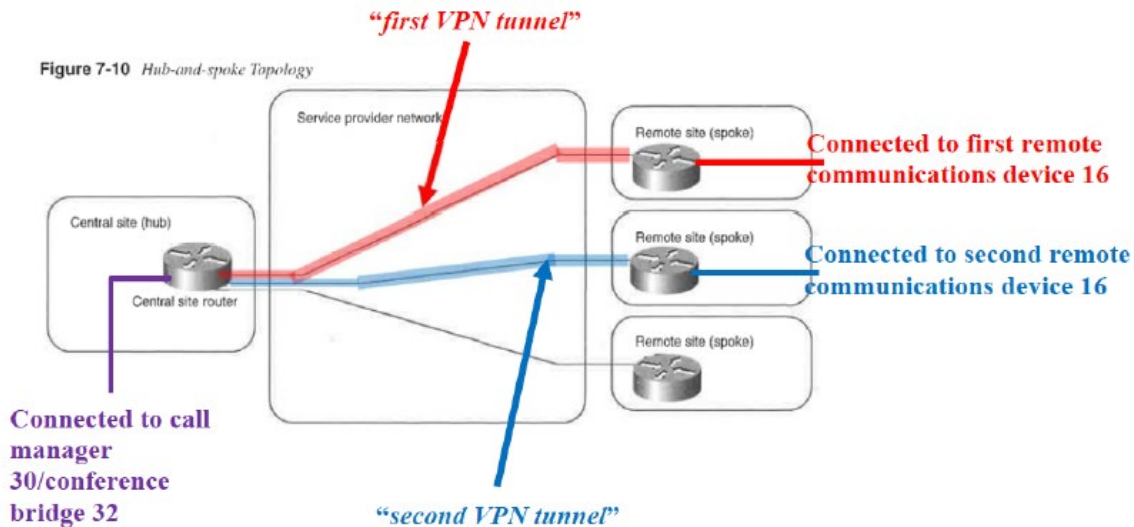


Figure 7-10 as annotated by Petitioner illustrates a first VPN tunnel (red) and a second VPN tunnel (blue) based on the combined VPN teachings of Elliott and VPN Textbook, with the VPN connected in a typical hub-and-spoke arrangement, with Knappe’s call manager and conference bridge 32 (purple) at the central hub router, and Knappe’s first and second remote communication devices 16 (red, blue), connected at the remote ends of the spokes through routers located there. *See* Pet. 37–40 (citing Ex. 1010, 129, Fig. 7; Ex. 1006, 4:30–33, Fig. 1; Ex. 1003 ¶¶ 419–421), 43–44 (citing Ex. 1010, Fig. 7; Ex. 1003 ¶¶ 430–434).

Petitioner contends that using VPN connections as Elliott and VPN Textbook suggest would have been obvious because they provide “secure communications among the connected devices in a cost effective and relatively simple way.” Pet. 44 (citing Ex. 1003 ¶¶ 342–370, 433). Petitioner also points to similarities between Knappe’s topology and VPN Textbook’s hub-and-spoke technology, including Knappe’s centrally located call manager 30 and conference bridge 32 (like a hub) connected to remote devices 16 (like spokes). *See id.* at 38–39 (citing Ex. 1006, 1:42–47, 3:62–4:1, 4:30–31, 6:17–21, Fig. 1; Ex. 1010, Fig. 7-10, 129–30; Ex. 1003 ¶ 419).

Petitioner relies on Elliott’s teaching of “multi-media collaboration,” including “voice, fax, data, video” transmitted over a “virtual private network (VPN)” using “IP or IP-tunneling.” Pet. 37 (quoting Ex. 1007, 2:66–67, 4:31–33; citing Ex. 1003 ¶¶ 234–235, 413). According to Petitioner, based on Elliott’s VPN and IP-tunneling teachings, “it would have been obvious to a POSITA to utilize VPN tunneling when communicating audio, video, and collaboration data between the first remote communication devices 16 and the call manager 30/conference bridge 32, because it would provide Knappe with secure communications as the communications traverse the Internet network 14.” *Id.* (citing Ex. 1003 ¶¶ 234–235, 414).

