

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.

IPR2023-00378
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 1–8 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 IPR2022-00379, challenging claims 9–20 of the ’525 patent. Patent Owner also identifies the following *inter partes* reviews as involving related patents

challenged by Petitioner: IPR2023-00371, IPR2023-00377, IPR2023-00379, 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 PTSN 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. Ex. 1001, 4:56–59.

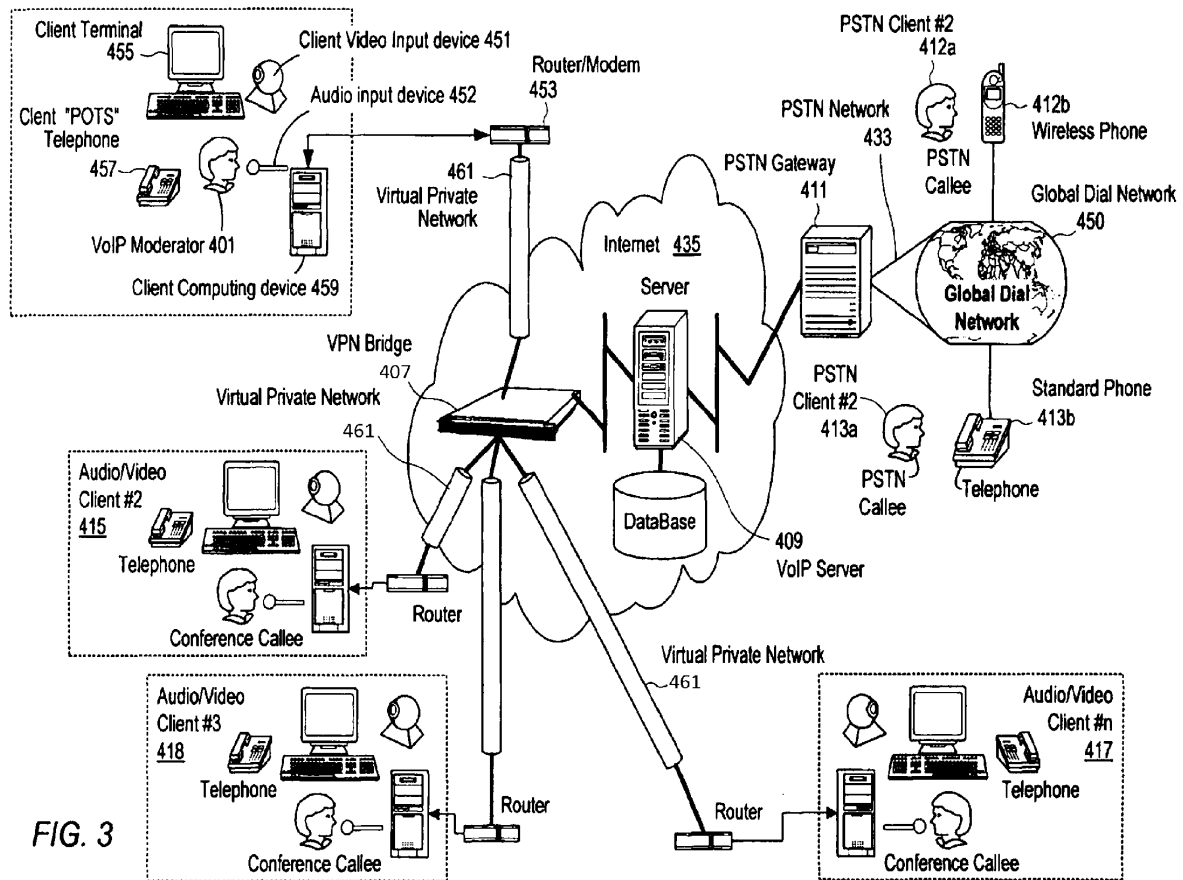


Figure 3, above, depicts voice over IP moderator 401, Internet audio video clients 415, 417, and 418 and PSTN clients 412 and 413. Ex. 1001, 5:4–23. PSTN clients 412 and 413 are connected to a wireless cell phone and standard telephone handset, respectively, which are connected to the global dial network 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.

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.

D. Illustrative Claim

Among the challenged claims, claim 1 is independent. Independent claim 1 is reproduced below, with Petitioner’s identifiers in brackets.

