

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.

IPR2023-00379
Patent 9,094,525 B2

Before BRIAN J. McNAMARA, CHARLES J. BOUDREAU, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

SZPONDOWSKI, *Administrative Patent Judge*.

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

I. INTRODUCTION

Zoho Corporation and Zoho Corporation Pvt., Ltd. (collectively, “Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 9–20 of U.S. Patent 9,094,525 B2, issued on July 28, 2015 (Ex. 1001, “the ’525 patent”). Meetrix IP, LLC (“Patent Owner”) did not file a Preliminary Response.

We have jurisdiction under 35 U.S.C. § 314. Institution of an *inter partes* review is authorized when “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) (2016). Based on the current record, and for the reasons explained below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review.

II. BACKGROUND

A. *Real Parties in Interest*

The parties identify themselves as the real parties in interest. Pet. 2; Paper 3, 2 (Mandatory Notices of Patent Owner).

B. *Related Matters*

Petitioner and Patent Owner identify *Meetrix IP, LLC v. Zoho Corp.*, 6:21-cv-01288 (W.D. Tex.) and *Meetrix IP, LLC v. Verizon Comms., Inc.*, 6:21-cv-01289 (W.D. Tex.) as related cases. Pet. 3; Paper 3, 2.

Although not identified by Petitioner, Petitioner concurrently filed IPR2022-00378, challenging claims 1–8 of the ’525 patent. Patent Owner identifies the following *inter partes* reviews as involving related patents

challenged by Petitioner: IPR2023-00371, IPR2023-00377, IPR2023-00378, IPR2023-00380, and IPR2023-00382. Paper 3, 2.

C. The '525 Patent (Ex. 1001)

The '525 patent is titled “Audio-Video Multi-Participant Conference Systems Using PSTN [(public switched telephone network)] and Internet Networks” and is generally directed to a “multi-participant system includ[ing] a PSTN client, at least one remote client and a first participant client.” Ex. 1001, codes (54), (57). That is, the inventions claimed relate to “audio and video telecommunications for collaboration over hybrid networks.” *Id.* at 1:19–20. The PSTN client is configured to communicate audio data, and the remote clients are connected to the Internet and are configured to receive audio-visual data. *Id.* at 3:25–28.

Figure 3, which illustrates one embodiment that allows audio, video, and data collaboration information to be securely transferred between a plurality of local and remote clients with a virtual private network, is reproduced below. *Id.* at 4:56–59.

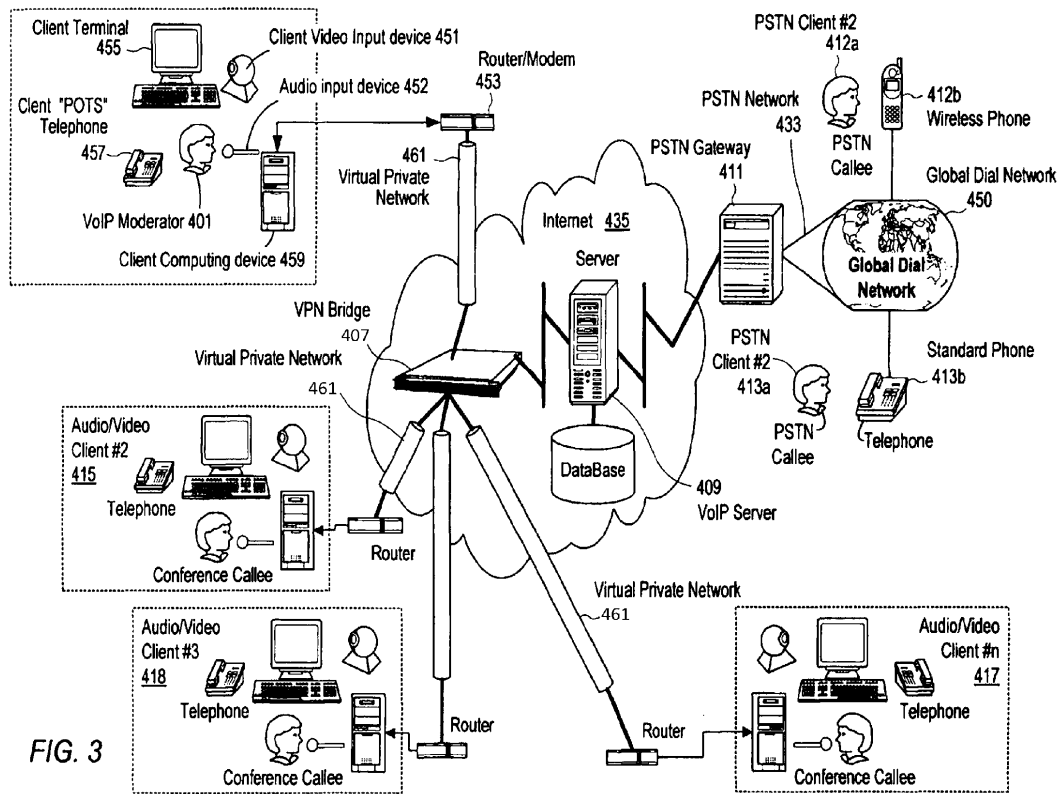


Figure 3, above, depicts voice over IP moderator 401, Internet audio video clients 415, 417, and 418 and PSTN clients 412 and 413. Ex. 1001, 5:4–23. PSTN clients 412 and 413 are connected to a wireless cell phone and standard telephone handset, respectively, which are connected to the global dial network 450 based on the PSTN 433. *Id.* at 5:18–23. Internet clients 401, 415, 417, and 418 “are connected through routers or modems 453 preferably in a virtual private network configuration 461.” *Id.* at 5:24–26. “A virtual private network bridge 461 is used to connect local and remote clients together within a secure private network.” *Id.* at 5:27–28. “A local connection from the VPN bridge 407 to the voice over IP server 409 is used to transfer conference audio from any participant on the IP network to

any participant in the PSTN.” *Id.* at 5:28–31. “Thus, the voice over IP server 409 is responsible for transcoding audio information from the virtual private network 461 to and from the PSTN gateway 411, thus bridging the PSTN and VPN together.” *Id.* at 5:31–35. VPN bridge 407 is at the center of a “star” network topology, and connections to the VPN bridge serve as a VPN tunnel.” *Id.* at 5:46–49.

The embodiment depicted in Figure 3 “provides the ability for a moderator (single member of the conference) to dial out from a desktop computer or terminal (using a novel hybrid network structure) connecting an external telephone user’s audio into the audio/video conference.” Ex. 1001, 4:60–64. “The embodiment integrates full duplex audio, video, and data connections between clients conferencing on the Internet and clients conferencing on standard telephone systems.” *Id.* at 4:64–67. “The Internet/PSTN hybrid network is the medium used for transport.” *Id.* at 4:67–5:1. The ’525 patent also describes encoding and decoding using audio and video codecs of the International Telecommunication Union (ITU) H.323 standard, which “focuses on the transmission of audio and video information through the Internet or switched private networks,” and data collaboration capability as described in the ITU T.120 multimedia conferencing standard. *Id.* at 1:54–58, 2:57–63, 3:12–14.

