

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.,
Petitioner,

v.

STA GROUP LLC,
Patent Owner.

IPR2024-00207
Patent 8,145,249 B2

Before KEVIN C. TROCK, SCOTT RAEVSKY, and BRIAN P. MURPHY,
Administrative Patent Judges.

TROCK, *Administrative Patent Judge.*

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

I. INTRODUCTION

Motorola Solutions, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–25, 38, and 39 (the “challenged claims”) of U.S. Patent No. 8,145,249 B2 (Ex. 1001, “the ’249 patent”). STA Group LLC (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 9, “Prelim. Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 10, “Prelim. Sur-reply”).

The Board has authority to determine whether to institute *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary 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.”

For the reasons stated below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one claim. We therefore institute *inter partes* review as to all of the challenged claims of the ’249 patent and all of the asserted grounds of unpatentability in the Petition.

II. BACKGROUND

A. *Related Matters*

Petitioner identifies the following district court proceeding involving the ’249 patent: *STA Group LLC v. Motorola Solutions, Inc.*, No. 2:23-CV-00030 (E.D. Tex., Jan. 26, 2023) (the “Parallel Litigation”). Pet. 78.

Patent Owner identifies the same related matter. Paper 3, 1.
Patent Owner also identifies the following three U.S. patents as additionally asserted in the Parallel Litigation: 8,014,324 B2; 9,049,737 B2; and 9,319,852 B2.

B. Real Parties-in-Interest

Petitioner identifies Motorola Solutions, Inc. as the real party-in-interest. Pet. 77.

Patent Owner identifies STA Group LLC as the real party-in-interest. Paper 3, 1.

Based on the current record, we determine that Petitioner has established compliance with the statutory requirement under 35 U.S.C. § 312(a)(2) to identify all real parties in interest.

C. The '249 patent

The '249 patent is titled “Method and System for Providing a Proxy Media Service.” Ex. 1001, code (54) (capitalization and bold omitted). “[The] invention relates in general to communication systems and, more particularly, to a method and system for providing a proxy media service.” *Id.* at 1:18–20.

The background description of the invention explains that “[m]any public and private groups, such as security and safety personnel (e.g., police, fire fighters and ambulance drivers)[,] . . . utilize land mobile radios communicating through push-to-talk technologies. However, communications among different endpoints of different networks . . . may be difficult.” *Id.* at 1:24–31. Problems include that, whereas

full-duplex manner [devices], such as a cellular phone[,], may receive and transmit communications at the same time using . . .

separate communication channels for incoming and outgoing communications[,] . . . half-duplex devices, such as push-to-talk land mobile radios[,] may only either transmit or receive communications at one time[because] one communication channel is used for incoming and outgoing communications.

Id. at 11:32–41. The invention “provides a method and system for providing a proxy media service that substantially eliminates or reduces at least some of the disadvantages and problems associated with previous methods and systems.” *Id.* at 1:49–52.

Figure 1 from the '249 patent is shown below.

