

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.

IPR2023-00380
Patent 9,843,612 B2

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

EASTHOM, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 314

I. INTRODUCTION

Zoho Corporation and Zoho Corporation Pvt., Ltd., Petitioner, filed a Petition (Paper 1, “Pet.”) with a Declaration of Dr. Henry H. Houh requesting an *inter partes* review of claims 10–18 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.

After the Institution Decision (Paper 6, “Inst. Dec.”), Patent Owner filed a Response (Paper 10, “PO Resp.”) with a Declaration of Thomas Dye (Ex. 2001), Petitioner filed a Reply (Paper 13, “Reply”), and Patent Owner filed a Sur-reply (Paper 15). After the briefing, the Board conducted an oral hearing (involving this *inter partes* review and the other five concurrent and related *inter partes* reviews listed below as Related Matters) and entered a Transcript thereof in the record. Paper 25 (“Tr.”).

For the reasons set forth in this Final Written Decision pursuant to 35 U.S.C. § 318(a), we determine that Petitioner demonstrates by a preponderance of evidence that challenged claims 10–18 of the ’612 patent are unpatentable.

II. BACKGROUND

A. *Real Parties in Interest*

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

B. *Related Matters*

Petitioner challenges claims 19–29 of the ’612 patent in IPR2023-00382. IPR2023-00382, 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 Commc'ns, Inc.*, No. 6:21-cv-01289 (W.D. Tex.) (filed Dec. 10, 2021). Pet. 2–3; 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 was the subject of two petitions for *inter partes* review filed by Cisco Systems, Inc. in proceedings that the Board dismissed prior to any institution decision pursuant to settlement. *See* 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:

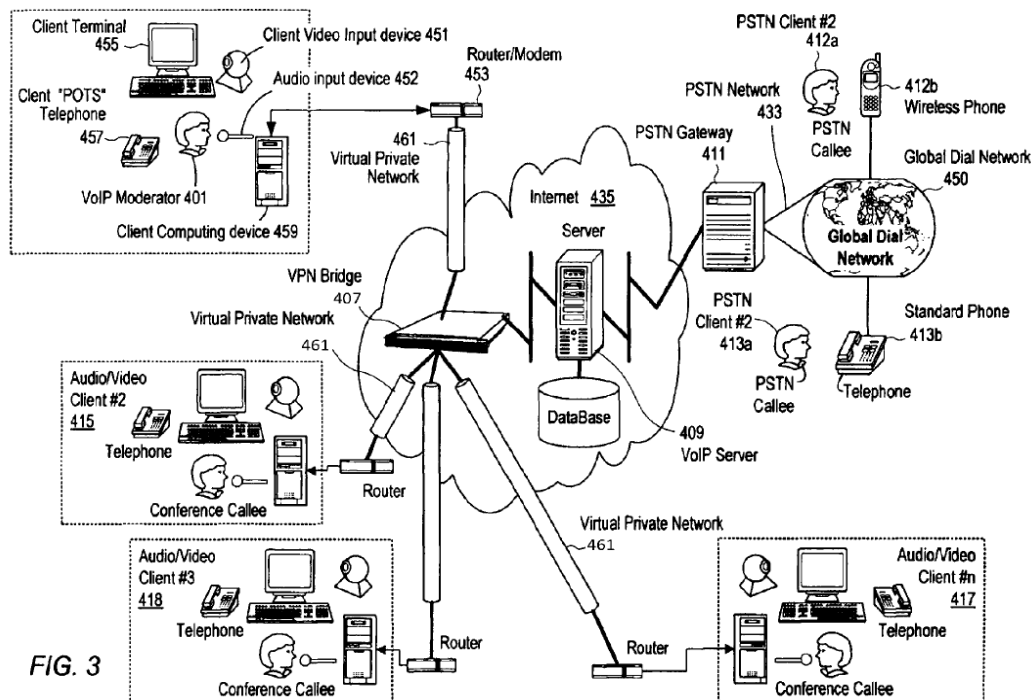


Figure 3 depicts clients, including local moderator client 401, PSTN clients 412, 413, and remote Internet audio video clients 415, 417, and 418.

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 supporting 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” 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 in addition 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 10 is illustrative of the challenged claims, and follows (with bracketed information conforming to Petitioner’s notation):

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

[10.1.1] initiating a dial-in process to establish a connection with a local moderator client [10.1.2] in response to an input from a Public Switched Telephone Network (PSTN) client;

[10.2] receiving first audio data at the local moderator client from the PSTN client through a PSTN gateway;

[10.3.1] receiving second audio data at the local moderator client from a remote client [10.3.2] through a Virtual Private Network (VPN) tunnel;

[10.4.1] transmitting third audio data, first video data, and first collaboration data from the local moderator client to the remote client [10.4.2] through the first VPN tunnel; and

[10.5] transmitting fourth audio data from the local moderator client to the PSTN client through the PSTN gateway.

E. Asserted Ground of Unpatentability

Petitioner contends that claims 10–18 are unpatentable as follows:¹

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
10–18	103(a)	Drell, ² Knappe, ³ Elliott, ⁴ Hendricks, ⁵ Doganata ⁶

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

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.”

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. 7,089,285 B1, issued Aug. 8, 2006, filed Oct. 5, 2000. Ex. 1008.

³ US Patent No. 7,180,997 B2, issued Feb. 20, 2007, filed Sept. 6, 2002. Ex. 1006.

⁴ US Patent No. 6,690,654 B2, issued Feb. 10, 2004, filed Oct. 1, 1998. Ex. 1007.

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

⁶ US Patent No. 6,798,753 B1, issued Sept. 28, 2004, filed Oct. 14, 1999. Ex. 1039.

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.

Patent Owner “believes a POSITA would have a bachelor’s degree in electrical engineering, computer science, or equivalent with two years or more of experience in computing systems development.” PO Resp. 12 (citing Ex. 2001 ¶ 3). The two proposals largely overlap.

Based on a review of the record, 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. However, even if we were to adopt Patent Owner’s proposal, we agree with the parties that the outcome would be the same. *See* Reply 2 (Petitioner arguing that “under either definition the result is the same”); Tr. 49:11–14 (Patent Owner contending that as to defining a “person of ordinary skill in the art,” he “can’t point to a material difference that would change the outcome of this” trial).

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. Patent Owner agrees that the *Phillips* standard applies and cites to a district court claim construction order, which lists thirteen claim constructions for the ’612 patent and patents related thereto. PO

Resp. 12–14 (citing Ex. 2002). Petitioner asserts the district court litigation involved “another party.” *See* Reply 2.

Patent Owner “asserts that the claim terms should be construed consistently with Exhibit 2002, and that the challenged claims clearly do not read on the prior art under the proper claim construction.” PO Resp. 12. Patent Owner does not specify what it deems “the proper claim construction” and does not explain why Petitioner’s showing is not consistent with any particular claim construction from the district court. *See id.* at 12–14.

In any event, even if Exhibit 2002 includes construction of a claim term at issue here, we determine below that Petitioner shows that the challenged claims would have been obvious under constructions consistent to any such terms proposed by Patent Owner.⁷ Moreover, as Petitioner argues, “Patent Owner arguments do not actually rely on any of these claim constructions,” and “only a handful of the listed terms actually appear in the claims of the ’612 patent.” Reply 2. In its Sur-reply, Patent Owner does not direct attention to any dispositive issue that turns on the district court claim construction. Sur-reply 2.

Because any explicit construction would not alter the outcome, an explicit construction for any claim term is not necessary. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 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’”

⁷ As discussed below, Patent Owner presents an argument related to the district court claim construction of “VPN ‘tunnel.’” *See* Ex. 2002, 13.

(quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness, Claims 10–18

Petitioner asserts that claims 10–18 would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Drell, Knappe, Elliott, Hendricks, and Doganata. Pet. 4. Patent Owner asserts, *inter alia*, that Petitioner does not show the obviousness of implementing a VPN tunnel with mixed audio data and also asserts that certain prior art references do not disclose collaboration data and other features, as outlined below.

1. Drell (Ex. 1008)

Drell relates to a “videoconferencing apparatus” that includes “a multi-point (MP) conference application that enables the apparatus to combine and distribute audio and video signals received from a plurality of remote conference endpoints.” Ex. 1008, code (57).

Drell’s Figure 1 follows:

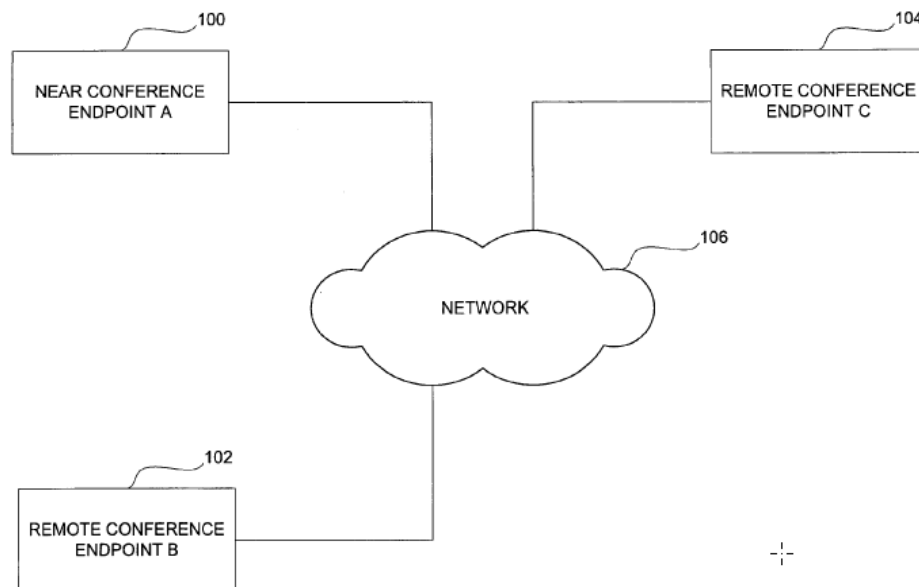


FIG. 1

Figure 1 represents two videoconference users at endpoints B and C connected via network 106 to near conference endpoint A, which includes Drell's "multi-point (MP) conferencing application." *Id.* at 3:4–8. "Remote conference endpoints 102 and 104 may comprise, for example, conventional videoconferencing devices equipped to transmit and receive both video (image) data and audio (speech) data." *Id.* at 3:8–12. "Typically, network 106 will comprise the public switched telephone network (PSTN) or comparable circuit switched network to which each of the conference endpoints is connected by one or more [Integrated Services Digital Network (ISDN)] lines." *Id.* at 3:24–26. "Alternatively, network 106 may comprise a packet switched network, such as the Internet." *Id.* at 3:33–34. Although Figure 1 illustrates "single network 106, . . . the invention contemplates the use of two or more networks (for example, the PSTN and the Internet) to connect conference endpoints utilizing different communication protocols." *Id.* at 3:34–38.