D. Illustrative Claim

Among the challenged claims, claims 9 and 17 are independent. Independent claim 9 is reproduced below, with Petitioner’s identifiers in brackets.

9. [9.P] A non-transitory computer-readable medium including instructions for a multi-participant conference process

to be executed by a local moderator computer, the process comprising:

[9.1] receiving audio data from a telephone through a public switched telephone network (P[ST]N);

[9.2] receiving audio data and video data from a first remote computer through an Internet,

[9.3] receiving audio data and video data from a second remote computer through the Internet;

[9.4] receiving audio data from a local audio input device communicatively connected to the local moderator computer;

[9.5] receiving video data from a local video input device communicatively connected to the local moderator computer;

[9.6] mixing the audio data received from the telephone with the audio data received from the local audio input device and the video data received from the local video input device into mixed audio-video data;

[9.7] transmitting the mixed audio-video data to the first remote computer and the second remote computer;

[9.8] mixing the audio data received from the first remote computer and the audio data received from the second remote computer with the audio data received from the local audio input device into mixed audio data;

[9.9] compressing the mixed audio data;

[9.10] transmitting the compressed mixed audio data to the telephone;

[9.11] and transmitting collaboration data to the first remote computer and the second remote computer.

Ex. 1001, 10:44–11:6.

E. Prior Art and Asserted Challenge to Patentability

Petitioner asserts that claims 9–20 are unpatentable on the following challenge (Pet. 4):

Claims Challenged	35 U.S.C. § ¹	Basis/References
9–20	103(a)	Drell, ² Knappe, ³ Elliott ⁴

In support of its proposed challenge, Petitioner relies on a Declaration of Henry H. Houh, Ph.D. *See* Ex. 1003.

III. ANALYSIS

A. Legal Standards

A claim is unpatentable under 35 U.S.C. § 103(a) if “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). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness,

¹ Because the ’525 patent issued from a patent application that was filed before March 16, 2013, patentability is governed by the version of 35 U.S.C. § 103 preceding the Leahy-Smith America Invents Act (“AIA”), Pub L. No. 112–29, 125 Stat. 284 (2011).

² U.S. Patent No. 7,089,285 B1 (issued Aug. 8, 2006) (Ex. 1008).

³ U.S. Patent No. 7,180,997 B2 (issued Feb. 20, 2007) (Ex. 1006).

⁴ U.S. Patent No. 6,690,654 B2 (issued Feb. 10, 2004) (Ex. 1007).

i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418. Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418; *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (a finding of a motivation to combine “must be supported by a ‘reasoned explanation’” (citation omitted)).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3)); *see also Intelligent Bio-Sys.*, 821 F.3d at 1369. Therefore, to prevail in an *inter partes* review, Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. At this preliminary stage, we determine whether the information presented in the Petition shows there is a reasonable likelihood that Petitioner would prevail in establishing that at least one of the

challenged claims would have been obvious over the proposed combinations of prior art.

B. Level of Ordinary Skill in the Art

Petitioner asserts a person of ordinary skill in the art 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.

Pet. 8 (citing Ex. 1003 ¶¶ 24–27).

At this stage of the proceeding, Patent Owner does not dispute the level of ordinary skill in the art. We find Petitioner's proposal is consistent with the level of ordinary skill in the art reflected by the prior art of record, and, therefore, adopt Petitioner's proposed level of ordinary skill in the art for purposes of this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

Petitioner contends that no terms require express construction, and asserts that the Petition “analyzes the claims consistent with their ordinary and customary meaning as would be understood by a [person of ordinary skill in the art] in light of the specification.” Pet. 9. For purposes of this Decision, given that no claim terms are in controversy on the current record, we find that no express claim construction is necessary. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Alleged Obviousness Over Drell, Knappe, and Elliott

Petitioner contends claims 9–20 would have been obvious over the combination of Drell, Knappe, and Elliott. Pet. 13–65. For the reasons that follow, we are persuaded that the evidence, including Dr. Houh’s testimony, sufficiently supports Petitioner’s arguments and, therefore, establishes a reasonable likelihood of prevailing with respect to this challenge at this stage of the proceeding.

1. Drell (Ex. 1008)

Drell is titled “Videoconferencing Apparatus Having Integrated Multi-Point Conference Capabilities” and is generally directed to 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, codes (54), (57).

Figure 1, reproduced below, depicts an exemplary operating environment of the multi-point conferencing application:

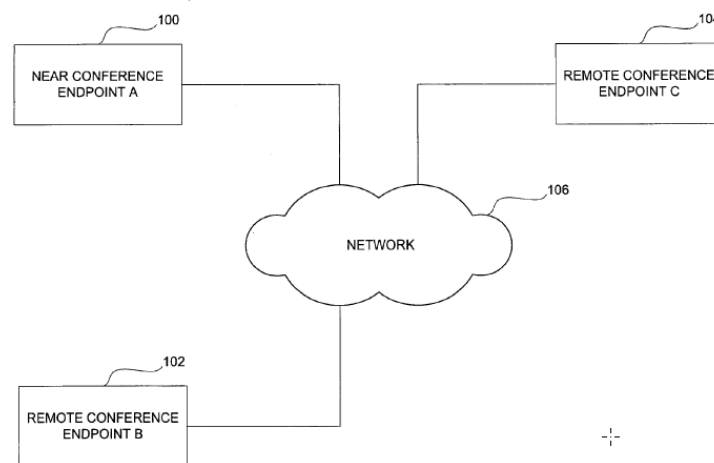


FIG. 1

Figure 1 depicts remote conference endpoint 100 and remote conference endpoint 104 connected via network 106 to near conference endpoint 102, which includes Drell’s “multi-point (MP) conferencing application” and

“call manager application.” Ex. 1008, 3:4–8, 4:11–13. “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.” Ex. 1008, 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 a “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.

Figure 2, reproduced below, depicts in block form the various components of near conference endpoint 100:

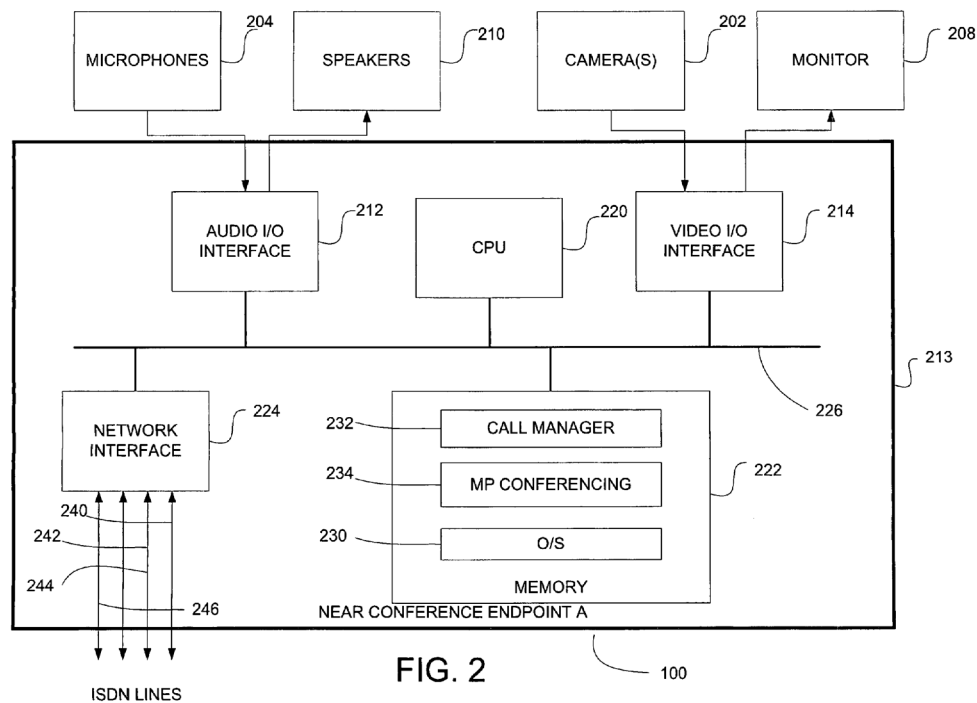


FIG. 2

Figure 2 shows near conference endpoint 100 includes, among other things, conventional video camera 202 and microphone 204 to generate video and audio signals, video monitor 208 and loudspeaker 210 to present images and speech of the remote conference participants, CPU 220, audio I/O interface 212, console electronics 213, video I/O interface 214, and memory 222 including call manager application 232 and MP conferencing application 234. Ex. 1008, 3:39–53.

“Call manager application 232 controls the establishment and termination of connections between near conferencing endpoint 100 and remote conference endpoints 102 and 104.” Ex. 1008, 4:15–18. “MP conferencing application 234 is configured to instantiate a processing train for each remote conference endpoint 102 and 104 to which near conference endpoint 100 is connected.” *Id.* at 4:21–24. “The processing trains process

audio and video data streams received from remote conferencing endpoints 102 and 104.” *Id.* at 4:25–26. “The processed audio and video data streams are combined with each other and with locally generated audio and video streams, and the combined audio and video streams are thereafter distributed to remote conferencing endpoints 102 and 104.” *Id.* at 4:27–31.

Figure 3, which depicts components of MP conferencing application 234, is reproduced below:

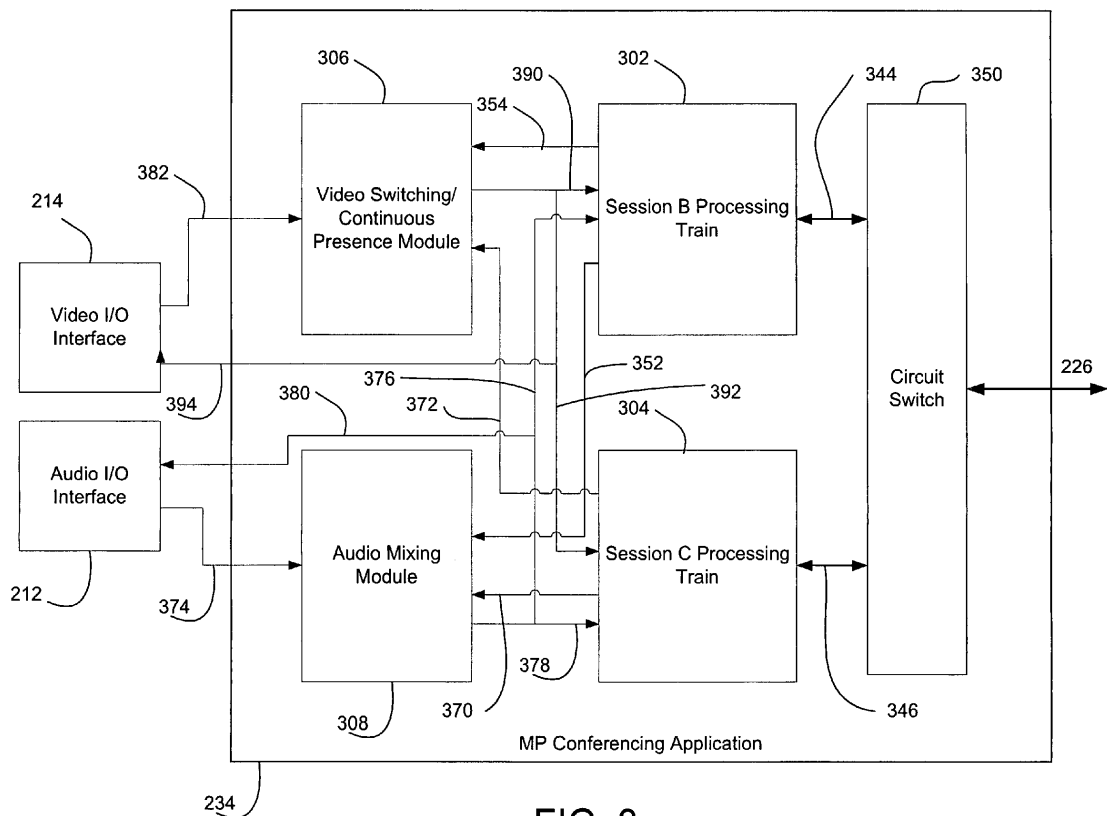


FIG. 3

Figure 3 depicts MP conferencing application, including circuit switch 350, a plurality of processing trains 302 and 304, a video switching/continuous presence module 306, and an audio mixing module 308. Ex. 1008, 4:32–38. Audio mixing module 308 “is configured to combine audio data received

from remote conference endpoints 102 and 104 with locally generated audio data (received from audio I/O interface 212[])]” and “generates an output audio data stream (or plurality of output audio data streams).” *Id.* at 5:8–18. Video switching/continuous presence module 306 “combines video data received from remote conference endpoints 102 and 104 with locally generated video data (received from video I/O interface 214 via video data path 382” and generates an output video stream (or a plurality of output video streams). *Id.* at 5:26–46. The output audio and video data streams are “encoded and combined to form a mixed encoded audio/video data stream.” *Id.* at 5:50–52. Processing train 302 includes communication process 404 that “multiplexes the encoded audio and video data streams into a single audio/video data stream 344.” *Id.* at 5:65–66, 6:46–48; *see id.* at Fig. 4.

2. *Knappe (Ex. 1006)*

Knappe is titled “Method and System for Improving the Intelligibility of a Moderator During a Multiparty Communication Session” and is generally directed to “an improved method and system for enhancing the intelligibility of a moderator during a multiparty communication session . . . [to] enhance[] the ability of the moderator to control the organization, flow and/or control of the conference.” Ex. 1006, code (54), 1:59–67.