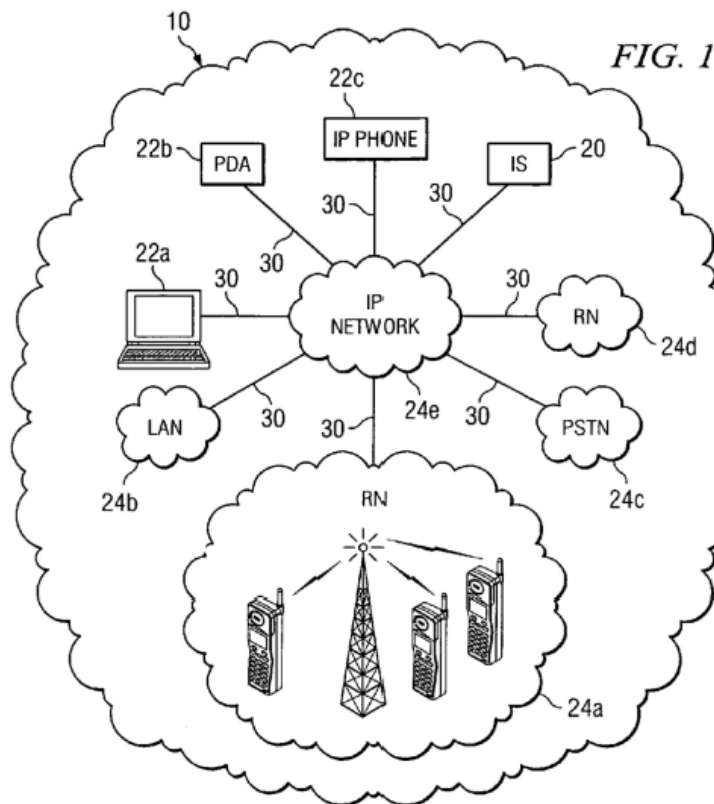


Figure 1 illustrates communication system 10 that includes communication networks 24a–24e, interoperability system (IS) 20, and endpoints 22a–22c. *Id.* at 3:23–26. IS 20 is able to facilitate interoperable communication sessions between and among various communication

devices, such as endpoints of communication networks 24 and endpoints 22.

Id. at 3: 26–29. The '249 patent explains that

communication system 10 may comprise any number of IP or non-IP communication networks of any wireless or wireline form capable of communicating audio and/or video telecommunication signals, data, and/or messages, including signals, data or messages. Communication networks 24a-24e may include any number and combination of segments, nodes and endpoints to enable communication among network devices and components. Communication networks 24a-24e may be distributed locally or across multiple cities and geographic regions. Nodes may include any combination of network components, gatekeepers, call managers, conference bridges, routers, hubs, switches, gateways, base stations, endpoints or other hardware, software or embedded logic implementing any number of communication protocols that allow for the exchange of data in communication system 10.

Id. at 4:23–38.

The '249 patent also explains that

IS 20 enables, facilitates and/or provides for interoperable communication among communication endpoints and devices, such as LMRs [(land mobile radios)], cellular phones, IP phones, PCs, PDAs, PSTN [(public switched telephone network)] phones, video monitors, cameras and sensors of one or more communication networks (e.g., communication networks 24a-24e) using Internet Protocol. Such endpoints may comprise IP or non-IP-enabled endpoints. In particular embodiments, IS 20 may control gateways (for example, of segments 30) in order to map radio frequencies of particular mobile radio endpoints to IP addresses for communication to other types of radio endpoints or IP devices. For example, a particular gateway may be able to receive communications from various types of endpoints (e.g., on various types of communication networks) and may convert such communications for transmission to other types of endpoints.

Id. at 4:58–5:5.

The '249 patent further explains that “[p]articular embodiments provide a user of a full duplex endpoint to communicate in a communication session with push-to-talk (PTT) half duplex endpoints.” *Id.* at 3:34–26. In one embodiment, the '249 patent describes

a method for providing a push-to-talk proxy media service [that] includes receiving a plurality of monitored push-to-talk communication streams over a high bandwidth connection and mixing the plurality of monitored push-to-talk communication streams into a mixed communication stream. The method also includes transmitting the mixed communication stream to a user endpoint over a low bandwidth connection.

Id. at 2:21–28. The '249 patent explains that the “[t]echnical advantages of particular embodiments include the ability of a user of a full duplex endpoint to communicate in a push-to-talk communication session with half duplex endpoints.” *Id.* at 2:29–32.

Figure 3 from the '249 patent is shown below.

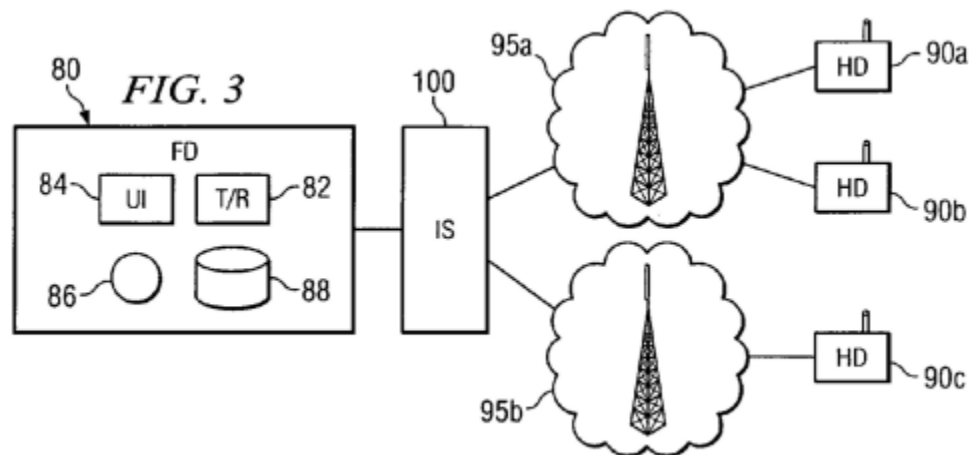


Figure 3 illustrates an example system for providing a push-to-talk communication session among full duplex endpoint 80 and half duplex