2. *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:

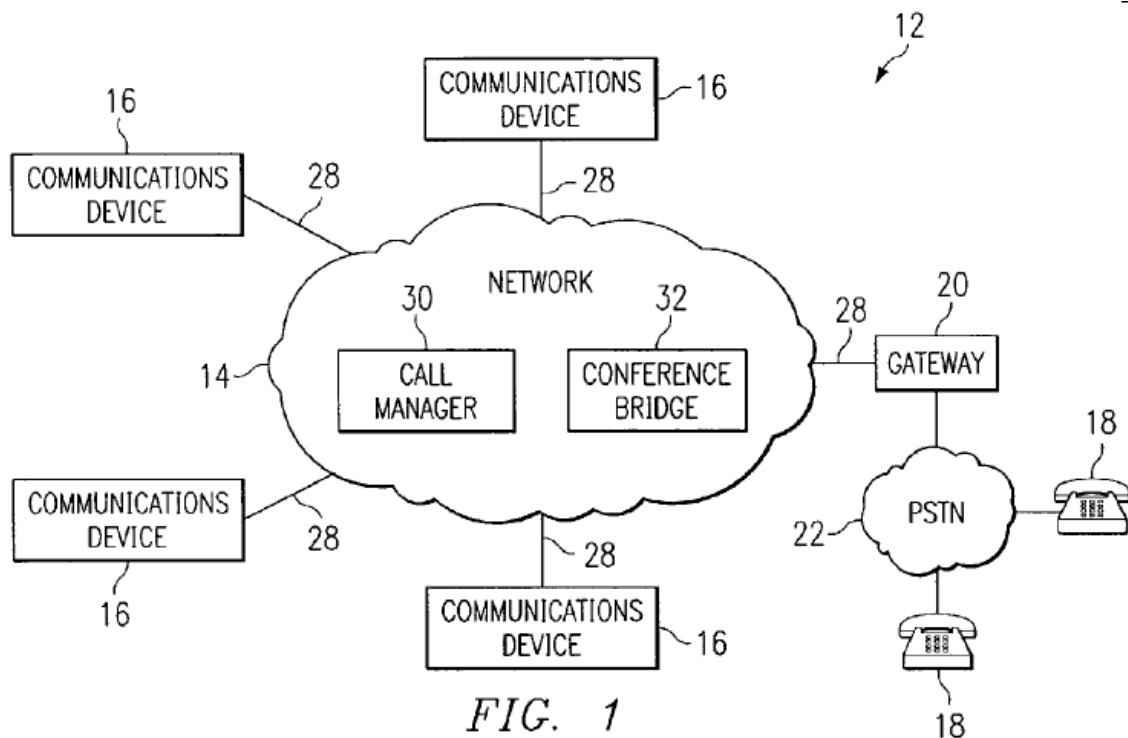


Figure 1 is a block diagram of Knappe's communication system 12, which “includes a network 14 connecting a plurality of communication devices 16 to each other and to standard analog telephones 18 through a gateway 20 and the public switched telephone network (PSTN) 22.” *Id.* at 3:41–45. “[C]all manager 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 3:62–4:1.

“[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 include[e] real-time audio streams and/or video streams.” *Id.* at 5:46–47.

Knappe's Figure 2 follows:

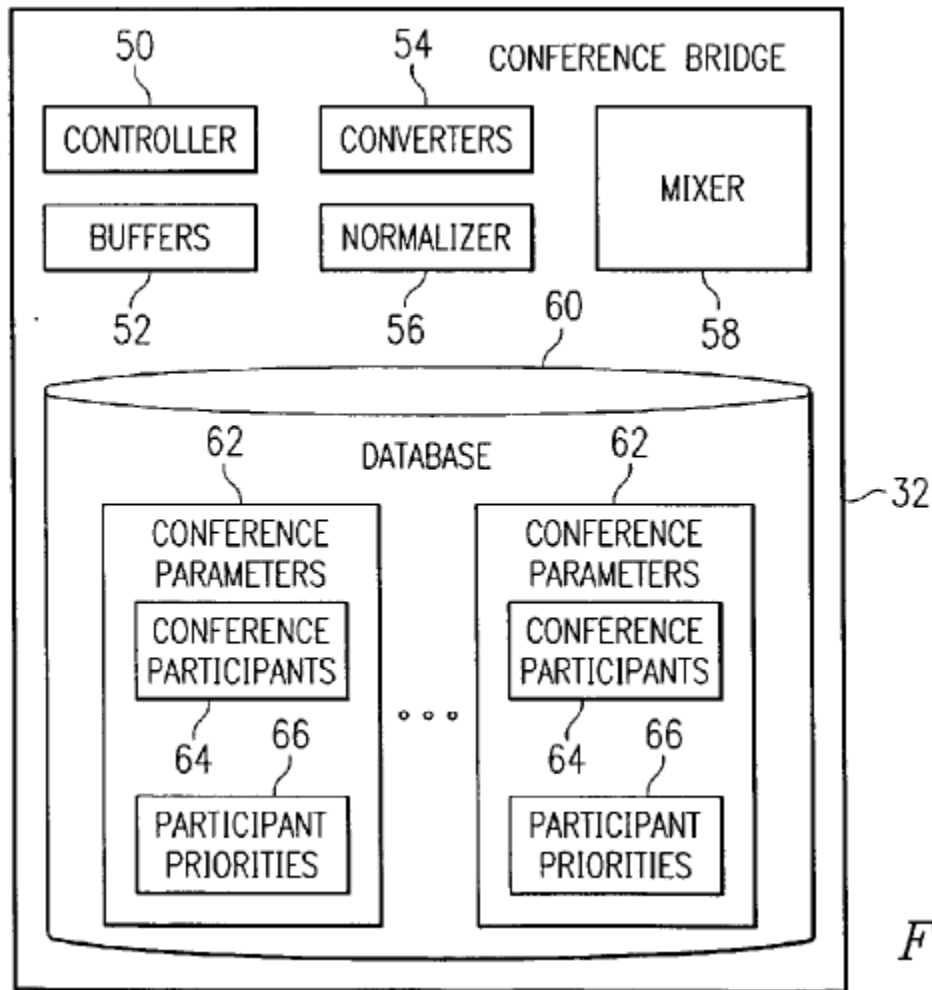


FIG. 2

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." *Id.* at 6:33–37.

Knappe's Figure 3, illustrating the mixer's summers, follows:

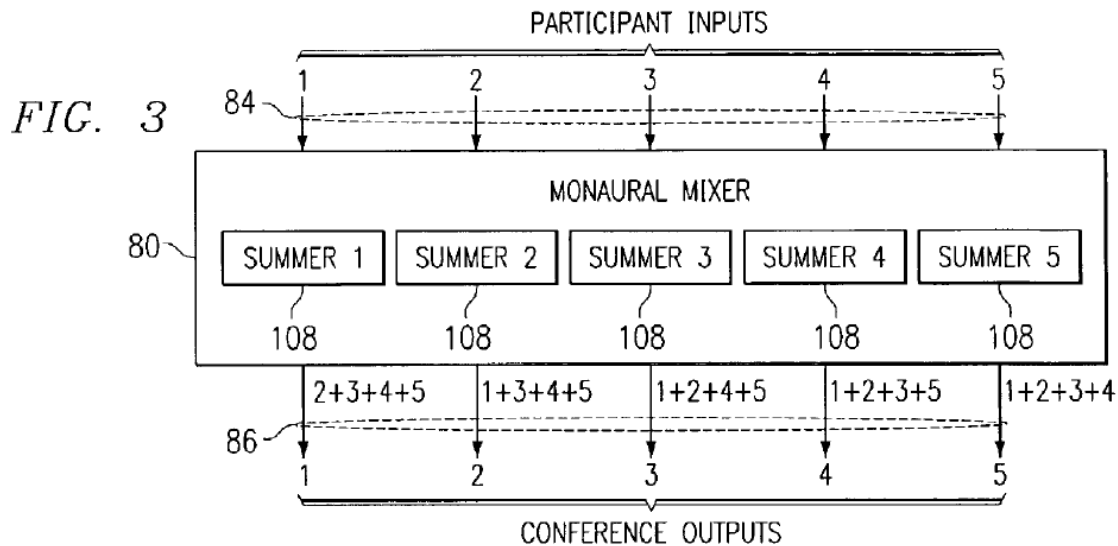


Figure 3 above represents an embodiment of Knappe's mixer 58 (*supra* Figure 2) in the form of monaural mixer 80. *Id.* at 6:52–55. “[M]onaural mixer 80 receives participant input streams 84 and combines the streams in summers 82 to generate conference output streams 86 for each participant to a conference 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 6:63–67.⁸

3. *Elliott (Ex. 1007)*

Elliott's “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,

⁸ Knappe refers to “summer 108” in connection with Figure 7 and “summers 182” in connection with Figure 3, although Figure 3 shows summers 108. Compare Ex. 1006, 8:24–27, with 6:59–63.

fax, data, video, etc.) used in collaboration with more than one party.” *Id.* at 2:66–3:1.