1. [1.P] A system for supporting a multi-participant conference call comprising:

[1.1] a first mixer that mixes a Public Switched Telephone Network (PSTN) client audio data stream with a moderator audio-video data stream into a first mixed data stream;

[1.2.1] a first transport output that transmits the first mixed data stream to at least one remote client that receives the first mixed data stream, [1.2.2] the at least one remote client

communicatively coupled to the Internet, which generates a remote client audio-video data stream;

[1.3] a second mixer that mixes the moderator audio-video data stream with the remote client audio-video data stream into a second mixed data stream; and

[1.4] a second transport output that transmits a mixed audio data stream, corresponding to the second mixed data stream, to the PSTN client.

Ex. 1001, 10:2–17.

E. Prior Art and Asserted Challenges to Patentability

Petitioner asserts that claims 1–8 are unpatentable on the following challenges (Pet. 4):

Claims Challenged	35 U.S.C. § ¹	Basis/References
1–4	103(a)	Drell, ² Knappe, ³ Voois ⁴
5–8	103(a)	Drell, Knappe, Voois, Elliott, ⁵ VPN Textbook ⁶
1–4	103(a)	Drell, Knappe
5–8	103(a)	Drell, Knappe, Elliott, VPN Textbook

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

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. 6,215,515 B1 (issued Apr. 10, 2001) (Ex. 1036).

⁵ U.S. Patent No. 6,690,654 B2 (issued Feb. 10, 2004) (Ex. 1007).

⁶ Jim Guichard & Ivan Pepelnjak, *MPLS and VPN Architectures* (2001) (Ex. 1010).

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, 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 ¶¶ 25–27).

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 a “mixed data stream” is a “data stream including at least audio data and video data,” which Petitioner asserts is supported by the claim language and Specification of the ’525 patent. Pet. 8–10. Patent Owner, as noted above, did not file a Preliminary Response in this proceeding and, therefore, has not proposed constructions for any claim term or challenged Petitioner’s proposed construction of “mixed data stream.” 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. Ground 1: Alleged Obviousness Over Drell, Knappe, and Voois

Petitioner contends claims 1–4 would have been obvious over the combination of Drell, Knappe, and Voois. Pet. 17–53. 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:

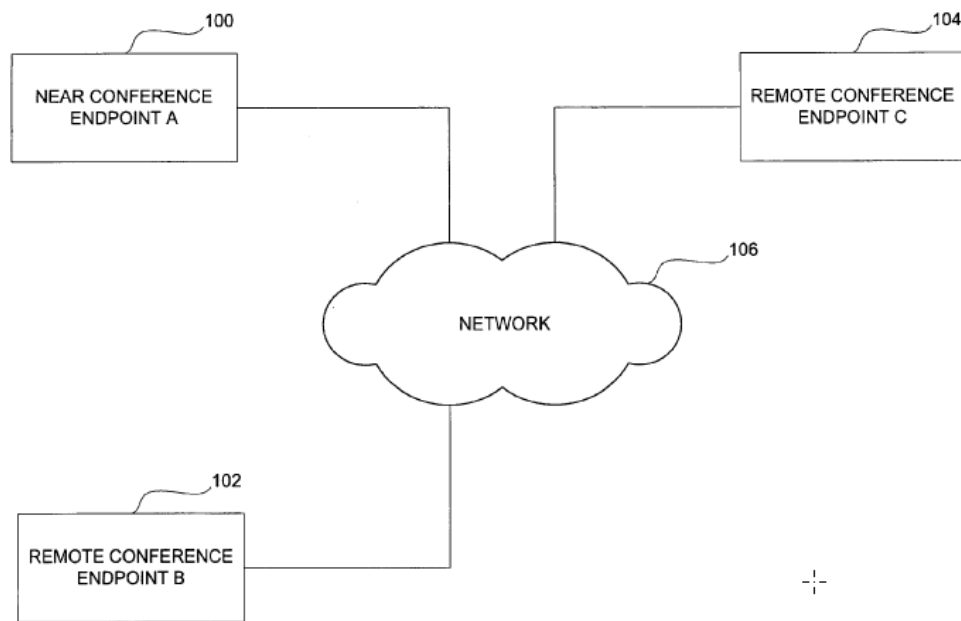


FIG. 1

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.