Figure 1, which depicts communication system 12, is reproduced below:

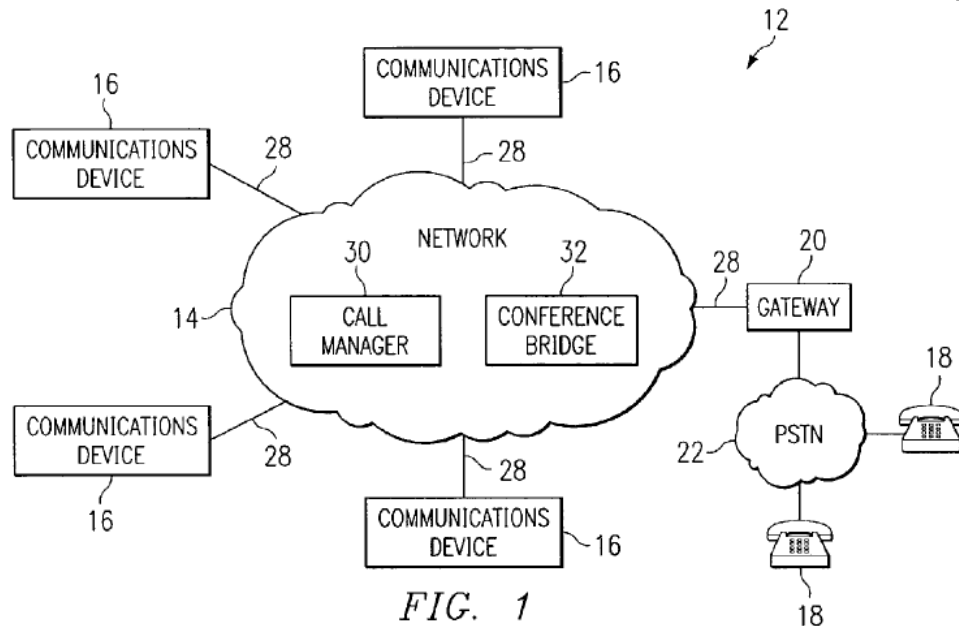


Figure 1 is a block diagram of communication system 12, which “includes a network 14 connecting a plurality of communication devices 16 to each other and to standard analog telephones 18 through a gateway 20 and the public switched telephone network (PSTN) 22.” Ex. 1006, 3:41–45.

The “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. “The communication devices 16 comprise IP or other digital telephones, personal and other suitable computers or computing devices, personal digital assistants (PDAs), 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.” *Id.* at 3:62–4:1. “The gateway 20 provides conversion between analog and/or digital formats.” *Id.* at 4:18–19.

Network 14 includes call manager 30 and conference bridge 32. Ex. 1006, 4:29–30. “The call 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. “During the multiparty communication sessions, participants are connected and stream media through the conference bridge 32.” *Id.* at 5:31–33. Under control of call manager 30, “conference bridge 32 provides real-time multiparty audio connections between three or more participants.” *Id.* at 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. “[M]ultiparty communications sessions includ[e] real-time audio streams and/or video streams.” *Id.* at 5:46–47.

Conference bridge 32 includes a mixer 58. Ex. 1006, 5:49–52. “The mixer 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. Figure 3, reproduced below, illustrates mixer 58 in a monaural embodiment.

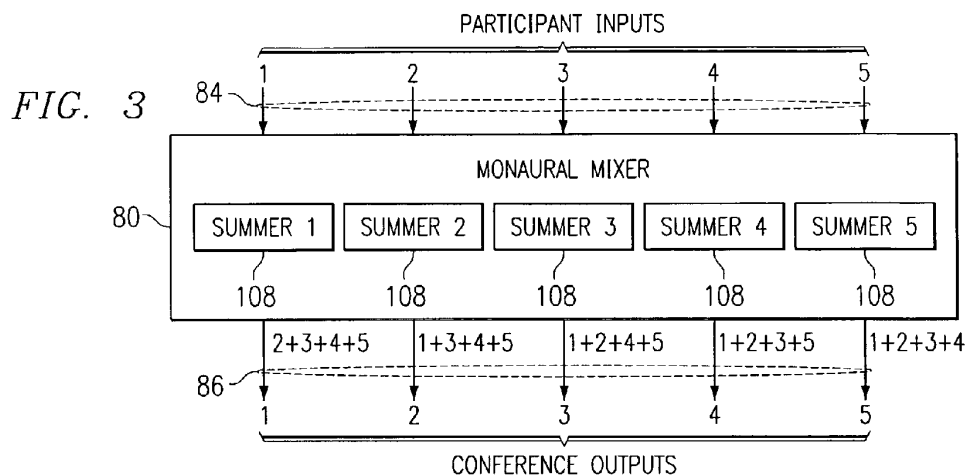


Figure 3 depicts monaural mixer 80 receiving participant input streams 84 and combining the streams in summers 82 to generate conference output streams 86 for each participant in the conference call. Ex. 1006, 6:59–65.

“The summer 82 combines the audio input streams to generate a conference output stream for delivery to the participant.” *Id.* at 6:65–67. Knappe states:

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. Similarly, the conference output stream of participant 2 includes the audio inputs of participants 1 and 3–5. The conference output stream of participant 3 includes the audio inputs of participants 1–2 and 4–5. The conference output stream of participant 4 includes the audio inputs of participants 1–3 and 5. The conference output stream of participant 5 includes the audio inputs of participants 1–4.

Id. at 7:1–11. One of the participants may be the conference moderator. *Id.* at 7:12. “The audio input 84 of the conference moderator may be amplified and/or the audio input 84 of the remaining participants attenuated to focus on or provide higher prominence to the audio input 84 of the conference moderator.” *Id.* at 7:12–15.

3. *Elliott (Ex. 1007)*

Elliott is titled “Method and System for Multi-Media Collaboration Between Remote Parties,” and generally relates to “computer networks and specifically to a method and system for multi-media collaboration between remote parties.” Ex. 1007, code (54), 1:27–30. “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.

“Multi-media collaboration services allow two or more parties to exchange information in a conference setting,” and “[t]hese services can be readily

provided over the Internet and include collaborative Web browsing, audio conferencing, video conferencing, and application sharing.” *Id.* at 1:40–44.

Figure 1 of Elliott is reproduced below:

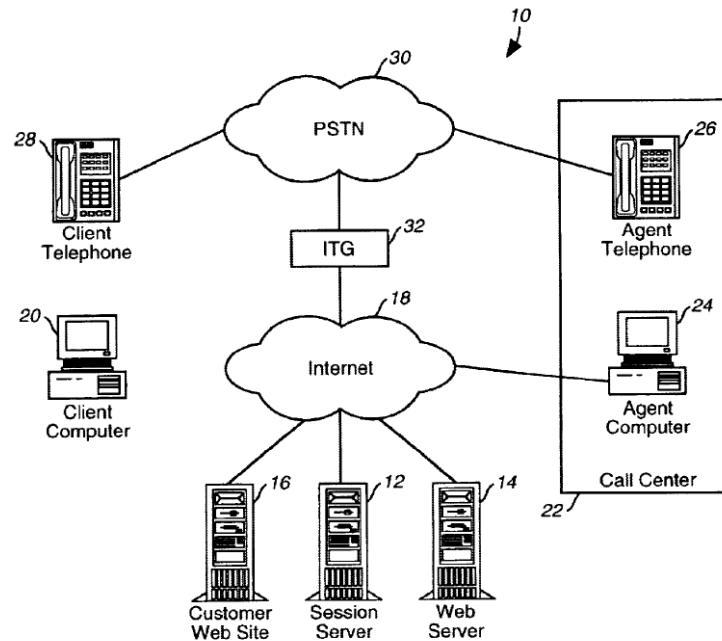


FIG. 1

Figure 1, above, illustrates a block diagram of a system architecture 10 for multi-media collaboration between remote parties, including client computers 20 and client telephone 28 connected by network 18, “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, 2:38–40, 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.