Elliott’s Figure 1 follows:

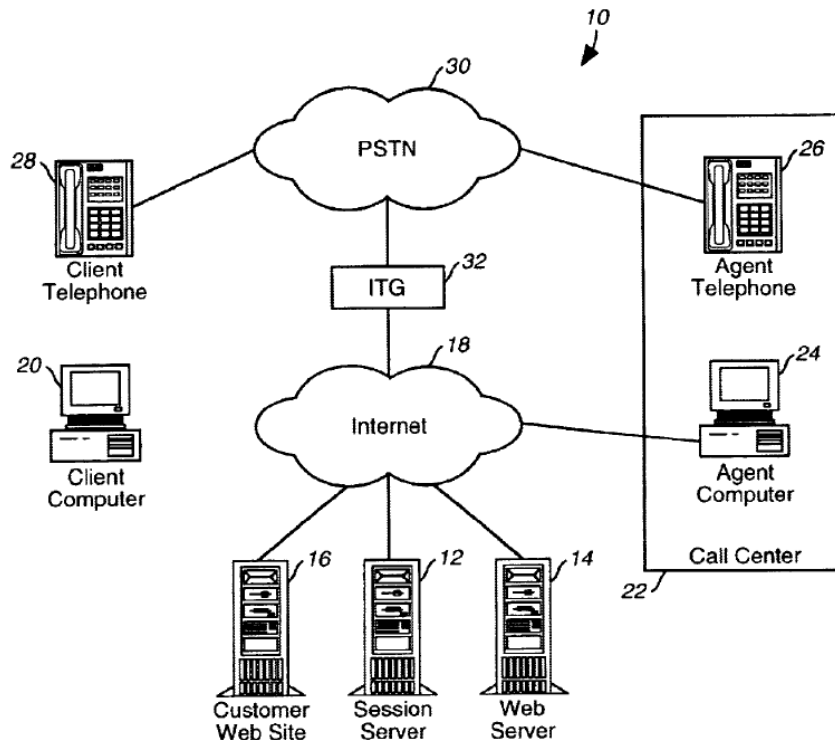


FIG. 1

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 also describes use of a VPN over public Internet network 18 or other network types, as follows:

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.

Elliott generally discloses “[m]ulti-media collaboration.” Ex. 1007, 2:66. “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. Some “examples of multimedia collaboration” include “multi-party conferencing,” and “virtual private networks.” *Id.* at 3:1–6. Elliott’s “system and method of the present invention can also enable services for one-to-many and many-to-many IP-based collaboration.” *Id.* at 3:13–15.

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 includes

a combination of several types of media (e.g., voice only or voice plus video and/or other media such as data, programs, etc.), . . . 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. *Doganata (Ex. 1039)*

Doganata “relates . . . particularly to method for automatically establishing a conference over the Internet from a desktop application.”

Ex. 1039, 1:7–10. Doganata provides dial-in or dial-out options for conference participants, as follows:

The conference service provider receives the telephone numbers of the participants over the established data connection and starts *dialing out* to the participants. . . . In one modification of the invention, the service provider returns a dial-in number and a password, upon request, to be distributed to the participants, so that any users who are unable to provide a dial-out number in advance may *dial in* to the scheduled conference.

Id. at 3:3–12 (emphasis added).

6. *Claim 10*

In summary, method claim 10 requires, *inter alia*, establishing a conference call initiated by a dial-in process and involves three participants, specifically a local moderator client, a PSTN client, and a remote client, wherein the remote client and local moderator client communicate over a VPN tunnel, including with audio, video and collaboration data. The moderator and PSTN client communicate via a PSTN gateway.

a) Preamble 10.P

The preamble of claim 10 recites “[a] method for establishing a secure multi-participant conference call including full duplex audio, the method comprising.” Petitioner relies on the combined teachings of Drell, Elliott, and Hendricks to address the preamble. Pet. 31–34.

First, Petitioner contends that Drell relates to “conferencing systems, and more particularly to a videoconferencing apparatus for use with multi-point conferences.” Pet. 31 (quoting Ex. 1008, 1:16–18). Petitioner relies on Drell’s Figure 1 (*see supra* § III.D.1) and contends that conference endpoint 100 embodies a MP (multi-point) “‘conferencing application . . . coupled to remote conference endpoints 102 and 104’ for communicating both ‘audio and video data’ between the endpoints.” *Id.* at 31–32 (quoting Ex. 1008, 3:4–21). Petitioner also relies on Drell’s “use of two or more networks (for example, the PSTN and the Internet) to connect conference endpoints utilizing different communication protocols.” *Id.* at 32 (quoting Ex. 1008, 3:35–37; citing Ex. 1003 ¶ 192).

Second, Petitioner relies on Drell’s “communication process” as “compris[ing] an . . . **H.323** (packet-based) process,” (Pet. 33 (quoting Ex. 1008, 2:26–28)), so that “[i]t would have been obvious to a POSITA that Drell includes utilizing ‘*full duplex audio*,’ because H.323 was a well-known standard that supported both full-duplex or half-duplex transmission” (*id.* (citing Ex. 1025, 4:61–67 (“H.323 requires that Internet telephones also adhere to H.245 During call initiation, the devices use H.245 to determine proper compression protocols and also whether the phones support full-duplex or half-duplex transmission.”); Ex. 1003 ¶ 196)).

Third, addressing the “secure” aspect of the preamble, Petitioner relies on Elliott as supplementing Drell’s teachings “by showing that it was

known, when using an ‘Internet Protocol-based (IP-based) network 18 for multi-media collaboration,’ to secure the communications using a ‘virtual private network (VPN) . . . which uses IP or IP-tunneling.’” Pet. 32 (quoting Ex. 1007, 4:11–32; citing Ex. 1007, 2:66–32 (“Multi-media collaboration” includes “voice, fax, data, video, etc.”)). Therefore, Petitioner contends, “[i]t would have been obvious . . . to utilize VPN tunneling in Drell’s system for communicating audio and video data over Drell’s Internet network 106 because it would secure communications in Drell’s system.” *Id.* at 32–33 (Ex. 1003 ¶¶ 158–172, 194–195).

Finally, Petitioner relies on Hendricks as supplementing “Drell’s disclosure of ‘*full duplex*,’ teaching ‘full duplex calls’ and ‘full duplex interconnectivity’ for conference calls across PSTN and Internet networks.” Pet. 33 (quoting Ex. 1040, 3:8, 17:21; citing Ex. 1040, 23:13–14, Fig. 7; Ex. 1003 ¶ 197). Therefore, according to Petitioner,

[i]t would have been obvious for a POSITA to utilize full duplex audio in Drell’s system (as Hendricks teaches) because doing so would provide the participants of Drell’s near conference end point 100, remote conference end points 102 and 104, and PSTN conference endpoints a more natural way to communicate with each other during the conference.

Pet. 33 (citing Ex. 1003 ¶¶ 173–180, 198).

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

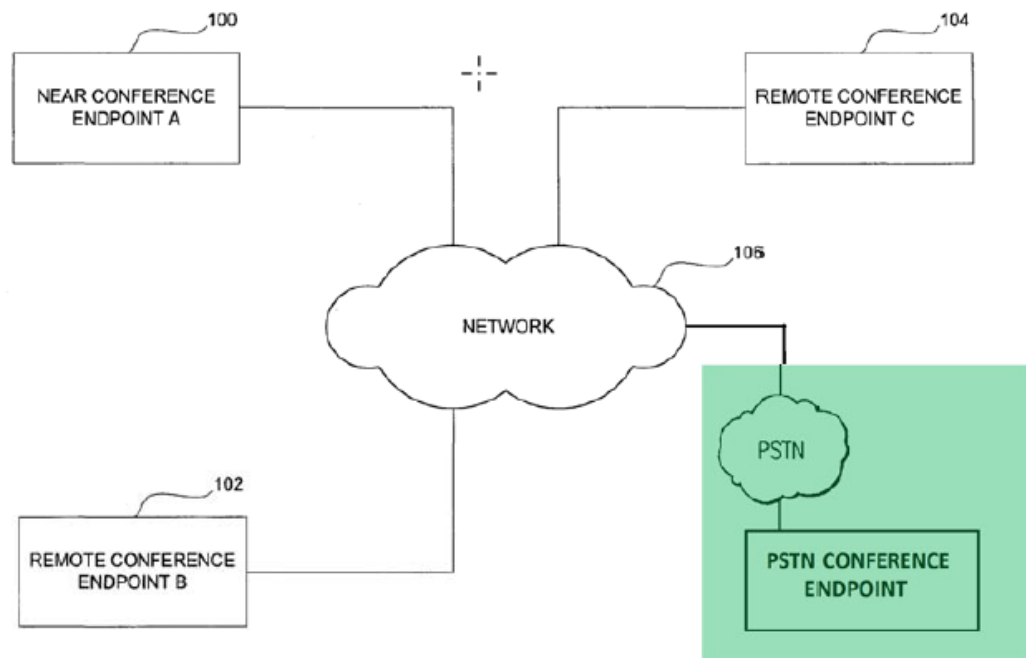
Patent Owner does not specifically challenge Petitioner’s showing as to the preamble. *See generally* PO Resp. To the extent “secure” as recited in the preamble relates to the VPN tunnel recitations of steps 10.3.1 and 10.4.1, we address Patent Owner’s arguments directed to the VPN tunnel recitations below.

b) Steps 10.1.1 and 10.1.2

Steps 10.1.1 and 10.1.2 recite “[10.1.1] initiating a dial-in process to establish a connection with a local moderator” “[10.1.2] in response to an input from a Public Switched Telephone Network (PSTN) client.” Petitioner relies on the combined teachings of Drell, Knappe, and Doganata to address these steps. Pet. 34–38.