“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:

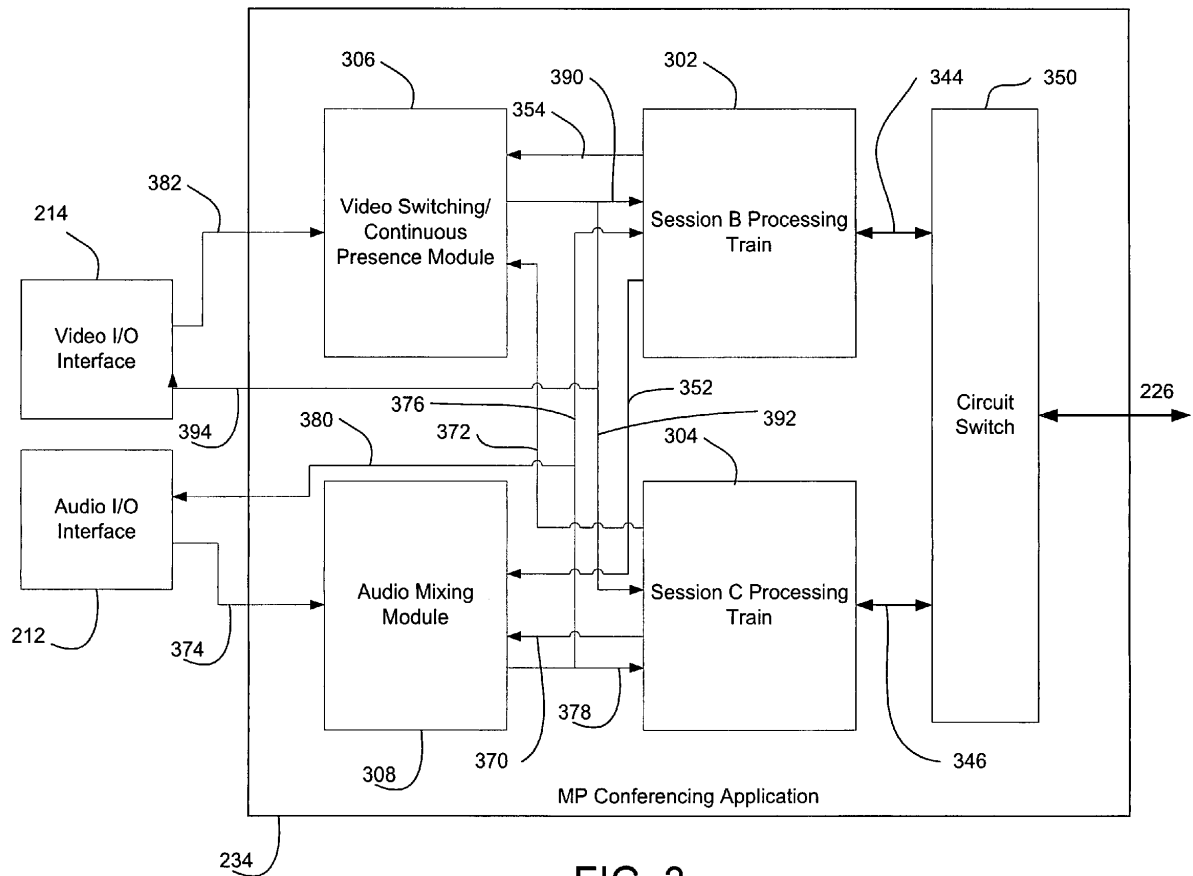


FIG. 3

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” 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” 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:

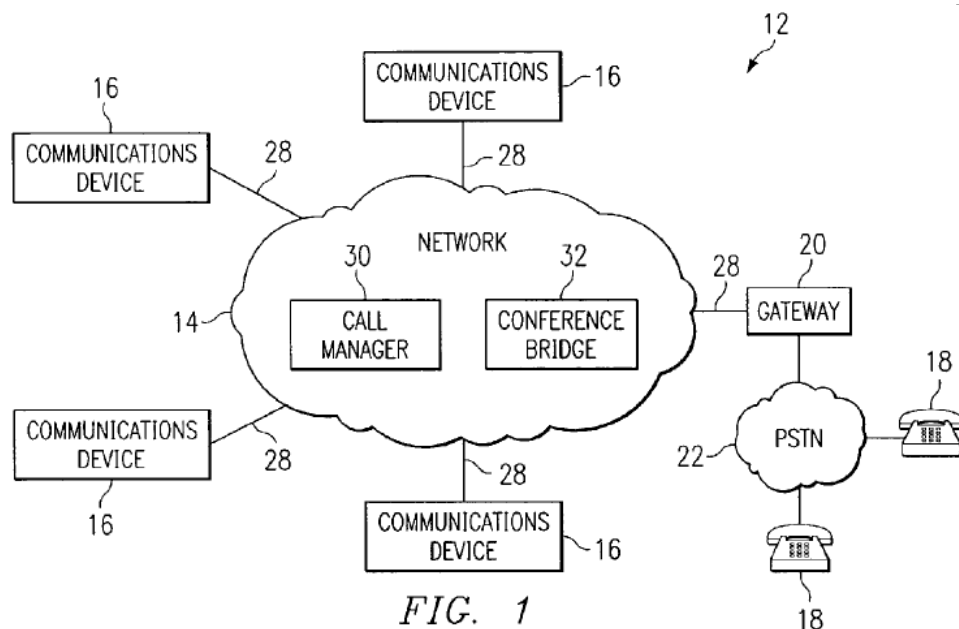


Figure 1 is a block diagram of communication system 12, which “includes a network 14 connecting a plurality of communication devices 16 to each

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.

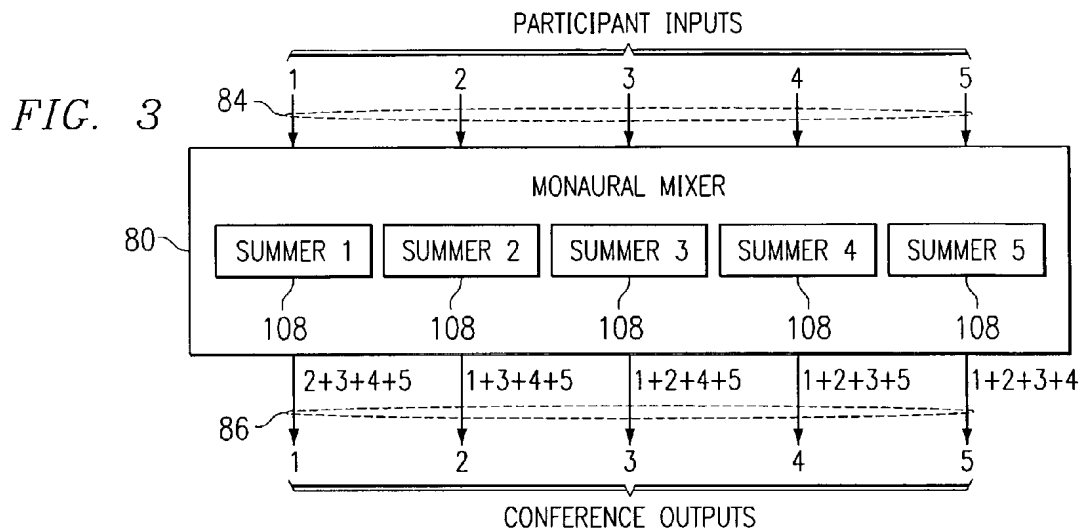


Figure 3 depicts monaural mixer 80 receiving participant input streams 84 and combining the streams in summers 82 to generate conference output streams 86 for each participant in the conference call. Ex. 1006, 6:59–65.

“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. *Voois (Ex. 1036)*

Voois is titled “Videocommunicating Device With an On-Screen Telephone Keypad User-Interface Method and Arrangement” and is generally directed to a “user interface for a programmable videocommunicator architecture for videoconferencing over a conventional communications channel.” Ex. 1036, code (54), 1:33–37. Voois discloses a telephone for operating a videophone user interface which includes an interface with a communication network, such as a PSTN, the Internet, local area networks, and/or wide area networks. *Id.* at 3:62–4:4.