“Session server 12 is software that manages communication sessions among one or more agents and one or more clients” and may be “a conference server that follows the ITU T.120 standard.” Ex. 1007, 5:39–41, 5:49–50. Session server 12 is “able to set up to conduct video conferences, audio conferences, and data conferences with application sharing.” *Id.* at 5:55–56. “Collaborative Web browsing can also be enabled with URL push technology. During the course of a collaborative session, one party can push a URL to another party.” *Id.* at 5:57–59.

4. *Analysis of Independent Claim 9*

Petitioner contends that Drell, Knappe, and Elliott, alone or in combination, teach each limitation of independent claim 9. Pet. 22–46. In support, Petitioner identifies certain passages and figures in the references and explains their significance with respect to the corresponding claim limitation. *Id.* Petitioner also provides reasons, supported by the testimony of Dr. Houh, why it would have been obvious to one of ordinary skill in the art to combine Drell, Knappe, and Elliott. *Id.* at 16–21.

- a) 9[P]: *A non-transitory computer-readable medium including instructions for a multi-participant conference process to be executed by a local moderator computer, the process comprising:*

Petitioner relies on the combination of Drell and Knappe to teach the preamble. Pet. 22–24. Petitioner contends that Drell teaches a “near conference endpoint 100” with “a central processing unit (CPU) 220 for executing program instructions, a memory 222 for storing applications, data, and other information,” which renders obvious a “*non-transitory computer-*

readable medium including instructions.” Id. at 22 (citing Ex. 1008, 3:39–63, Fig. 2; Ex. 1003 ¶¶ 380–381, 387). Petitioner further contends that near conference endpoint 100 includes “memory 222 [that stores] . . . a call manager application 232, and the MP conferencing application 234.” *Id.* (alteration in original) (citing Ex. 1008, 4:11–13). Petitioner contends that a person of ordinary skill in the art would have understood that “the call manager application 232 and the MP conferencing application 234 stored in near conference endpoint 100 facilitate a multi-participant conferencing process between the participants at the near conference endpoint 100 and remote conference participants 102 and 104 (in other words, a multi-participant conference process).” *Id.* at 22–23 (citing Ex. 1003 ¶¶ 382, 383). Petitioner contends that it would have been obvious to a person of ordinary skill in the art “that the stored applications comprise instructions because computer applications and software generally comprise instructions.” *Id.* at 23 (citing Ex. 1003 ¶ 384); *see also* Ex. 1003 ¶¶ 385–388).

Petitioner further contends that Knappe teaches that at least one of the conference participants may be a moderator, and that it would have been obvious to a person of ordinary skill in the art “to designate the user of Drell’s near conference endpoint 100 as the moderator . . . when the near conference endpoint 100 is facilitating the conference call.” Pet. 23 (citing Ex. 1006, 8:52–56; Ex. 1003 ¶¶ 389, 390). Petitioner contends that doing so “would allow for the user of the near conference endpoint (acting as the moderator) to control the flow and organization of the conference.” *Id.* (citing Ex. 1006, 1:53–55; Ex. 1003 ¶¶ 148–168, 390). Petitioner, therefore, contends that the combination “teaches that the user of the near conference endpoint 100 is a ‘*moderator*’ computer” and that the “instructions are to be

executed by a CPU of the moderator near conference endpoint,” i.e., that the “instructions” are “to be executed by a local moderator computer.” *Id.* at 24 (citing Ex. 1008, Fig. 1; Ex. 1003 ¶¶ 391, 392).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell and Knappe teach the recited elements for purposes of institution.⁵

b) [9.1] receiving audio data from a telephone through a public switched telephone network (PSTN);

Petitioner relies on Drell and Knappe to teach this limitation. Pet. 24–27. Petitioner contends that Drell discloses transmission of audio and video data over the PSTN and the Internet, and, therefore, connects a remote PSTN conference endpoint to a videoconferencing system via the PSTN. Pet. 24–25 (citing Ex. 1008, 3:20–37; Ex. 1003 ¶¶ 181, 182, 394, 395).

Petitioner further contends that a person of ordinary skill in the art would understand that standard telephones communicate over the PSTN, and that Knappe describes “multiparty communication sessions” with use of “telephone 18 and gateway 20 . . . capable of communicating real-time audio, video and/or other information over the network 14.” Pet. 25 (citing Ex. 1003 ¶¶ 183–185, 395, 396; Ex. 1006, 3:27–28, 3:65–4:1). Petitioner, therefore, contends that it would have been obvious to a person of ordinary skill in the art “to implement Drell’s PSTN conference endpoint as a PSTN telephone, because it would facilitate the communications of audio data over the PSTN during conferencing,” thus rendering obvious “a telephone

⁵ Petitioner does not argue that the preamble limits claim 9. Although we find that the evidence supports that the prior art teaches the preamble, we make no determination at this stage of the proceeding whether the preamble of claim 9 is limiting.

through a public switched telephone network (PSTN).” Id. (citing Ex. 1003 ¶ 397).

Petitioner further contends that Drell teaches that communication between conference endpoints includes audio streams, and therefore, teaches “*receiving audio data from a telephone through a public switched telephone network (PSTN).*” Pet. 25–26 (citing Ex. 1008, 4:25–26; Ex. 1003 ¶¶ 181, 184). Petitioner contends that Knappe teaches that audio data from a PSTN telephone would be communicated through a gateway. *Id.* (citing Ex. 1006, 4:18–25). Petitioner contends that it would have been obvious to a person of ordinary skill in the art to use Knappe’s gateway in Drell’s system to convert the standard audio data from the PSTN telephone conference endpoints into a format suitable for conference endpoints on an Internet network. *Id.* at 26 (citing Ex. 1003 ¶¶ 148–168, 184–185, 397–398; Ex. 1006, Fig. 1); *see also id.* at 26–27 (citing Ex. 1008, Fig. 1 (annotated with Ex. 1006, Fig. 1); Ex. 1003 ¶¶ 399, 400).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell and Knappe teach this limitation for purposes of institution.

c) [9.2] receiving audio data and video data from a first remote computer through an Internet,