Petitioner relies on Drell’s teaching that “network 106” connects near (100) and remote (102, 104) conference endpoints and “contemplates the use of two or more net[works] (for example, the PSTN and the Internet) to connect conference endpoints utilizing different communication protocols.” Pet. 34 (quoting Ex. 1008, 3:33–37). Petitioner also notes that Drell contemplates “a greater number of remote conference endpoints” than Figure 1 depicts as handled by near conference endpoint 100. *See id.* (quoting Ex. 1008, 3:15–19). Based on these teachings, Petitioner contends that “a POSITA would have understood that Drell contemplates that a PSTN conference endpoint participates in the conference.” *Id.*

To illustrate this point, Petitioner modifies Drell's Figure 1 as follows (Pet. 35):



As modified by Petitioner, Drell's Figure 1 illustrates a PSTN and conference endpoint on the right-hand bottom side (highlighted in green) connected through network 106 to the other conference endpoints (100, 102, 104) to allow conferencing with participants at each endpoint. *See id.* at 34–35 (citing Ex. 1003 ¶¶ 201–202).

Regarding the “moderator” as claimed, Petitioner relies on Knappe as “disclos[ing] a conferencing system where ‘at least one participant may be given the priority of moderator for a particular conference call.’” Pet. 35 (quoting Ex. 1006, 8:52–56). Therefore, Petitioner asserts that “it would have been obvious to a POSITA to designate the user of Drell’s near conference endpoint 100 as the moderator (as taught by Knappe . . .), when the near conference endpoint 100 is facilitating the conference call” in order “[to] allow for the user of the near endpoint (acting as the moderator) to control the flow and organization of the conference.” *Id.* at 35–36 (citing

Ex. 1008, Fig. 1; Ex. 1006, Fig. 1; Ex. 1003 ¶¶ 204–205; Ex. 1006, 1:53–55 (teaching “designated moderator(s) to control the flow and/or organization of the conference”)).

Regarding the recited “dial-in” process, Petitioner contends “Drell teaches that the moderator near conference endpoint 100 includes a call manager application 232 that ‘controls the establishment and termination of connections’ with remote conference endpoints.” Pet. 36 (quoting Ex. 1008, 4:15–20). Petitioner relies on Doganata to supplement Drell’s teachings by “teach[ing] a ‘dial-in’ process to establish a conference between participants, including between Internet and PSTN participants.” *Id.* at 36–37 (citing Ex. 1039, 4:38–45 (describing “[t]wo types of conferences,” including “a dial-in conference”), 5:25–33 (describing an application that “contacts participants . . . informing them of the time, date, dial-in number”), 3:60–65 (noting that the service “awaits dial-in calls” from “participants’ phones via the Public Switch Telephony Network 16”)); Ex. 1003 ¶ 208).

Petitioner contends that “[i]t would have been obvious to a POSITA to initiate a dial-in process to establish a connection with Drell’s call manager application 232 of the moderator near conference endpoint 100” in order to “beneficially allow Drell’s conference participants and the moderator to individually establish a conference call connection using the conference endpoints and join in a conference as each participant desires.” Pet. 37 (citing Ex. 1003 ¶¶ 181–189, 209).

Further addressing the claimed “dial-in” process as it applies to step 10.1.2’s “PSTN client” recitation, Petitioner notes that Doganata teaches that for “a dial-in conference, a user requests assignment of a dial-in number and a passcode so that the participants may dial in to the conference when the time comes.” Pet. 38 (quoting Ex. 1039, 4:38–42). Petitioner also contends

that “Doganata teaches ‘an audio bridge for the conference’ that ‘awaits dial-in calls for connecting to the audio bridge’ from ‘participants phones via the Public Switch Telephony Network 16.’” *Id.* at 38 (quoting Ex. 1039, 3:62–64).

Therefore, Petitioner contends that “it would have been obvious to a POSITA that in the combination, Drell’s PSTN conference endpoint would use a dial-in number and passcode as input to establish a connection with the moderator near conference endpoint 100.” Pet. 38 (citing Ex. 1003 ¶¶ 213–214). According further to Petitioner, “Doganata’s teaching would allow the PSTN conference endpoint participant to connect to the conference and exchange audio data with the other participants” and the passcode would have provided security (*id.*), thereby suggesting such a scheme for Drell’s PSTN conference endpoint (as further suggested by Knappe’s PSTN teachings (*see id.* at 35–36, 38 (citing Ex. 1003 ¶ 214))).

After a review of the record as summarized above, we determine that Petitioner’s showing for steps 10.1.1 and 10.1.2 is persuasive. Patent Owner does not specifically challenge Petitioner’s showing for these steps. *See generally* PO Resp.

c) Step 10.2

Step 10.2 recites “receiving first audio data at the local moderator client from the PSTN client through a PSTN gateway.” Petitioner relies on the combined teachings of Drell and Knappe, and points to its showing related to steps 10.1.1 and 10.1.2 to address step 10.2. Pet. 38–40.

For example, referring to its showing with respect to step 10.1.1, Petitioner contends that “Drell explains that near conference endpoint 100 processes ‘audio and video data streams received from remote conference endpoints,’ including a PSTN conference endpoint.” Pet. 39 (quoting

Ex. 1008, 4:21–26; Ex. 1003 ¶¶ 218–220). Petitioner also asserts that “Drell’s moderator near conference endpoint 100 that receives audio data from the PSTN conference endpoint over a PSTN renders obvious ‘*receiving first audio data at the local moderator client from the PSTN client.*’” *Id.* (citing Ex. 1003 ¶¶ 218–221).

Petitioner also relies on Knappe:

Knappe further teaches that when a PSTN conference endpoint participates in a conference, over a PSTN network and an IP network, a “gateway 20 provides conversion between analog and/or digital formats. The standard analog telephones 18 communicate standard telephony signals through PSTN 22 to the gateway 20. At the gateway 20, the signals are converted to IP packets in the VoIP format.” Ex. 1006, 4:18–22. Knappe explains that “the telephone 18 and gateway 20 combination [is] capable of communicating real-time audio, video and/or other information over the network 14.” *Id.* 3:65–4:1.

Pet. 39.

Based on the teachings as summarized above, Petitioner contends it would have been obvious for Drell’s network to receive standard audio data from PSTN conference endpoints in light of Drell’s audio PSTN conference teachings and Knappe’s gateway and PSTN teachings by converting PSTN data into an Internet compatible format (packets) to beneficially provide for PSTN telephone communication in a conference. *See* Pet. 39–40.

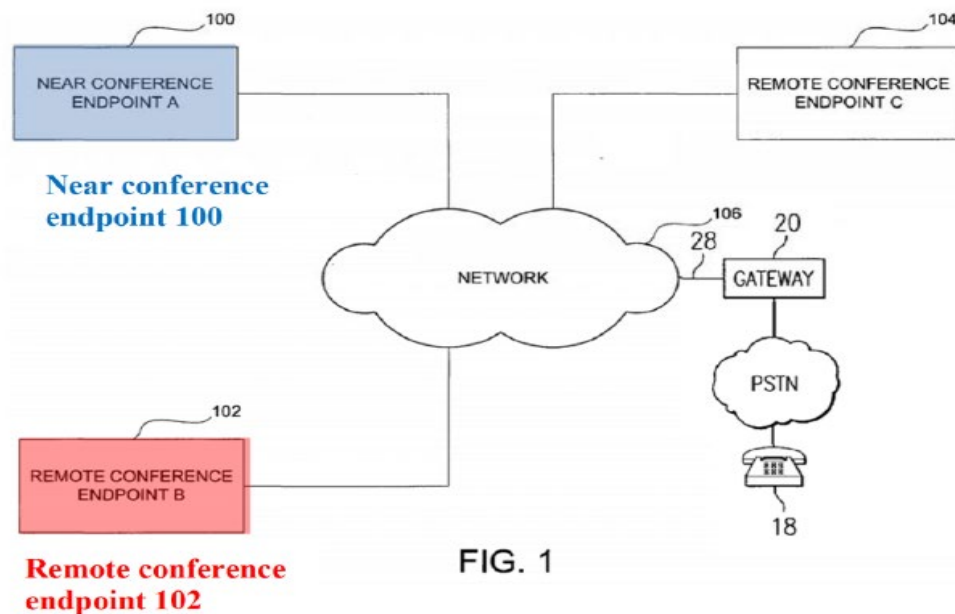
After a review of the record as summarized above, we determine that Petitioner’s showing for step 10.2 based on the teachings of Drell and Knappe is persuasive. Patent Owner does not specifically address Petitioner’s showing as to step 10.2. *See generally* PO Resp.

d) Steps 10.3.1 and 10.3.2

Steps 10.3.1 and 10.3.2 recite “[10.3.1] receiving second audio data at the local moderator client from a remote client” “[10.3.2] through a Virtual

Private Network (VPN) tunnel.” Petitioner relies on Drell to address step 10.3.1 and the combined teachings of Drell and Elliott to address step 10.3.2, and also refers to its showings for the related steps addressed above (which rely on Knappe). Pet. 40–43. For example, Petitioner refers to its showing with respect to steps 10.1.1 and 10.1.2, asserting that “the prior art teaches a moderator near conference endpoint 100.” *Id.* at 41 (citing Ex. 1003 ¶ 227).

Petitioner contends that Drell teaches that “remote conference endpoint[] 102 . . . transmit[s] . . . audio (speech) data.” Pet. 41 (quoting Ex. 1008, 3:4–23). Petitioner annotates Drell’s Figure 1 as follows to illustrate its point:



Drell’s Figure 1 as annotated by Petitioner illustrates remote conference endpoint 102 (red) connected via network 106 with near conference endpoint (100) (blue) (the recited “local moderator client”). *See id.* at 41–42 (emphasis omitted). Petitioner contends that

the moderator near conference endpoint 100 of Drell includes MP conferencing application 234 “that is configured to instantiate a processing train for each remote conference

endpoint 102 and 104 to which near conference endpoint 100 is connected. The processing trains process audio and video data streams received from remote conferencing endpoints 102 and 104.”