Petitioner relies on VPN Textbook’s teachings that describe the hub-and-spoke VPN topology as cost effective and simple, as follows:

A POSITA would have understood that each remote site router (spoke) would have one or more network devices connected to it. Ex_1003 ¶¶ 416–417. As explained above, Knappe’s devices may be at different remote locations on the network. *See, e.g.*, discussion at [19.1.1]; Ex_1006, 4:30–33, FIG. 1. Thus, when implementing VPN tunneling in Knappe, per Elliott, it would have been obvious to a POSITA to connect each of Knappe’s devices (which are located at different locations) to a separate remote router (spoke) that is connected to the central router (hub), as the VPN Textbook teaches, because this common topology provides a cost effective and less complex implementation. Ex_1003 ¶ 418; Ex_1010 at 129 (“has nonetheless chosen the hub-and-spoke topology for cost or complexity reasons.”); *see also* Ex_1003 ¶¶ 362–370.

Pet. 38.

After a review of the preliminary record as summarized above, we determine that Petitioner’s showing for limitations 19.1.1, 19.1.2, 19.2.1,

and 19.2.2 based on the combined teachings of Knapp, Elliott and VPN Textbook is sufficient for institution purposes.

Limitation 19.3 recites “receiving third audio data at the server from a Public Switched Telephone Network (PSTN) client through a PSTN gateway.” Petitioner relies on Knappe’s “teach[ing] that ‘telephones 18 communicate standard telephony signals through PSTN 22 to the gateway 20.’” Pet. 44 (quoting Ex. 1006, 4:18–20). Petitioner quotes Knappe as teaching that “[a]t the gateway 20, the signals are converted to IP packets in the VoIP format.” *Id.* (quoting Ex. 1006, 4:20–22). Then, “[c]onference bridge 32 . . . ‘receives media from participating devices 16.’” *Id.* (quoting Ex. 1006, 4:63–66).

Based on these PSTN teachings, Petitioner contends that “a POSITA would have understood that when the PSTN telephone 18 is the originating device, it sends data over gateway 20 which communicates the data to the conference bridge 32, which facilitates the multiparty communications.” Pet. 45 (citing Ex. 1003 ¶¶ 437–438). In other words, Petitioner reads the recited “third audio data” onto data from PSTN telephone 18. Petitioner further relies on Knappe’s mixer 80 of conference bridge 32 (i.e., at the claimed server) as receiving “third audio data” from participant 3 at PSTN telephone 18. *See id.* at 45–56 (citing Ex. 1003 ¶¶ 439, 441–442; Ex. 1006, Fig. 1, Fig. 3).

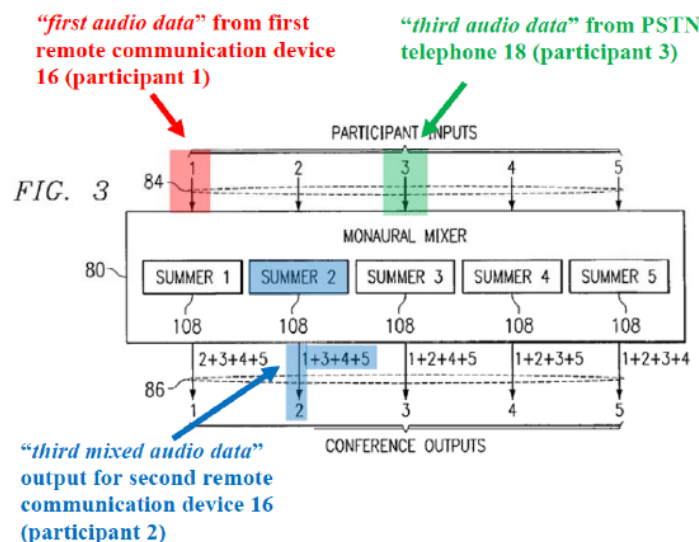
After a review of the preliminary record as summarized above, we determine that Petitioner’s showing for limitation 19.3 based on the teachings of Knappe is sufficient for institution purposes.