Petitioner relies on Drell to teach this limitation. Pet. 27–29. Petitioner contends that Drell’s network 106 “may comprise a packet switched network, such as the Internet.” *Id.* at 27 (citing Ex. 1008, 3:33–34). Petitioner further contends that Drell’s remote conference endpoints 102 and 104 transmit and receive both video (image) data and audio (speech) data, and that a person of ordinary skill in the art would understand

that Drell’s remote conference endpoint 102 could be a “*computer*,” i.e., a “*first remote computer*.” *Id.* at 27–28 (citing Ex. 1008, 3:4–23, 4:39–53; Ex. 1003 ¶ 406). Petitioner contends that a person of ordinary skill in the art would understand that Drell’s near conference endpoint 100 receives audio and video data from remote conference endpoint 102 through the Internet. *Id.* at 28–29 (citing Ex. 1008, Fig. 1; Ex. 1003 ¶¶ 193, 402, 403).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell teaches this limitation for purposes of institution.

d) [9.3] receiving audio data and video data from a second remote computer through the Internet;

Petitioner relies on Drell to teach this limitation. Pet. 29–30. Petitioner relies on its contentions for [9.P] and limitation [9.2], and further contends that remote conference endpoint 104 renders obvious “*a second remote computer*.” *Id.* at 29 (citing Ex. 1008, Fig. 1; Ex. 1003 ¶ 409). Petitioner, therefore, contends that near conference endpoint 100 receives audio and video data from the second remote conference endpoint 104 through the Internet network 106. *Id.* at 30 (citing Ex. 1003 ¶¶ 410–411).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell teaches this limitation for purposes of institution.

e) [9.4] receiving audio data from a local audio input device communicatively connected to the local moderator computer;

Petitioner relies on Drell to teach this limitation. Pet. 30–32. Specifically, Petitioner relies on microphone 204 at Drell’s near conference endpoint 100 providing audio signals representative of “locally generated . . . speech” to teach this limitation. *Id.* at 31–32 (citing Ex. 1008,

3:39–51, 4:32–38, 5:8–13; Ex. 1003 ¶¶ 414–417); *see also* Ex. 1008, Fig. 2. Petitioner contends microphone 204 is “*communicatively connected to*” near conference endpoint 100 and its MP conferencing application 234 via audio I/O interface 212. *Id.* at 32 (citing Ex. 1008, Fig. 2; Ex. 1003 ¶¶ 415–418).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell teaches this limitation for purposes of institution.

f) [9.5] receiving video data from a local video input device communicatively connected to the local moderator computer;

Petitioner relies on Drell to teach this limitation. Pet. 30–32.

Specifically, Petitioner relies on video camera 202 at Drell’s near conference endpoint 100 providing video signals representative of “locally generated images” to teach this limitation. *Id.* at 32–33 (citing Ex. 1008, 3:39–53, 4:32–38, 5:26–31; Ex. 1003 ¶¶ 421–426); *see also* Ex. 1008, Fig. 2.

Petitioner contends video camera 202 is “*communicatively connected to*” near conference endpoint 100 and its MP conferencing application 234 via video I/O interface 214. *Id.* at 33 (citing Ex. 1008, Fig. 2; Ex. 1003 ¶ 423).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell teaches this limitation for purposes of institution.

g) [9.6] mixing the audio data received from the telephone with the audio data received from the local audio input device and the video data received from the local video input device into mixed audio-video data;

Petitioner relies on Drell and Knappe to teach this limitation. Pet. 34–39. Petitioner relies on its contentions for limitations [9.1], [9.4], and [9.5], and further contends that Drell’s audio mixing module 308 receives locally

generated audio data from microphone 204 (“*local audio input device*”) via audio I/O interface 212, and video switching/continuous presence module 306 receives locally generated video data from video camera 202 (“*local video input device*”) via video I/O interface 214. *Id.* at 34 (citing Ex. 1003 ¶ 428).

Petitioner contends that Drell’s audio mixing module 308 renders obvious “*mixing the audio data received from the telephone with the audio data received from the local audio input device.*” Pet. 35 (citing Ex. 1003 ¶ 431). Petitioner contends that it would have been obvious to a person of ordinary skill in the art that (1) when “Drell’s conference system includes an additional conference endpoint connected via the PSTN . . . , the audio data received from the PSTN telephone conference endpoint would also be combined in the audio mixing module 308” and (2) “during conferencing, the audio mixing module 308 would mix the audio data stream from the microphone of moderator near conference endpoint 100 with the audio data stream from the PSTN telephone conference endpoint . . . so that the participant using the PSTN telephone could participate in the conference call, with the participant’s speech being included [in] the mixed audio data streams transmitted to other participants.” *Id.* at 34–35 (citing Ex. 1003 ¶¶ 430, 431; Ex. 1008, 5:48–54, 6:46–52, 7:30–31).

Petitioner contends that the video output by Drell’s video switching/continuous presence module 306 would include video data from video camera 202, and teaches “*the video data received from the local video input device.*” Pet. 35–36 (citing Ex. 1008, 5:26–30, 5:39–47; Ex. 1003 ¶ 432). Petitioner further contends that Drell’s communication process 404 receives mixed audio data from audio mixing module 308 and mixed video

data output by the video switching/continuous presence module 306, and then “multiplexes the encoded audio and video data streams into a single audio/video data stream.” *Id.* at 36 (citing Ex. 1008, 4:21–24, 5:51–63, 5:65–66, 6:33–48, Fig. 4; Ex. 1003 ¶ 433). Petitioner contends that this “single audio/video data stream” that is output by communication process 404 renders obvious “*mixed audio-video data.*” *Id.* at 36–37 (citing Ex. 1008, Fig. 3; Ex. 1003 ¶¶ 433–435).

Petitioner contends that limitation [9.7] recites that the “*mixed audio-video data*” is transmitted to the “*first remote computer*” and “*second remote computer.*” Pet. 37–38 (citing Ex. 1001, 10:64–65; Ex. 1003 ¶ 436).

According to Petitioner, if “*mixed audio-video data*” is construed to exclude “data from the recipient of the mixed data,”⁶ i.e., data from the first and second remote computer, the prior art still teaches the limitation. *Id.* at 38 (citing Ex. 1038, 30; Ex. 1003 ¶ 436). Specifically, Petitioner contends that Knappe teaches that participants’ audio streams “are mixed so that ‘each participant receives the audio input of each other participant,’ but not the participant’s own audio input.” *Id.* (citing Ex. 1006, 5:35–39, 7:1–11; Ex. 1003 ¶ 437). Petitioner contends that implementing this functionality “would complement Drell’s teaching of generating ‘separate processing trains for signal streams from/to each of the remote conference endpoints.’” *Id.* (citing Ex. 1008, 2:19–21). According to Petitioner, a person of ordinary skill in the art would understand that “receiving one’s own audio creates the possibility of audio feedback or echo, which adversely affects the conference experience.” *Id.* (citing Ex. 1003 ¶ 438). Petitioner also contends that

⁶ Petitioner contends that this construction was adopted in prior district court litigation. Pet. 38 (citing Ex. 1038, 30).