Id. at 41 (quoting Ex. 1008, 4:21–26; citing Ex. 1003 ¶¶ 228–229).

Addressing step 10.3.2, Petitioner contends that Drell teaches that its “network 106 may comprise a packet switched network, such as the Internet” (Pet. 42 (quoting Ex. 1008, 3:33–38)), and Elliott “teaches communicating conferencing ‘media stream (e.g. voice, fax, data, video, etc.)’ over ‘the public Internet’ using ‘virtual private network (VPN) . . . IP-tunneling.’” (*id.* (quoting Ex. 1007, 2:66–3:1, 4:6–34, 6:43–54)). Based on these teachings, Petitioner contends that it would have been obvious to employ a VPN tunnel in Drell’s network as Elliott teaches, in order to “provide Drell with secure communications as the communications traverse Internet network 106.” *Id.* at 43.

After a review of the record as summarized above, we determine that Petitioner’s showing for steps 10.3.1 and 10.3.2 based on the combined teachings of Drell, Knappe, and Elliott is persuasive. Patent Owner does not specifically challenge Petitioner’s specific reliance on Drell, Knappe, and Elliott for these steps. *See generally* PO Resp.

Rather, for claims 10–18 in general, Patent Owner presents the following arguments, which may relate to the VPN tunnel limitations as recited in steps 10.3.1 and 10.3.2 (and step 10.4.1 as addressed below):

In the arguments provided by Petitioner, Knappe (EX_1006) is combined with Elliott (EX_1007). Elliott discloses a system wherein a first party, an agent in a call center, manages interactions with two or more remote parties via a computer program, establishing separate sessions for each party. This allows independent communication. Elliott simply discloses two independent calls with two independent remote

parties connected to a call-center. The two remote parties are not connected to each other, directly or indirectly. The system is not subject to modification with the other references, including Knappe.

Elliott mentions VPN technology but not for audio data or even the conference calls between multiple parties. Knappe presents a conference call configuration involving numerous participants (more than two) connected to a unified call, wherein one party enjoys priority. A POSITA would have no motivation to combine Elliott and Knappe for this purpose. Exhibit 2001 (Dye Decl.) at ¶¶ 20–21.

PO Resp. 17.

Contrary to these arguments, as Petitioner notes, the Petition does not rely on combining Knappe and Elliot to address the VPN tunnel limitations Reply 7. Rather, “Petitioners rely on Drell in combination with Elliot to show that a POSITA would be motivated to and know how to implement well known VPN tunneling techniques within Drell’s conferencing system.” *Id.* at 10. And even though Petitioner relies on Drell’s audio as combined with Elliott’s similar teachings, Elliott discloses VPN for audio, as Patent Owner otherwise admits. *See* PO Resp. 24 (admitting that Elliott discloses “secure audio data . . . between the end user and call center”).

In addition, Petitioner relies on Elliot’s VPN teachings as applicable to multiple parties using individual private networks, even if, as Patent Owner argues, Elliot discloses “two independent calls” in one embodiment. *See* PO Resp. 17. For example, as Petitioner shows, “Elliott explicitly states that its system ‘also enables services for one-to-many and many-to-many IP based collaboration.’” Reply 9–10 (quoting Ex. 1007, 2:10–13; citing Ex. 1007, 7:58–61 (discussing “multiple 1:1, 1:n, n:1, and n:n sessions”)).

Moreover, as summarized above, the Petition relies on Elliott’s teaching of “communicating conferencing ‘media stream (e.g. voice, fax,

data, video, etc.)’ over ‘the public Internet’ using ‘virtual private network (VPN) . . . IP-tunneling’” as suggesting the use of VPN’s tunnel in Drell’s similar Internet-based conferencing system, which like Elliott’s system, provides audio, video, and collaboration data. Pet. 42–43 (quoting Ex. 1007, 2:67, 4:10–34; citing Ex. 1007, 6:43–54; Ex. 1008, Fig. 1; Ex. 1003 ¶¶ 233–237). Patent Owner’s arguments attempt to isolate the teachings of Elliott, rather than addressing the combination that Petitioner relies upon.

Dr. Houh’s cited testimony quotes Elliott and supports Petitioner. *See* Ex. 1003 ¶¶ 234 (“A network 18 is at least two (and preferably more) computers interconnected together so that communication between them is possible. In the illustrated embodiment, the public Internet is shown as an exemplary Internet Protocol-based (IP-based) network 18 for multimedia collaboration.” (quoting Ex. 1008, 4:6–12)), 233–237 (providing other quotations from Elliott to support obviousness of using a VPN tunnel over the Internet for security purposes).

Patent Owner also argues that Elliot does not “suggest to a person of [f] ordinary skill in the art that VPN tunnel should or could be implemented to protect voice over the [Elliot] POTS phone connection or access to a publicly-available URL on the Web.” PO Resp. 19. However, as Petitioner notes, the claims do not require securely protecting voice over a POTS (plain old telephone service) or to access a publicly available URL on the Web. Reply 10.

Patent Owner also argues that the district court construed a VPN as “a private network of securely connected appliances configured within a public network.” PO Resp. 17–18. Patent Owner also argues that “[t]he district court construed ‘VPN tunnel’ to mean a connection between two devices that permits encapsulating a first packet from one protocol in a second

packet from a different protocol.” *Id.* at 18; *accord id.* at 21 (“A VPN tunnel is ‘a connection between two devices that permits encapsulating a first packet from one protocol in a second packet from a different protocol.’”). Patent Owner contends that it is “crucial to distinguish between a VPN and a VPN tunnel.” *Id.* at 23.

However, Patent Owner does not contend that Elliott fails to disclose a VPN tunnel. *See generally* PO Resp. In its Sur-reply, Patent Owner also alleges that Elliott cannot be combined with Drell to show the obviousness of using a VPN tunnel as claimed. *See* Sur-reply 3–9.

Contrary to Patent Owner’s arguments, Petitioner shows it would have been obvious to implement a VPN tunnel with Drell’s system. Patent Owner does not dispute that Elliott specifically discloses a VPN tunnel that is consistent with the district court construction. Petitioner establishes persuasive motivation for employing Elliott’s well-known VPN tunnel in Drell’s conferencing system with a reasonable expectation of success. *See* Pet. 24–25, 32–33. For example, as noted above, Petitioner contends that Drell teaches that its “network 106 may comprise a packet switched network, such as the Internet” (Pet. 42 (quoting Ex. 1008, 3:33–38)), and Elliott “teaches communicating conferencing ‘media stream (e.g. voice, fax, data, video, etc.)’ over ‘the public Internet’ using ‘virtual private network (VPN) . . . IP-tunneling.’” (*id.* (quoting Ex. 1007, 2:66–3:1, 4:6–34, 6:43–54)). Based on these teachings, Petitioner contends that it would have been obvious to employ a VPN tunnel in Drell’s network as Elliott teaches, in order to “provide Drell with secure communications as the communications traverse Internet network 106” between conference endpoints (rendering the endpoints/appliances secure). *See id.* at 42–43 (citing Ex. 1003 ¶ 236,

¶¶ 158–172). As Petitioner also argues, with respect to Elliott’s Figure 1, “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.” Reply 12 (citing Ex. 1007, 4:28–32). Therefore, as Petitioner also argues “[t]his network allows for secure transmission of audio data via a VPN tunnel.” *Id.* (citing Ex. 1003 ¶¶ 234–236).

Petitioner also persuasively explains that

a POSITA would have understood that VPNs are beneficial because they *reduce the need to lease private data lines, which reduces or avoids the costs for implementing a private network by communicating securely over the Internet.* [Ex. 1003 ¶ 168] Indeed, the combination of Drell and Elliott is merely the ordinary use of a common technique (using VPN tunneling for conferencing data) in the similar conferencing system of Drell to yield predictable results of (1) securing the transmitted data, and (2) reducing or avoiding costs associated with leasing private data lines. *Id.* ¶169.

Pet. 25 (emphasis added).

The record evidence as cited by Petitioner, provides factual underpinnings to support Petitioner’s stated rationale of implementing a VPN tunnel to provide security at a reduced cost for Drell’s packet data. *See* Pet. 25 (quoted above), 32–33 (arguing it would have been obvious to implement Elliott’s Internet VPN tunnelling techniques to secure Drell’s similar Internet data between Drell’s conference endpoints wherein Drell discloses an “**H.323** (packet-based) process” (quoting Ex. 1008, 2:26–33), 42–43) (similar). The record shows that a virtual private network was so well-known for providing a secure network that artisans of ordinary skill used the acronym “VPN” for it and employed it with IP-tunneling and the Internet as Elliott verifies. *See* Ex. 1007, 2:66–3:6, 4:30–34; Reply 13 (citing Ex. 1003 ¶¶ 83–84). Elliott also discloses that a “virtual private

network[]” is an “example[] of [an application employed in] multimedia collaboration” used for “collaboration with more than one party.” Ex. 1007, 2:66–3:6.

As Petitioner also notes, Dr. Houh testifies that before the ’612 patent’s priority date, it was well known to implement VPN tunnels. Reply 13 (citing Ex. 1003 ¶¶ 83–84). At cited paragraph 83, Dr. Houh explains that “[t]unneling refers to a networking technique whereby a packet is encapsulated in another network packet, typically so that it can traverse an underlying network that does not support the capability required by the encapsulated packet.” Ex. 1003 ¶ 83. He further explains that encapsulated IP tunneling was standardized and “described in RFC 1853 which was published in the mid-1990s.” *Id.* He further explains that encapsulated packet tunneling was standard in other known protocols, including MBone and IPSec, common network security approaches in the 1990’s. *See id.* ¶¶ 84–90. Based on this testimony, other testimony, and record evidence, Petitioner contends that a “POSITA, with knowledge of these standard tunneling approaches, would have known to implement VPN tunneling disclosed in Elliot in Drell’s conferencing system.” Reply 14 (citing Ex. 1003 ¶¶ 166–172, 231–238, 258–263); *accord* Pet. 24–25 (noting that “VPN tunneling would make the transmitted data secure from outside access and interference” and “VPN tunneling was conventional”). Based on the foregoing, Petitioner shows that VPN tunnelling was a well-known packet-based approach readily implemented to beneficially encapsulate and encrypt all types of data packets traversing the Internet to thereby also provide secure endpoints in Drell’s conferencing system, which transmits and receives the claimed data packets over the Internet.