Limitations 19.4–19.9 generally recite mixing audio data from two participants and transmitting it to a third participant. Specifically, limitation 19.4 recites “mixing the first audio data with the second audio data into a

first mixed audio data” and limitation 19.7 recites “transmitting the first mixed audio data from the server to the PSTN client through the PSTN gateway.” Limitation 19.5 recites “mixing the second audio data with the third audio data into a second mixed audio data” and limitation 19.8 recites “transmitting the second mixed audio data from the server to the first remote client through the first VPN tunnel.” Limitation 19.6 recites “mixing the first audio data with the third audio data into a third mixed audio data,” and limitation 19.9 recites “transmitting the third mixed audio data from the server to the second remote client through the second VPN tunnel.”

Petitioner relies on Knappe’s mixer 80 to illustrate how Knappe’s server performs mixing and transmitting as claimed in limitations 19.4–19.9.

For example, addressing limitation 19.9, Petitioner annotates Knappe’s Figure 3 as follows:



As annotated by Petitioner, Knappe’s Figure 3 illustrates mixing “first audio data” from participant 1 at first remote communication device 16 (red) with “third mixed audio data” from participant 3 and PSTN telephone 18 (green) at mixer 80’s summer 2 (blue) to create “third mixed audio data” for transmitting to participant 2 at second remote communication device 16

(blue). Pet. 56 (citing Ex. 1006, Fig. 3; Ex. 1003 ¶¶ 472–474). Petitioner explains further that “[w]hen the conference bridge 32 transmits the third mixed audio data to the second remote communications device 16, the data would be sent through the second VPN tunnel that was already established (see discussion at [19.2.2]), which corresponds to ‘*the second VPN tunnel.*’” *Id.* at 57 (citing Ex. 1003 ¶¶ 475–476). Similar to its VPN assertions noted above, Petitioner contends that using the established second VPN tunnel would have been obvious for transmitting the third mixed audio data because the tunnel would “secure” the data in “a cost effective and relatively simple implementation.” *Id.* (citing Ex. 1003 ¶¶ 475–477).

Relying further on Knappe’s mixing, summer, and gateway/PSTN teachings, Petitioner provides sufficient rationale supported by factual underpinnings to address limitations 19.4–19.9 for institution purposes. *See* Pet. 46–57. After a review of the preliminary record as summarized above, we determine that Petitioner’s showing for limitations 19.4–19.9 based on the combined teachings of Knappe, VPN Textbook, and Elliott is sufficient for institution purposes.

Limitation 19.10 recites “transmitting the first video data and the first collaboration data from the se[r]ver to the second remote client.” Relying on its showing for limitation 19.1.1, Petitioner contends that the claimed server reads on Knappe’s conference bridge 32 and/or conference call manager 30 and that “Knappe in combination with Elliott teaches that the conference bridge 32 receives the first video data and the first collaboration data from the first remote communications device 16.” Pet. 58 (citing Ex. 1003 ¶ 489).

Petitioner also contends that Knappe’s “conference bridge 32 transmits video data and collaboration data to the communications devices 16.” Pet. 58 (citing Ex. 1006, 3:24–29 (“[T]he communication system 12 is a

distributed system transmitting audio, video, voice, data and other suitable types of real-time . . . traffic.”)). Similar to its showing for limitation 19.1.1, Petitioner also relies on Knappe’s teaching that “[d]uring the multiparty communications sessions, participants are connected and stream media through the conference bridge 32,” where the media includes “audio, video, voice, data and other suitable types of real-time . . . traffic between source and destination end points.” Pet. 59 (quoting Ex. 1006, 3:26–29, 5:31–33).