Knappe teaches limiting the number of participants' audio streams that are mixed together in order to prevent overlapping speech from "rendering the conversation unintelligible" and "provide[] higher prominence to the audio input 84 of the conference moderator." *Id.* at 38–39 (citing Ex. 1006, 9:18–21, 9:29–30, 7:13–15; Ex. 1003 ¶ 439).

Based on these disclosures in Knappe, Petitioner contends that it would have been obvious to a person of ordinary skill in the art "for Drell's audio mixing module 308 to exclude from its mixed audio output the audio data received from the remote conference endpoints 102 and 104 ('first and second remote computers')" because doing so would provide certain benefits, such as furthering Drell's goal of generating separate processing instances for each conference endpoint, increasing the intelligibility of the moderator, enhancing the moderator's control over the conference, and avoiding undesirable audio effects, such as feedback. Pet. 39 (emphasis omitted) (citing Ex. 1003 ¶¶ 148–168, 440, 441).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell and Knappe teaches this limitation for purposes of institution.

h) [9.7] transmitting the mixed audio-video data to the first remote computer and the second remote computer;

Petitioner relies on the combination of Drell and Knappe to teach this limitation. Pet. 39–40. Petitioner relies on its contentions for limitations [9.2], [9.3], and [9.6], and further contends that Drell discloses "transmitting the combined audio and video signals to each of the plurality of remote conference endpoints." *Id.* (citing Ex. 1008, 7:30–31, 3:20–64, 5:51–64; Ex. 1003 ¶¶ 444–445).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell and Knappe teaches this limitation for purposes of institution.

- i) *[9.8] mixing the audio data received from the first remote computer and the audio data received from the second remote computer with the audio data received from the local audio input device into mixed audio data;*

Petitioner relies on the combination of Drell and Knappe to teach this limitation. Pet. 40–42. Petitioner relies on its contentions for limitations [9.2], [9.3], [9.4], and [9.6], and further contends that Drell teaches “mixing the audio data received from the first remote conference endpoint 102 and the second remote conference endpoint 104 with the locally generated audio data received from the microphone 204 into mixed audio data.” *Id.* at 40–41 (citing Ex. 1008, 5:8–23, code (54), 2:34–52, 3:45–48, 4:25–31; Ex. 1003 ¶¶ 448–449).

Petitioner contends that the “*mixed audio data*” is further recited in limitations [9.9] and [9.10] as being transmitted to a “*telephone*.” Pet. 41 (Ex. 1001, 11:3–6; Ex. 1003 ¶ 450). For similar reasons as discussed above for limitation [9.6], Petitioner contends that, in the event “*mixed audio data*” is interpreted to exclude “data from the recipient of the mixed data,” the combination of Drell and Knappe still teaches this limitation, i.e., that a person of ordinary skill in the art “would have been motivated to have Drell’s audio mixing module 308 to exclude from its mixed audio output the audio data received from the PSTN telephone conference endpoint.” *Id.* at 41–42 (citing Ex. 1038, 30; Ex. 1003 ¶¶ 148–168, 436, 437, 440, 451–454; Ex. 1006, 5:35–39, 7:1–11).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell and Knappe teaches this limitation for purposes of institution.

j) *[9.9] compressing the mixed audio data;*

Petitioner relies on Drell and Knappe to teach this limitation. Pet. 42–43. Petitioner relies on its contentions for limitation [9.6], and further contends that Drell teaches encoding audio data using a compression algorithm. *Id.* at 42 (citing Ex. 1008, 6:33–45; Ex. 1003 ¶ 457). Petitioner contends that Drell teaches that its communication process includes a “H.323 (packet-based) process.” *Id.* (citing Ex. 1008, 2:17–33). Petitioner contends that a person of ordinary skill in the art “would have understood that H.323 processing includes using compression codecs and protocols described in the H.323 standard.” *Id.* (citing Ex. 1003 ¶¶ 458–459).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell and Knappe teaches this limitation for purposes of institution.

k) *[9.10] transmitting the compressed mixed audio data to the telephone;*

Petitioner relies on Drell and Knappe to teach this limitation. Pet. 43–45. Petitioner relies on its contentions for limitations [9.1] and [9.9], and further contends that Drell teaches that the near conference endpoint 100 “transmit[s] the combined audio and video signals to each of the plurality of remote conference endpoints.” *Id.* at 43 (alteration in original) (citing Ex. 1008, 7:27–31). Petitioner contends that Drell discloses that “[i]n the transmission mode . . . the received data streams are then encoded and combined to form a mixed encoded audio/video data stream, and the

encoded audio/video data stream is transmitted.” *Id.* (alterations in original) (citing Ex. 1008, 5:48–54). Petitioner contends that, as discussed in connection with limitation [9.9], Drell’s encoding step includes performing audio compression, so the transmitted “encoded audio/video data stream” includes the compressed mixed audio data. *Id.* (citing Ex. 1003 ¶¶ 462–463). Petitioner, therefore, contends that it would have been obvious to a person of ordinary skill in the art to “transmit the compressed mixed audio data to the [PSTN] telephone” conference endpoint. *Id.* (internal quotation marks and brackets omitted; alteration in original) (citing Ex. 1003 ¶¶ 463–465). Petitioner further contends that, as discussed in connection with limitation [9.1], it would have been obvious to a person of ordinary skill in the art to utilize a gateway, as taught by Knappe, in Drell’s system. *Id.*

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell and Knappe teaches this limitation for purposes of institution.

l) [9.11] and transmitting collaboration data to the first remote computer and the second remote computer.

Petitioner relies on Drell, Knappe, and Elliott to teach this limitation. Pet. 45–46. Petitioner relies on its contentions for limitations [9.2] and [9.3], and further contends that Drell teaches “that MP conferencing application 234’s ‘processing train 302 may include a data codec for coding and encoding still images and the like received from and transmitted to remote conference endpoints.’” *Id.* at 45 (citing Ex. 1008, 6:53–56). Petitioner contends that a person of ordinary skill in the art would have understood that Drell’s “still images” which are encoded with a “data codec,” teach “*collaboration data.*” *Id.* (citing Ex. 1003 ¶¶ 471–472). Petitioner also

contends that Drell’s disclosure of H.323 (packet-based) process would have led a person of ordinary skill in the art to understand disclosure of “*collaboration data*,” because H.323 was a well-known standard that recommended T.120 collaboration data. *Id.* (citing Ex. 1008, 2:26–33; Ex. 1003 ¶¶ 472–474). Therefore, Petitioner contends that Drell teaches this limitation. *Id.* at 45–46.