Patent Owner also contends that the VPN tunnel would not have been obvious because Elliott does not disclose a system wherein data is delivered via a VPN tunnel to a moderator where the data is “decrypted” before being shared with the PSTN client. PO Resp. 20–21. Patent Owner also argues that the VPN tunnel limitations would not have been obvious because the prior art does not disclose a “VPN bridge.” *Id.* at 21. However, as Petitioner notes, the challenged claims do not require decryption or a VPN bridge. *See* Reply 12–13.

After a review of the record as summarized above, we determine that Petitioner’s showing for steps 10.3.1 and 10.3.2 is persuasive. We address related arguments about the VPN tunnel in the next section.

e) Step 10.4.1

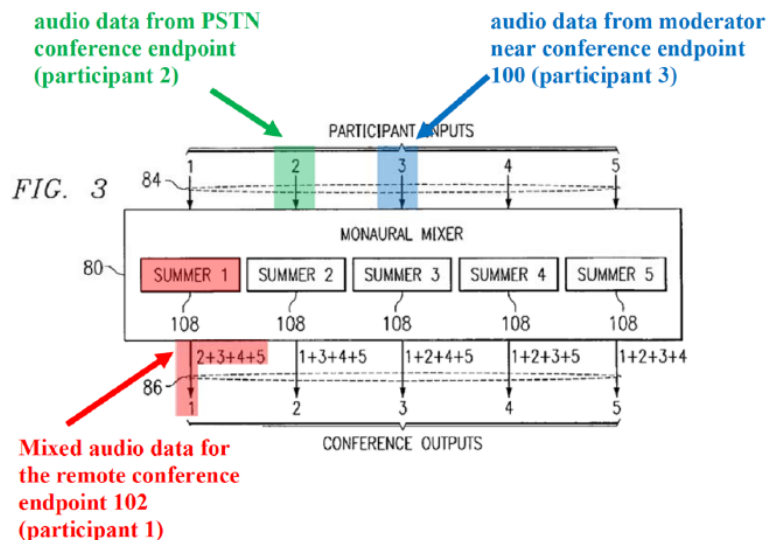
Steps 10.4.1 and 10.4.2 recite “[10.4.1] transmitting third audio data, first video data, and first collaboration data from the local moderator computer to the remote client” “[10.4.2] through the first VPN tunnel.” To address step 10.4.1, Petitioner relies on the combined teachings of Drell, Knappe, and Elliott. Pet. 43–49. To address step 10.4.2, Petitioner relies partly on its showing for steps 10.4.1 and 10.3.2, which rely on the combined teachings of Drell, Knappe, and Elliott, as noted above. *See id.* at 49–50.

Starting with step 10.4.1’s local moderator computer, as indicated with respect to steps 10.1.1 and 10.1.2, Petitioner contends that “Drell in combination with Knappe and Doganata teaches a moderator [at] near conference endpoint 100,” and Drell teaches a remote client at conference endpoint 102. Pet. 43–44 (citing Ex. 1003 ¶ 240). Petitioner also relies on Drell’s teaching that “moderator near conference endpoint 100’s MP conferencing application 234 includes an ‘[a]udio mixing module 308 [”

configured to combine audio data received from remote conference endpoints 102 and 104 with locally generated audio data' and generate an 'output audio data stream.'" *Id.* at 44 (quoting Ex. 1008, 5:8–23; citing Ex. 1008, code (57), 2:34–52, 4:25–31); *see also* Ex. 1008, Fig. 3 (audio mixing module 308 as part of Drell's MP Conferencing Application).

Addressing the recited "third audio data" of step 10.4.1, Petitioner asserts that "[l]ocally generated audio is input to the near conference endpoint 100 using a 'microphone' that generates 'audio signals representative of the . . . speech of the near conference participant.'" Pet. 44 (quoting Ex. 1008, 3:45–48). Contending that a person of ordinary skill in the art "would understand that the audio data received from the PSTN conference endpoint would also be combined in the audio mixing module 308" at the moderator endpoint, Petitioner relies on Knappe to supplement Drell's mixer teachings as Knappe "explains how to mix audio data from multiple conference endpoints, including PSTN conference endpoints"—i.e., using one or more of Knappe's audio mixer 80's summers 1–5. *See* Pet. 44–45 (citing Ex. 1006, Figs. 1–3, 5:40). Petitioner contends that implementing Knappe's mixing and summer technique with Drell's mixer 308 and MP conference application 234 at moderator near conference endpoint 100 (*id.*) "would provide for separately mixing audio data from the PSTN conference endpoint with audio data from the moderator near conference endpoint 100, while providing higher prominence and control to the moderator" (*id.* at 45 (citing Ex. 1003 ¶¶ 137–157, 244)). Petitioner also contends the modification excludes undesirable echoes and generates separate audio for each conference participant. *See id.* at 17–19.

Petitioner illustrates its showing by annotating Knappe's Figure 3, as follows (Pet. 45–46):



Petitioner explains that Knappe's mixer 80 includes a plurality of summers 1–5, “where each summer mixes audio data from the other participants (e.g., participants 1 to 5) while providing higher prominence to the moderator audio.” *Id.* at 44–45 (citing Ex. 1006, 6:59–63 (“[M]ixer 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.”),⁹ 7:12–15 (“[T]he conference moderator may be amplified . . . to focus on or provide higher prominence”); Ex. 1003 ¶ 243). Petitioner's annotations of Figure 3 above illustrate an example of the combined system of Drell and Knappe wherein participant 2 at a conference endpoint provides PSTN audio data (green) and participant 3 (moderator) at near conference endpoint 100 provides moderator audio data (blue), which summer 1 (at

⁹ As noted above (note 8), Knappe refers to “summer 108” in connection with Figure 7 and “summers 182” in connection with Figure 3, although Figure 3 shows summers 108. *Compare* Ex. 1006, 8:24–27, with 6:59–63.

moderator near conference endpoint 100) mixes to provide mixed audio data from participants 2 and 3 for transmission to participant 1 at endpoint 102 (red). *See id.* at 46 (citing 1006, Fig. 3; Ex. 1003 ¶¶ 246–247). Petitioner reads the recited “third audio data” of step 10.4.1 onto this mixed audio data. *Id.* (citing Ex. 1003 ¶ 247).

Addressing the “first video data” as recited in step 10.4.1, Petitioner relies on Drell’s “conferencing application 234 [as] includ[ing] a video switching/continuous presence module 306 [that] ‘output[s] the video data stream corresponding to the conference endpoint of the currently speaking participants.’” Pet. 47 (quoting Ex. 1008, 5:36–37; citing Ex. 1008, 4:32–38, 5:27–47). According to Petitioner, “[a] POSITA would have understood that when the moderator is speaking, the moderator’s video data would be selected and output by the video switching continuous presence module 306.” *Id.* (citing Ex. 1003 ¶ 248).

Further regarding the “first video data” of step 10.4.1, Petitioner also relies on Drell’s teaching that “[i]n the transmission mode, processing train 302 is configured to . . . form a mixed encoded audio/video data stream, and the encoded audio/video data stream is transmitted.” Pet. 47 (quoting Ex. 1008, 5:48–54). In addition, Petitioner notes that Drell’s “[r]emote conference endpoint[] 102 . . . receive[s] both video (image) and audio (speech) data.” *Id.* (quoting Ex. 1008, 4:8–12). Petitioner reads the “first video data” of step 10.4.1 onto these video teachings in Drell, and contends that it would have been obvious in view of Knappe to transmit mixed audio and video from Drell’s moderator at near conference endpoint 100 to remote conference endpoint 102 to provide control and prominence to the moderator. *See id.* at 45, 47.

Regarding the “first collaboration data” of step 10.4.1, Petitioner relies on Drell’s teachings related to receiving codec coding and encoding of still images “from remote conference endpoint 104 which near conference endpoint 100 then transmits to the remote conference endpoint 102.” Pet. 47–48 (citing Ex. 1008, 6:53–56; Ex. 1003 ¶ 252). Petitioner also relies on Drell’s use of H.323 packet-based processing, which includes T.120 collaboration data, noting that “the ’612 patent itself relies on the prior art H.323/T.120 standards for transmitting collaboration data as part of the packetizing process.” *Id.* at 48 (citing Ex. 1008, 2:26–33; Ex. 1001, 3:19–21 (“[T]he H.323 recommendation defines a data collaboration capability as known and outlined in the T.120 data collaboration unit.”), Fig. 2 (Prior Art)).

Petitioner also relies on Elliott’s collaboration data, including “application sharing” data, “web browsing” data, and collaboration data per the “T.120 standard.” Pet. 48 (quoting Ex. 1007, 1:43–45, 5:49–61, 11:6–13; citing Ex. 1007, 6:46–54). Petitioner contends it would have been obvious to use Elliott’s collaboration methods to transmit collaboration data from Drell’s moderator at near conferencing endpoint 100 to its remote conference endpoint 102 to allow different ways for participants to collaborate with each other and thereby enhance their effectiveness (e.g., via application sharing, web browsing, and other collaboration data per the T.120 standard). *Id.* (citing Ex. 1003 ¶¶ 254–255).