4. *Analysis of Independent Claim 1*

Petitioner contends that Drell, Knappe, and Voois, alone or in combination, teach each limitation of independent claim 1. Pet. 25–48. 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 Voois. *Id.* at 17–25.

a) *1[P]: A system for supporting a multi-participant conference call comprising:*

Petitioner relies on Drell to teach the preamble. Pet. 25–26. Petitioner contends that Drell discloses a “videoconferencing apparatus for

use with multi-point conferences.” *Id.* at 25 (citing Ex. 1008, 1:16–18). Relying on Figure 1, Petitioner contends that Dress discloses a “‘multi-point conferencing application’ embodied in a near conference endpoint 100 that is ‘coupled to remote conference endpoints 102 and 104 via network 106.’” *Id.* (citing Ex. 1008, 3:4–8). According to Petitioner, Drell’s system “uses the Internet and PSTN to facilitate video/audio communications during a conference call between near and remote conference endpoints, including Internet and PSTN-based users.” *Id.* at 26 (citing Ex. 1003 ¶¶ 176–177); *see also* Ex. 1008, 3:8–11. Petitioner contends that Drell teaches a “call manager application” that “controls the establishment and termination of connections” among conference endpoints, and these connections initiate a “multi-point conference.” *Id.* (citing Ex. 1008, 4:11–20, 3:26–30; Ex. 1003 ¶ 178).

Based on our review and consideration of the current record, we determine that Petitioner has sufficiently shown that Drell teaches the recited elements for purposes of institution.⁷

b) *[1.1] a first mixer that mixes a Public Switched Telephone Network (PSTN) client audio data stream with a moderator audio-video data stream into a first mixed data stream*

Petitioner relies on Drell and Knapp to teach this limitation. Pet. 26–35. 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 (i.e., “a *PSTN client*”) to a videoconferencing system

⁷ Petitioner does not argue that the preamble limits claim 1. 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 1 is limiting.

via the PSTN. *Id.* at 26–27 (citing Ex. 1008, 3:20–37, 4:25–26, Fig. 1; Ex. 1003 ¶¶ 181, 182, 184).

Petitioner contends that Knappe supplements Drell. Pet. 27–30. In particular, Petitioner contends that Knappe discloses a PSTN-connected telephone (i.e., “a *PSTN client*”) that communicates audio from the conference participants as a data stream through a gateway. *Id.* at 27–28 (citing Ex. 1006, 2:1–6, 3:65–4:1, 5:46–47; Ex. 1003 ¶¶ 183–184). 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 standard audio data from PSTN conference endpoints into a streaming audio format suitable for transmission over the Internet, i.e., “near conference endpoint 100 receives an audio data stream from a PSTN conference endpoint through a PSTN gateway” (i.e., “a *Public Switched Telephone Network (PSTN) client audio data stream*”). *Id.* (citing Ex. 1003 ¶¶ 148–168, 183–185; Ex. 1006, 4:18–25); *see also id.* at 28–29 (citing Ex. 1008, Fig. 1 (annotated); Ex. 1003 ¶ 185).

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 “for Drell’s remote conference endpoint 104 to be a ‘moderator’ to control the flow and organization of the conference.” Pet. 29 (citing Ex. 1006, 8:52–56; Ex. 1003 ¶¶ 187–189). Petitioner, therefore, contends that the combination of Drell and Knappe renders obvious a “*moderator audio-video data stream*.” *Id.* (citing Ex. 1003 ¶ 194).

Petitioner contends that the combination of Drell and Knappe teaches a “*first mixer*” that mixes the “*PSTN client audio data stream*” with the

“*moderator audio-video data stream*” into a “*first mixed data stream.*” Pet. 30 (citing Ex. 1003 ¶¶ 195–212). Petitioner contends that Drell’s audio mixing module 308, video switching/continuous presence module 306, and communication process 404 instantiated for remote conference endpoint 102 teaches a “*first mixer*” to mix the audio and video data streams received from multiple remote conference endpoints into a single audio and video data stream, i.e., the “*first mixed data stream.*” *Id.* at 30–32.