Petitioner further contends that Elliott teaches collaboration data in the conferencing context, including “application sharing” data, “web browsing” data, and collaboration data per the T.120 standard. Pet. 46 (citing Ex. 1007, 1:40–44, 5:54–61, 3:50–54, 6:46–54, 5:49–61). Petitioner contends that Elliot teaches “exchanging or pushing collaboration data” per the T.120 standard, which teaches “*transmitting collaboration data*,” as claimed. *Id.* (citing Ex. 1003 ¶¶ 475–476). According to Petitioner, a person of ordinary skill in the art “would understand that Drell’s processing trains 302 and 304, which include a ‘data codec’ . . . could transmit collaboration data to remote conference endpoints 102 and 104, which would allow different ways for the participants to collaborate thereby enhancing the effectiveness of the collaboration among the participants.” *Id.* (citing Ex. 1003 ¶¶ 303–317, 477); *see also* Ex. 1003 ¶ 478.

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that the combination of Drell, Knappe, and Elliott teaches this limitation for purposes of institution.

m) Motivation to Combine Drell and Knappe

In addition to the reasons discussed above in connection with certain limitations, Petitioner provides reasons, supported by the testimony of Dr.

Houh, why it would have been obvious to one of ordinary skill in the art to combine Drell and Knappe. Pet. 16–21.

Petitioner asserts that Drell and Knappe are analogous art, as both pertain “to the field of multiparty conferencing, including mixing data from Internet and PSTN conference endpoints.” Pet. 16 (citing Ex. 1008, code (54), 3:33–37; Ex. 1006, 3:41–51, 6:59–62; Ex. 1003 ¶ 148).

Petitioner provides three reasons why it would have been obvious to a person of ordinary skill in the art to designate one of Drell’s endpoint users as a moderator, as taught by Knappe: (1) “doing so would beneficially allow the user (acting as the moderator) to initiate, organize, control, and influence the conference”; (2) “as there are a finite number of participants in a conference, it would have been obvious to try designating one of Drell’s endpoint users as a moderator”; and (3) the combination is “merely the ordinary use of a common technique (designating a conference endpoint as a moderator per Knappe) in the similar system of Drell to yield predictable results of initiating, organizing, controlling, and influencing the conference.” Pet. 17 (citing Ex. 1003 ¶¶ 151–152).

Petitioner further contends that implementing Knappe’s mixers into Drell would produce beneficial results. Pet. 18 (citing Ex. 1003 ¶¶ 154–159). For example, Petitioner contends that it would have been obvious to a person of ordinary skill in the art, “when implementing a mixer in Drell, to use a plurality of mixers (one for each participant) as Knappe teaches, because this would allow for generating separate audio instances for each conference endpoint,” which would “complement Drell’s teaching of generating separate instances for each endpoint.” *Id.* (citing Ex. 1003 ¶¶ 156, 137; Ex. 1008, 2:19–21, 6:66–7:4). Petitioner further contends that a

person of ordinary skill in the art “would have been motivated to implement Drell’s mixer, per Knappe’s teachings, to include a separate summer for each participant because doing so would allow for the exclusion of audio of the participant receiving the mixed audio, thereby avoiding undesirable audio effects.” *Id.* at 19 (citing Ex. 1003 ¶ 158).

Petitioner further contends that it would have been obvious to a person of ordinary skill in the art “to encode Drell’s real-time audio data in VoIP packets and encapsulate them in [real-time protocol (RTP)] packets for transmission over the Internet, as Knappe teaches, because RTP was specifically created for applications such as Drell’s real-time conferencing application.” Pet. 19 (citing Ex. 1003 ¶ 162; Ex. 1021,⁷ 22). Petitioner also contends that a person of ordinary skill in the art “would have been motivated to apply Knappe’s VoIP and RTP teachings to Drell because they are well suited for use with H.323 packet processing,” “[t]he result would have been predictable and there would have been a reasonable expectation of success in applying Knappe’s VoIP and RTP teachings to Drell, since use of both VoIP and RTP were known in the conferencing context.” *Id.* at 20 (citing Ex. 1003 ¶ 164).

Petitioner contends that it would have been obvious to a person of ordinary skill in the art “to use in Drell’s system a gateway[, as Knappe teaches,] that receives standard audio data from PSTN conference endpoints and converts the audio data into a format (*e.g.*, VoIP packets encapsulated in RTP) suitable for conference endpoints on the Internet.” Pet. 20–21 (citing Ex. 1003 ¶ 166). According to Petitioner, this would “allow conference data

⁷ Robert Caputo, *Cisco Packetized Voice & Data Integration* (McGraw-Hill 2000).

to be transmitted between Drell's PSTN conference endpoints and near conference endpoint 100 over networks (PSTN and Internet) that utilize different protocols, thereby furthering Drell's objective." *Id.* at 21 (citing Ex. 1008, 3:20–37; Ex. 1003 ¶ 166). Petitioner further contends that the "result would have been predictable and there would have been a reasonable expectation of success in applying Knappe's gateway teachings to Drell, since both relate to similar conferencing systems and using gateways was conventional and known to be applied in the conferencing context." *Id.* (citing Ex. 1003 ¶¶ 153, 160, 164, 167).

Petitioner further contends that "any modification needed to the teachings of Drell, including implementing software programming or hardware, to accommodate the teachings of Knappe, would have been within the level of ordinary skill in the art." Pet. 21 (citing Ex. 1003 ¶ 153). According to Petitioner, the proposed combination "permits, but does not require, physical incorporation of elements from Drell and Knappe." *Id.* (citing Ex. 1003 ¶ 168).

Based on our review and consideration of the current record, we determine that, for purposes of institution, Petitioner has provided sufficient reasons why it would have been obvious to one of ordinary skill in the art to combine Drell, Knappe, and Elliott.

n) Conclusion for Independent Claim 9

Based on our review and consideration of the current record, we determine that Petitioner has adequately shown that the combination of Drell, Knappe, and Elliott teaches the limitations in claim 9, and provided sufficient rationale for combining the references for purposes of institution. Accordingly, we determine, on the current record and for purposes of this

Decision, that the information presented in the Petition demonstrates a reasonable likelihood that claim 9 is unpatentable under 35 U.S.C. § 103(a) over Drell, Knappe, and Elliott.

5. *Claims 10–20*

Petitioner additionally contends that claims 10–20 are obvious over the combination of Drell, Knappe, and Elliott. Pet. 47–65. Because we have determined above that, at this stage of the proceeding, and on the present record, the information presented in the Petition shows there is a reasonable likelihood that Petitioner would prevail with respect to at least claim 9 based on alleged obviousness over Drell, Knappe, and Elliott, we need not address, in this Decision, Petitioner’s challenge to claims 10–20.

6. *Summary of Ground 1*

We find that Petitioner has demonstrated a reasonable likelihood that at least claim 9 is unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Drell, Knappe, and Elliott.

IV. CONCLUSION

After considering the evidence and arguments presented in the Petition, we determine Petitioner has established a reasonable likelihood of prevailing on its assertion that at least one claim of the ’525 patent is unpatentable. Accordingly, we institute an *inter partes* review on all the challenged claims on the challenge presented in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018) (holding that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in

the petition”). At this stage of the proceeding, we have not made a final determination as to the patentability of these challenged claims.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314, *inter partes* review is instituted as to the challenged claims of the ’525 patent on the challenge of unpatentability presented in the Petition; and

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

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