Addressing step 10.4.2, which involves transmitting the three forms of data in step 10.4.1 “*through the first VPN tunnel*,” Petitioner logically assumes that “*the first VPN tunnel*” refers back to the “(VPN) tunnel” as recited in step 10.3.2. Pet. 49. Relying on its showing for step 10.4.1, Petitioner contends “the prior art teaches that the moderator near conference

endpoint 100 transmits mixed audio data, selected video data, and collaboration data to the remote conference endpoint 102.” *Id.* Relying on its showing for step 10.3.2, Petitioner contends that “the prior art teaches that the moderator near conference endpoint 100 communicates with the remote conference endpoint 102 through the VPN tunnel.” *Id.* at 50 (citing Ex. 1003 ¶ 261). Petitioner contends “[i]t would have been obvious” to use the same VPN tunnel as relied upon for step 10.3.2 to provide “for communications between the moderator near conference endpoint 100 and the remote conference endpoint 102, because it would provide Drell secure communications.” *Id.* (citing Ex. 1003 ¶¶ 158–172).

Patent Owner responds that “Petitioner has broken the complete claim element into two parts,” because “[t]he element is ‘receiving first audio data, first video data, and first collaboration data at a server from a first remote client through a first Virtual Private Network (VPN) tunnel.’” PO Resp. 18. Contrary to Patent Owner’s argument however, claim 10 does not recite this “element.” The closest limitation, step 10.4.1 at issue here, recites “[10.4.1] transmitting third audio data, first video data, and first collaboration data from the local moderator client to the remote client [10.4.2] through the first VPN tunnel.” By separately addressing the “two parts” (i.e., “br[eaking] the complete claim into two parts,” namely data types and the VPN tunnel for those data types), Petitioner persuasively shows the obviousness of implementing a VPN tunnel on all types of packet data, as outlined above and in the previous section addressing the VPN tunnel limitation. obviousness.

Focusing on unchallenged claim 19, under a section heading entitled “NONE OF KNAPPE, ELLIOTT OR DRELL DISCLOSE THE ‘THROUGH A FIRST VIRTUAL PRIVATE NETWORK (VPN)

TUNNEL’ LIMITATION OF INDEPENDENT CLAIM 19” (PO Resp. 17 (emphasis omitted)), Patent argues that “[a] VPN tunnel is not disclosed or suggested for mixed audio data by the art of record” (*id.* at 21–22). This argument does not address the combination that the Petition relies upon. Similarly, Patent Owner’s related arguments separately address Elliott and Knappe without specifically addressing Petitioner’s showing based on the combined teachings of Drell, Knappe and Elliott (*see id.* at 17–22). That is, as outlined above, Petitioner persuasively relies on the combined teachings of Drell, Knappe and Elliott to address transmitting mixed audio data over a VPN tunnel to address step 10.4.2. *See* Pet. 43–50.

As discussed in connection with steps 10.3.1 and 10.3.2, and as also discussed further below, Petitioner provides persuasive reasons for implementing a VPN tunnel in Drell’s system, including to secure all types of packet data in a low cost manner over the Internet instead of requiring separate private data lines. Specifically as to the mixed audio data, Petitioner interprets the “third audio data” of limitation 10.4.1 as mixed audio data and reads it onto “the combination of Drell and Knappe, the mixed audio data output by the audio mixing module 308, for the remote conference endpoint 102, . . . since it is a mix of locally generated audio from the moderator and the audio from the PSTN conference endpoint and does not include the remote conference endpoint 102 audio”). Pet. 46 (annotating Ex. 1006, Fig. 3); *see also id.* at 17–20 (providing rationale with factual underpinnings to support the showing the obviousness of mixing audio data and sending mixed audio with other types of data in conferencing systems).

Again focusing on unchallenged claim 19, Patent Owner argues in a section heading that the prior art does not disclose or suggest

“TRANSMITTING THE FIRST VIDEO DATA AND THE FIRST COLLABORATION DATA FROM THE SERVER TO THE SECOND REMOTE CLIENT” LIMITATION OF INDEPENDENT CLAIM 19.” PO Resp. 26 (emphasis omitted). In its Sur-reply, Patent Owner recognizes that the Petitioner does not challenge claim 19 withdraws this argument as a mistake. Sur-reply 10. In any event, in this section for these claim 19 arguments, Patent Owner also contends that “video data and collaboration data are distinct.” PO Resp. 26. To the extent the arguments may apply to similar steps in claim 10, Patent Owner argues that

neither Knappe nor Elliot disclose collaboration data as a distinct set of data from video and audio. Elliot only discloses pushing URLs or applets to clients using standard Internet techniques. Elliot, 3:13–39. Knappe teaching is limited to video and audio. 5:40–48. Its vague references to “data” cannot be reasonably replaced with the claimed “collaboration data.”

PO Resp. 27 (citing Ex. 2001 ¶ 24).

Contrary to the thrust of this argument, as noted above and as Petitioner argues, Petitioner does not rely on Knappe for collaboration data or exclusively on Elliot’s URL or applet disclosures. *See* Reply 16–17. Rather, Petitioner relies partly on Drell’s use of H.323 packet-based processing, which includes T.120 collaboration data, noting that “the ’612 patent itself relies on the prior art H.323/T.120 standards for transmitting collaboration data as part of the packetizing process.” Pet. 48 (citing Ex. 1008, 2:26–33; Ex. 1001, 3:19–21 (“[T]he H.323 recommendation defines a data collaboration capability as known and outlined in the T.120 data collaboration unit.”), Fig. 2 (Prior Art)); *accord* Reply 17 (reiterating that “the ’612 patent itself relies on the prior art H.323/T.120 standards for

transmitting collaboration data as part of the packetizing process” (citing Ex. 1001, 3:19–21)).

As also noted above, Petitioner additionally relies on Elliott’s similar collaboration data, including “application sharing” data, “web browsing” data, and collaboration data per the “T.120 standard.” Pet. 48 (quoting Ex. 1007, 1:43–45, 5:49–61, 11:6–13; citing Ex. 1007, 6:46–54). Petitioner contends that it would have been obvious to use collaboration data to allow different ways for participants to collaborate with each other and thereby enhance their effectiveness (e.g., via application sharing, web browsing, and other collaboration data per the T.120 standard). *Id.* (citing Ex. 1003 ¶¶ 254–255).

The record evidence as cited in the Petition supports Petitioner’s showing, including by providing persuasive factual underpinnings to support Petitioner’s rationale. Patent Owner’s arguments fail to address, much less undermine, Petitioner’s specific reliance on Elliott, Drell, and the combined teachings.

Patent Owner also alleges that Elliott teaches away from audio, because Elliot “teaches two independent calls with two independent remote parties connected to the call-center.” PO Resp. 27.¹⁰ Patent Owner also argues that Elliott “teach[es] away [from] sharing audio data between remote parties” so that “it would not be combined with Knappe or Drell which involve sharing audio and video between remote parties.” Sur-reply 7. Patent Owner points to teachings about Elliott’s agents to support its arguments. *See id.* at 4–8.

¹⁰ Again, Patent Owner presents this specific argument to unchallenged claim 19. *See id.* at 26–27.

Even if Patent Owner’s characterization of Elliott is correct, which it is not, teaching a different way to communicate audio (e.g., via “independent calls” between a call-center agent according to Patent Owner does not teach away from using audio or mixed audio. *See* PO Resp. 27. As noted above, Patent Owner admits that Elliott discloses “secure audio data . . . between the end user and call center,” therefore Elliott also does not teach away from transmitting and receiving “secure audio data” between remote parties. *See* PO Resp. 24. Moreover, Patent Owner’s arguments attack the references individually without addressing Petitioner’s specific reliance on different teachings in the references, where the Petition relies on Drell as teaching transmitting audio between remote parties and supplements that with the audio mixing teachings of Knappe, as summarized above. *See* Pet. 44–48.

In addition, contrary to Patent Owner’s arguments, as Petitioner notes and as discussed above, Elliott generally discloses audio and also securing the transmission of audio data with VPN tunnels. *See* Reply 11 (stating that “Elliott teaches ‘collaborative Web browsing, audio conferencing, video conferencing, and application sharing’” (citing Ex. 1007, 1:40–44; Ex. 1003 ¶ 133)). This parenthetical quotation by Petitioner is in a section titled “BACKGROUND OF THE INVENTION.” Ex. 1007, 1:32–45. Petitioner also shows that Elliott teaches the use of “‘a virtual private network (VPN) . . . which uses IP or IP-tunneling’ for the transmission of ‘voice, fax, data, video’ and ‘[o]ther types of collaboration . . . data’ during the conference.” Reply 11 (emphasis added) (quoting Ex. 1007, 2:66–3:1, 4:30–32, 6:53–54; citing Ex. 1003 ¶ 133); *accord* Pet. 42 (materially similar showing (citing Ex. 1007, 2:66–1, 4:6–34, 6:43–54).

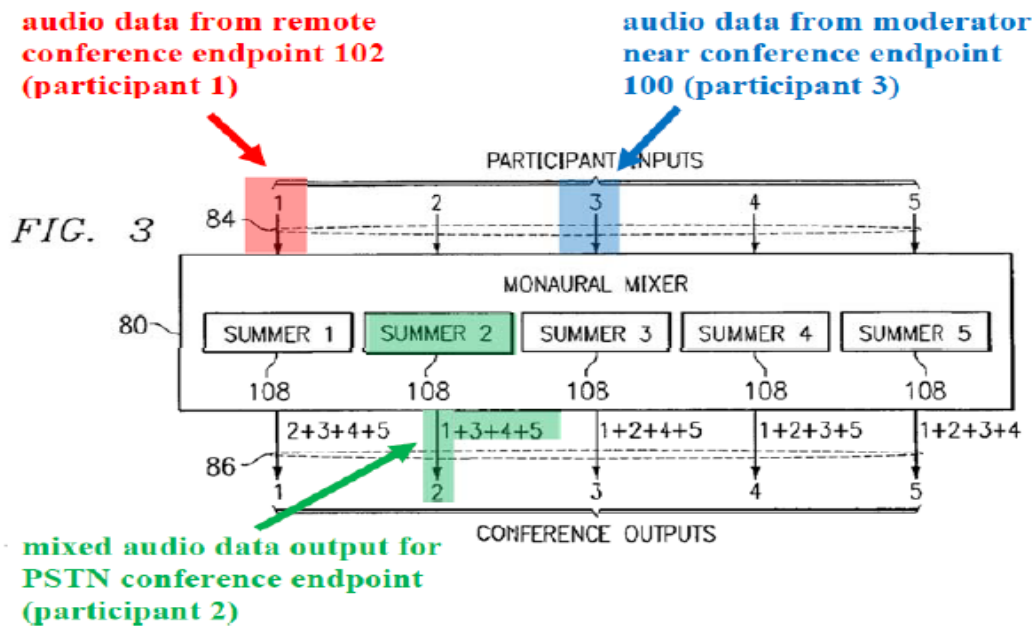
After a review of the record as summarized above, we determine that Petitioner’s showing for steps 10.4.1 and 10.4.2 is persuasive.

f) Step 10.5

Step 10.5 recites “transmitting fourth audio data from the local moderator client to the PSTN client through the PSTN gateway.” Petitioner relies partly on its showing for steps 10.1.1, 10.2, and 10.4.1, which rely on the combined teachings of Drell, Knappe, and Elliott, as noted above. *See* Pet. 50–52.