Petitioner contends that Knappe “supplements and explains how to mix audio data streams from multiple conference endpoints, including audio from PSTN conference endpoints.” Pet. 32 (citing Ex. 1006, Figs. 1–3, 5:49–62, 6:59–7:15; Ex. 1003 ¶ 204). According to Petitioner, it would have been obvious to a person of ordinary skill in the art “to use in Drell’s mixing module 308 a plurality of summers, as Knappe teaches.” *Id.* (citing Ex. 1003 ¶¶ 203–205). Petitioner contends that using a separate summer for each participant would (1) “provide for separately mixing audio data from the PSTN conference endpoint with audio data from the moderator remote conference endpoint 104, while providing higher prominence to the moderator audio and increasing the moderator’s intelligibility,” and (2) “reduce undesirable audio effects since each participant’s mixed audio excludes its own audio data.” *Id.* at 32–33 (citing Ex. 1003 ¶¶ 148–168, 205). Petitioner contends that it would have been obvious to a person of ordinary skill in the art that Drell’s video switching/continuous presence module 306 would include multiple separate video mixers. *Id.* at 33–35.

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.

- c) *[1.2.1] a first transport output that transmits the first mixed data stream to at least one remote client that receives the first mixed data stream,*

Petitioner relies on the combination of Drell and Knappe to teach this limitation. Pet. 29–34. Petitioner relies on its contentions for limitation [1.1], and further contends that Drell’s “distributing the combined audio and video streams would include ‘*transmit[ting]*’ the ‘*first mixed data stream*’ to a remote conferencing endpoint, such as remote conferencing endpoint 102.” *Id.* at 35–36 (alteration in original) (citing Ex. 1008, 4:29–31, 4:49–52, 6:33, 6:55–56, 7:30–31; Ex. 1003 ¶¶ 203–210, 215). Petitioner contends that Drell’s remote conferencing endpoint 102 teaches “*at least one remote client that receives the first mixed data stream.*” *Id.* at 36 (citing Ex. 1003 ¶ 215); *see* Ex. 1008, 3:8–12. Petitioner further contends that it would have been obvious to one of ordinary skill in the art that the output of network 106 leading toward remote conference endpoint 102 as shown in Drell’s Figure 1 discloses a “*first transport output.*” *Id.* at 37–38 (citing Ex. 1008, Fig. 1, 7:30–31; Ex. 1003 ¶ 217–220).

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.

- d) *[1.2.2] the at least one remote client communicatively coupled to the Internet, which generates a remote client audio-video data stream;*

Petitioner relies on Drell to teach this limitation. Pet. 39–40. Petitioner relies on its contentions for limitation [1.2.1], and additionally contends that Drell’s network 106 may comprise the Internet. Pet. 39. Specifically, Petitioner contends that a person of ordinary skill in the art

would understand that Drell’s remote conference endpoint 102 is “*communicatively coupled to the Internet*” because it receives communications from the near conference endpoint 100 over Internet network 106. *Id.* at 39 (citing Ex. 1008, Fig. 1, 3:4–19, Ex. 1003 ¶¶ 223–224). Petitioner further contends that a person of ordinary skill in the art would understand that Drell’s remote conference endpoint 102 generates video and audio signals of a conference participant, that are received as a single stream by near conference endpoint 100 (i.e., “*generates a remote client audio-video data stream*”). *Id.* (citing Ex. 1008, 3:10–12, 3:39–45, 4:21–31, 6:7–10; Ex. 1003 ¶¶ 225–228).

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) [1.3] a second mixer that mixes the moderator audio-video data stream with the remote client audio-video data stream into a second mixed data stream; and

Petitioner relies on the combination of Drell, Knappe, and Voois to teach this limitation. Pet. 41–45. Petitioner relies on its contentions for limitations [1.1] and [1.2.2]. *Id.* Petitioner reiterates that “Drell and Knappe teach that the near conference endpoint 100 receives an audio-video data stream from the moderator remote conference endpoint 104,” and “near conference endpoint 100 also receives a ‘*remote client audio-video data stream*’ from the remote conference endpoint 102.” *Id.* at 41 (citing Ex. 1003 ¶¶ 187–194, 223–227, 230). Petitioner contends that “Drell’s mixing of the audio and video data streams received from remote conference endpoints 102 and 104 into a single audio and video data stream renders obvious a ‘*second mixed data stream.*’” *Id.* (citing Ex. 1003 ¶¶ 232–233).