Also similar to its showing for limitation 19.1.1, Petitioner contends that “Elliott teaches transmitting collaboration data, such as ‘application sharing’ data, ‘web browsing’ data, and data per the ‘T.120 standard.’” Pet. 58–59 (quoting Ex. 1007, 1:43–44, 6:52, 5:49–50; citing Ex. 1003 ¶¶ 254, 289, 406, 483; Ex. 1007, 1:40–44; 5:49–61, 6:46–54). Based on the teachings in Knappe and Elliott, Petitioner contends that implementing Knappe’s communication devices 16 in the form of Knappe’s personal computers as Knappe teaches, suggests using Elliott’s web browsing and application data with video in view of Knappe’s teaching of streaming different types of data or media through the conference bridge for multiparty communications, where the “output stream for a participant includes the media of all other participants.” *Id.* (quoting Ex. 1006, 5:35–39; citing Ex. 1003 ¶¶ 482, 484). According to Petitioner, “[i]ncluding Elliott’s collaboration data in the additional data exchange by Knappe’s communication devices would allow different ways for the participants to collaborate thereby enhancing the effectiveness of the collaboration among the participants,” including for a participant at the remote second communications device 16. *Id.* at 59 (citing Ex. 1003 ¶¶ 342–361, 484).

After a review of the preliminary record as summarized above, we determine that Petitioner's showing for limitation 19.10 based on the teachings of Knappe and Elliott is sufficient for institution purposes.

As summarized above, the preliminary record supports Petitioner's obviousness showing for purposes of institution. Accordingly, we determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contention that claim 19 would have been obvious over Knappe, Elliott, VPN Textbook, and Hendricks.

6. Dependent claims 20, 21, and 25–27

Claims 20 and 21 depend directly from independent claim 19, and claims 26 and 27 depend directly from independent claim 25. Independent claim 25, an apparatus claim, is materially similar to claim 19, a method claim. Petitioner contends that these claims would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings Knappe, Elliott, VPN Textbook, and Hendricks. *See* Pet. 60–62. In support, Petitioner relies on the testimony of Dr. Houh and provides citations to the reference teachings. *Id.* On this preliminary record, for purposes of institution, Petitioner sufficiently maps the limitations of claims 20, 21, and 25–27 to the asserted prior art and provides reasons sufficiently supported by factual underpinnings to combine the reference teachings with a reasonable expectation of success. *See id.*

Accordingly, we determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contentions that claims 20, 21, and 25–27 would have been obvious based on the combined teachings of Knappe, Elliott, VPN Textbook, and Hendricks.

E. Obviousness, Claims 22–24, 28, and 29

Claims 22–24 depend directly or indirectly from independent claim 19, and claims 28 and 29 depend directly or indirectly from independent claim 25. As noted above, independent claim 25, an apparatus claim, is materially similar to claim 19, a method claim. Petitioner contends that these claims would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings Knappe, Elliott, VPN Textbook, Hendricks, and Drell. *See* Pet. 63–77. In support, Petitioner relies on the testimony of Dr. Houh and provides citations to the reference teachings. *Id.* On this preliminary record, for purposes of institution, Petitioner sufficiently maps the limitations of claims 22–24, 28, and 29 to the asserted prior art and provides reasons sufficiently supported by factual underpinnings to combine the reference teachings with a reasonable expectation of success. *See id.*

Accordingly, we determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contentions that claims 22–24, 28, and 29 would have been obvious based on the combined teachings of Knappe, Elliott, VPN Textbook, Hendricks, and Drell.

IV. CONCLUSION

After considering the evidence and arguments of record, we determine that Petitioner has demonstrated a reasonable likelihood of success with respect to at least one of the challenged claims. Accordingly, an *inter partes* review of all of the claims and all of the grounds presented in the Petition is hereby instituted. *See* 37 C.F.R. § 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claims or any underlying factual or legal issues. The final determination will be based on the record as developed during the *inter partes* review.

V. 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 challenged claims of the '612 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '612 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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