Relying on its showing for step 10.1.1 and 10.2, Petitioner contends that “the prior art teaches that the moderator near conference endpoint 100 communicates with the PSTN conference endpoint through the PSTN gateway.” Pet. 50 (citing Ex. 1003 ¶¶ 265, 271–274). Relying on its showing with respect to step 10.4.1, Petitioner contends that “Drell teaches that the near conference endpoint 100’s ‘[a]udio mixing module 308 is configured to combine audio data received from remote conference endpoints 102 . . . with locally generated audio data’ to generate an ‘output audio data stream.’” *Id.* at 50–51 (quoting Ex. 1008, 5:8–16; Ex. 1003 ¶¶ 241, 266). Petitioner also refers to its reliance on Knappe to supplement Drell’s teachings by “explain[ing] how to mix audio data from multiple conference endpoints using a mixer with a summer for each participant.” *Id.* at 51 (citing Ex. 1003 ¶¶ 243–246, 267).

Petitioner annotates Knappe’s Figure 3 to support its showing, as follows (Pet. 51):



Referring to its similar showing for step 10.4.1 and Knappe's Figure 3, Petitioner contends that it would have been obvious to mix audio data at summer 2 (green) from conference participant 1 (red, at remote conference endpoint 102) and participant 3 (blue, moderator at near conference endpoint 100) and transmit that data to participant 2 at the PSTN conference endpoint (green), in order to provide enhanced moderator audio and control, exclude undesirable echoes, and generate separate audio for each conference participant. *Id.* at 17–19, 51–52 (citing Ex. 1003 ¶¶ 264–275).

In summary, according to Petitioner, in the modified system of Drell implementing Knappe's mixer teachings to supplement Drell's audio mixer 380 teachings, "the mixed audio data output by the audio mixing module 308, for the PSTN conference endpoint, corresponds to a '*fourth audio data*,' since it is a mix of locally generated audio from the moderator and the audio from the remote conference endpoint 102." *See* Pet. 52 (citing Ex. 1003 ¶¶ 269–270).

Patent Owner does not specifically challenge Petitioner’s showing for step 10.5. To the extent generic arguments by Patent Owner may pertain to step 10.5 or any other step, we address them in the next section. After a review of the record as summarized above and including the arguments addressed below, we determine that Petitioner’s showing for step 10.5 is persuasive.

7. Other Arguments by Patent Owner

After listing steps 10.2, 10.3.1, 10.4.1, and 10.5, Patent Owner points to Figure 6’s “embodiment of differentiated audio streams” and contends that “[n]othing akin to this arrangement is disclosed in the prior art of record.” PO Resp. 15–16. This argument is unavailing. Petitioner does not need to show that the “prior art of record” “disclose[s]” “the arrangement” of the Figure 6 “embodiment” in order to show the obviousness of claim 10. Similarly, Patent Owner’s argument that Figure 6 involves “differentiated mixing . . . to avoid significant negative repercussions” and that “[n]o reference discloses this sequence of mixed audio signals,” including “Drell,” simply does not address Petitioner’s persuasive showing for the *claimed* invention (which does not rely exclusively on Drell), as outlined above. *See id.* at 16 (citing Ex. 1001, 9:5–53).

Patent Owner directs most of its remaining arguments toward claim 19. PO Resp. 17–29. However, as noted above, the Petition does not challenge claim 19. Therefore, the arguments are largely irrelevant to Petitioner’s showing with respect to the challenged claims. To the extent the arguments may pertain to a step in claim 10 or any other challenged claim, we address them above and further below.

For example, in a section heading, Patent Owner argues that Patent Owner asserts the prior art of record does not disclose the “Mixing the First

Audio Data With the Second Audio Data Into a First Mixed Audio Data’ Limitation of Independent Claim 19.” PO Resp. 23 (emphasis omitted); *accord id.* at 15–16 (similar “mixing” argument). However, as Petitioner contends, claim 10 does not recite mixing and claim 19 is not at issue. *See* Reply 15. Patent Owner withdraws the argument as a mistake. Sur-reply 9. To the extent Petitioner relies on mixing to address claim steps 10.4.1 and 10.5 (i.e., to obtain third audio data and fourth audio data, respectively), Petitioner persuasively relies on the combination of Drell and Knappe, where Knappe explicitly discloses mixing as summarized above and as noted below. *See* Reply 4; Pet. 43–49, 50–52.

In another section heading, Patent Owner argues that the prior art of record does not disclose the “‘Mixing the First Audio Data With the Third Audio Data Into a Third Mixed Audio Data’ Limitation of Independent Claim 19.” PO Resp. 24 (emphasis omitted). Again, as Petitioner notes, “claim 19 is not at issue in this Petition.” Reply 16. As Petitioner also notes, “there is no mixing of ‘first’ and ‘third’ audio data limitation in any of the claims at issue in this Petition.” *Id.* Patent Owner withdraws the argument as a mistake. Sur-reply 9. And to the extent steps 10.4.1 and 10.5 implicitly involve mixing, Petitioner persuasively shows that the combined teachings of Drell and Knappe teach it as determined above.

Patent Owner also argues that the Petition fails to disclose “mixing of different audio streams comprising different input signals for different recipients.” PO Resp. 15. Again, as Petitioner notes, the challenged claims do not recite mixing. Reply 4. And to the extent steps 10.4.1 and 10.5 implicitly require mixing such that Patent Owner argues that the PSTN client and remote client do not receive different audio data, Petitioner relies “on Knappe’s disclosure of mixing separate audio data for transmission to

different clients” as combined with Drell, as noted above. *See id.* (citing Pet. 43–49, 50–52).

In other words, as determined above, Petitioner’s showing is persuasive. As the Petition explains, it would have been obvious to use Knappe’s plurality of summers in Drell’s audio mixing module 308 for its conferencing. Pet. 45–48; Ex. 1003 ¶ 244; Reply 5. As Petitioner also shows, “[u]sing a plurality of summers (one for each participant) would provide for separately mixing audio data from the different endpoints to obtain the functionality of generating a separate mix for each participant, which is consistent with Drell’s desire to generate a separate instance for each remote endpoint.” Reply 5 (citing Ex. 1008, 6:66–7:4; Ex. 1003 ¶ 245; Pet. 43–49). As the Petition also shows and as summarized above, providing separate mixed audio for each participant according to Knappe’s technique provides benefits that include enhanced moderator audio and control, exclusion of undesirable echoes and the audio of the participant receiving the audio, and generation of separate audio for each conference participant. *See* Pet. 17–19, 51–52 (citing Ex. 1003 ¶¶ 264–275). This rationale applies equally to each participant in the conference.

Patent Owner also argues that the prior art does not disclose the “Second VPN Tunnel Limitation of Independent Claim 19.” PO Resp. 22 (emphasis omitted). Again, as Petitioner notes, the Petition does not challenge claim 19. Reply 14. In addition, claim 10 does not require a second VPN tunnel. Patent Owner withdraws the argument as a mistake. Sur-reply 9.

To the extent Patent Owner advances a relevant argument not addressed herein, by presenting numerous arguments not related to this case and thereby obscuring any relevant arguments that we attempted to locate

and address, Patent Owner effectively waives any argument we may have missed after searching through the Response and Sur-reply.

8. Summary of Claim 10

As summarized above, Petitioner persuasively maps claim 10 to the asserted prior art and provides reasons supported by factual underpinnings to combine the reference teachings with a reasonable expectation of success. Accordingly, we determine that Petitioner shows by a preponderance of evidence that claim 10 would have been obvious based on the combined teachings of Drell, Knappe, Elliott, Hendricks, and Doganata.

9. Dependent claims 11–18

Claims 11–18 depend directly or indirectly from independent claim 10. Petitioner contends that these claims would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Drell, Knappe, Elliott, Hendricks, and Doganata. *See* Pet. 52–63. In support, Petitioner relies on the testimony of Dr. Houh and provides citations to the reference teachings. *Id.* Petitioner persuasively maps claims 11–18 to the asserted prior art and provides reasons supported by factual underpinnings to combine the reference teachings with a reasonable expectation of success. *See id.* Patent Owner does not address Petitioner’s showing for these dependent claims. *See generally*, PO Resp.

On this full record, we determine that Petitioner shows by a preponderance of evidence that claims 11–18 would have been obvious based on the combined teachings of Drell, Knappe, Elliott, Hendricks, and Doganata.

IV. CONCLUSION

For the reasons discussed above, Petitioner has shown by a preponderance of the evidence that claims 10–18 of the '612 patent are unpatentable.¹¹ The following table summarizes our conclusions:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
10–18	103(a)	Drell, Knappe, Elliott, Hendricks, Doganata	10–18	
Overall Outcome			10–18	

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner establishes by a preponderance of evidence that challenged claims 10–18 are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

¹¹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. §§ 42.8(a)(3), (b)(2).

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