Petitioner contends that it would have been obvious to a person of ordinary skill in the art “for the communication process 404 instantiated for the PSTN conference endpoint (*‘PSTN client,’ see [1.1]*) to produce the *‘second mixed data stream,’*” and, further, would have been obvious “that Drell’s audio mixing module 308, video switching/continuous presence module 306, and communication process 404 instantiated for the PSTN conference endpoint collectively teach the claimed *‘second mixer.’*” Pet. 42 (citing Ex. 1003 ¶ 234). Petitioner contends that it would have been obvious “to produce a *‘second mixed data stream’* including both audio and video data for the *‘PSTN client’* because it would have been obvious for the *‘PSTN client’* to support both audio and video conferencing.” *Id.* (citing Ex. 1003 ¶ 236). Petitioner contends that this is further supported by Knappe, as well as Voois, which describes “a PSTN conference endpoint that is a videophone that *‘communicates video and audio data over a plain old telephone service (POTS) line.’*” *Id.* at 43–44 (citing Ex. 1006, 3:66–4:1; Ex. 1036, code (57), 3:62–4:4; Ex. 1003 ¶¶ 237–241). Petitioner, therefore, contends that it would have been obvious to a person of ordinary skill in the art that Drell’s MP conferencing application “would produce a mixed audio-and-video data stream for the videoconferencing PSTN conference endpoint . . . because it would allow for providing the same rich, multimedia conferencing experience to PSTN-based participants as is provided to participants using other forms of videoconferencing equipment.” *Id.* at 44–45 (citing Ex. 1003 ¶¶ 241–243).

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

- f) [1.4] *a second transport output that transmits a mixed audio data stream, corresponding to the second mixed data stream, to the PSTN client.*

Petitioner relies on the combination of Drell, Knappe, and Voois to teach this limitation. Pet. 45–48. Petitioner relies on its contentions for limitations [1.1], [1.2.1], and [1.3]. *Id.* Petitioner contends that it would have been obvious to a person of ordinary skill in the art to “*transmit[]*” the ‘*second mixed data stream*’ to a remote conferencing endpoint, such as the videophone PSTN conference endpoint (‘*PSTN client*’) taught by Drell and Voois.” *Id.* at 45 (alteration in original) (citing Ex. 1003 ¶ 245). Petitioner further contends that the “*mixed audio data stream*” is produced by Drell’s audio mixing module 308 (as discussed for limitation [1.3]), and this is the audio portion of the “*second mixed data stream.*” *Id.* at 45–46 (citing Ex. 1003 ¶¶ 232–242, 245). Petitioner further contends that, as discussed for limitation [1.2.1], Drell’s communication process 404 discloses a “*transport output,*” and therefore, the output of communication process 404 instantiated for the PSTN conference endpoint is a “*second transport output.*” *Id.* at 46 (citing Ex. 1003 ¶¶ 213–220, 247; Ex. 1008, 4:21–24, 5:65–6:2).

Petitioner further contends that, as discussed for limitation [1.1], it would be obvious “to utilize a gateway positioned between the PSTN and Internet networks, as Knappe teaches, because it would provide Drell the benefit of converting Internet network communications to suitable signals for the PSTN, and vice-versa.” Pet. 47 (citing Ex. 1006, 4:18–25; Ex. 1003 ¶¶ 148–168, 249). Petitioner further contends that it would be obvious to a person of ordinary skill in the art “that the gateway would transmit at least the audio portion of the ‘*second mixed data stream*’ to the PSTN conference endpoint (‘*PSTN client*’) so that the conference participant using the PSTN

conference endpoint could hear the audio portion of the conference (that is, the speech of other conference participants).” *Id.* (citing Ex. 1008, Fig. 1; Ex. 1003 ¶ 250). Petitioner contends that as further combined with Voois, it would have been obvious for the gateway “to also transmit the video portion of the second mixed data stream to the PSTN conference endpoint (implemented as a videophone).” *Id.* at 48 (citing Ex. 1003 ¶ 251).

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

g) Motivation to Combine

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, Knappe, and Voois. Pet. 17–25.

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. 17 (citing Ex. 1008, code (54), 3:33–37; Ex. 1006, 3:41–51, 6:59–62; Ex. 1003 ¶¶ 148–149).

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.”
Id. at 18 (citing Ex. 1003 ¶¶ 151–152).

Petitioner further contends that implementing Knappe’s mixers into Drell would produce beneficial results. Pet. 19 (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 summers (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 20 (citing Ex. 1003 ¶¶ 158–160).

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. 20 (citing Ex. 1003 ¶ 162; Ex. 1021, 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 21 (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. 21–22 (citing Ex. 1003 ¶ 1006). According to Petitioner, this would “allow conference data 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 22 (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.* at 22 (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. 22 (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).

With respect to combining Voois with Drell, Petitioner similarly contends that Voois is analogous art, pertaining to multiparty conferencing over PSTN. Pet. 23 (citing Ex. 1008, 3:33–37; Ex. 1036, 1:33–37, 3:62–4:4; Ex. 1003 ¶ 169). Petitioner contends that a person of ordinary skill in the art “looking to implement the teachings of Knappe and Drell, would have recognized that when the gateway is processing both audio and video signals, it would be beneficial to have a PSTN conference endpoint that can receive such signals.” *Id.* (citing Ex. 1003 ¶ 170). Petitioner contends that “Voois’s PSTN videophone teachings are well suited for Drell’s system (as modified by Knappe to include a gateway capable of communicating both audio and video) because it would allow for the user of the PSTN conference endpoint to participate in a conference with both audio and video,” and, therefore, “allow more information to and by the user of the PSTN conference endpoint.” *Id.* at 23–24 (citing Ex. 1003 ¶ 171). According to Petitioner, this “would beneficially allow for the user of the PSTN conference endpoint to exchange both audio and video data with the other conference participants, thereby improving the experience of the user and enhancing the effectiveness of collaboration.” *Id.* at 24.

Petitioner further contends that the combination (1) “combines prior art elements (videophone taught by Voois with the conferencing system of Drell as modified by Knappe) according to known methods (disclosed by Voois) to yield predictable results (allow for PSTN conference endpoint participants in Drell’s system to share both audio and video data during a conference for collaboration purposes)” and (2) “is a simple substitution of one known element (PSTN videophone taught by Voois) for another (the PSTN conference endpoint of Drell).” Pet. 24 (citing Ex. 1003 ¶ 172).

Petitioner argues the “results would have been predictable and there would have been a reasonable expectation of success in the combination given that both Drell and Voois describe similar conferencing systems.” *Id.* (citing Ex. 1003 ¶ 173). As in the proposed combination with Knappe, Petitioner contends that the proposed combination with Voois “permits, but does not require, physical incorporation of elements from Drell and Voois.” *Id.* at 24–25.

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 Voois.

h) Conclusion for Independent Claim 1

Based on our review and consideration of the current record, we determine that Petitioner has adequately shown that the combination of Drell, Knappe, and Voois teaches the limitations in claim 1 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 1 is unpatentable under 35 U.S.C. § 103(a) over Drell, Knappe, and Voois.

5. Dependent Claims 2–4

Petitioner contends that dependent claims 2–4, which depend from claim 1, would have been obvious over Drell, Knappe, and Voois. Pet. 48–53. Based on our review and consideration of the current record, Petitioner has sufficiently shown that the combination of Drell, Knappe, and Voois teaches the limitations in claims 2–4 and provides reasons sufficiently

supported by factual underpinnings to combine the references teachings with a reasonable expectation of success. *Id.*

6. Summary of Ground 1

We find that Petitioner has demonstrated a reasonable likelihood that claims 1–4 are unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Drell, Knappe, and Voois.

E. Additional Grounds

Petitioner additionally contends that dependent claims 5–8 are obvious over the combination of Drell, Knappe, Voois, Elliott, and VPN Textbook (Ground 2), dependent claims 1–4 are obvious over the combination of Drell and Knappe (Ground 3),⁸ and dependent claims 5–8 are obvious over the combination of Drell, Knappe, Elliott, and VPN Textbook. Pet. 54–58.

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 one claim based on alleged obviousness over Drell, Knappe, and Voois, we need not address, in this Decision, Petitioner’s additional challenges.

⁸ Petitioner’s Ground 3 is identical to Ground 1, except that Petitioner eliminates Voois from the combination “[t]o the extent that Patent Owner argues that the claimed ‘second mixed data stream’ does not require both audio and video data.” Pet. 67. As discussed above, Patent Owner has not filed a Preliminary Response, so has not, at this time, challenged Petitioner’s proposed construction of “mixed data stream.”

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 and challenges 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 and all challenges 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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