endpoints 90a and 90b as part of communication network 95a, and half duplex endpoint 90c as part of communication network 95b. *Id.* at 2:64–67, 10:55–57. Communication networks 95a and 95b are connected to full duplex endpoint 80 through Interoperability System (IS) 100, although “[i]n some cases, communications between endpoints 80 and 90 may not travel through IS 100 but may travel through gateways and other network components controlled by an IS.” *Id.* at 10:39–42. The ’249 patent also explains that

[i]n particular embodiments, endpoints 80 and 90a-90c may comprise endpoints of different communication networks or communicating on different frequencies, such as endpoints of different police departments, fire departments or other security agencies or groups, including various users of a private organization or company. Endpoints 80 and 90a-90c may typically communicate on their own communication networks or on separate frequencies.

Id. at 10:42–49.

The ’249 patent further explains that a virtual talk group (VTG) represents interoperability of a group of channels, for example, as an audio conference or meeting. A virtual talk group may include an associated virtual channel and an ID. Virtual channels may comprise an address, such as an IP address, associated with a virtual talk group through which users may access the virtual talk group and/or through which communications from VTG member endpoints are bridged. Various types of virtual talk groups may be utilized in particular embodiments, such as a multicast address usable by all endpoints of the VTG, a VTG comprising multiple talk groups (e.g., multiple radio sources from different frequencies whose communications are mixed), a unicast group and a combination unicast and multicast group.

Id. at 9:54–67. As an example, the ’249 patent explains that

a particular virtual talk group may comprise a conference or meeting of the following: (1) a channel or other multicast path used by certain users of a police department's radio network, (2) a channel or other multicast path used by certain users of a fire department's radio network, (3) a channel or other multicast path used by certain users of a corporation's security radio network and (4) a plurality of users of IP-enabled endpoints such as IP phones, IP-enabled PDAs or PCs.

Id. at 10:1–9.

D. Illustrative Claim

Claims 1–25, 38, and 39 are challenged in the Petition. Pet. 26–76. Claims 1, 13, 25, and 38 of the challenged claims are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below, with Petitioner's annotations added.

[1pre] A method for providing a push-to-talk proxy media service, comprising:

[1a] receiving a plurality of monitored push-to-talk communication streams over a high bandwidth connection, each monitored push-to-talk communication stream comprising audio communications from a plurality of users;

[1b] mixing the plurality of monitored push-to-talk communication streams into a mixed communication stream such that the audio communications communicated in each of the monitored push-to-talk communication streams can be heard on the mixed stream; and

[1c] transmitting the mixed communication stream to a user endpoint over a low bandwidth connection.

Ex. 1001, 23:21–33; Pet. v.

E. Prior Art References and Other Evidence

Petitioner relies on the following references:

1. Botha et al., U.S. Patent No. 8,121,057 B1
(Ex. 1004, “Botha”)
2. Radenkovic et al.,
U.S. Pat. Pub. No. 2003/0182001 A1
(Ex. 1005, “Radenkovic”)
3. Koren et al., U.S. Pat. No. 7,580,706 B2
(Ex. 1006, “Koren”)
4. McDonald et al., U.S. Pat. Pub. No. 2002/0097746 A1
(Ex. 1007, “McDonald”)

In addition to these references, Petitioner relies on a Declaration of Dr. Sayfe Kiaei, Ph.D. (Ex. 1002, “Kiaei Decl.”).

F. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 2–3, 10.

Ground	Claim(s) Challenged	Basis 35 U.S.C. §	Reference(s)
1	1–7, 9, 13–19, 21, 25, 38, 39	103(a) ¹	Botha
2	1, 7–9, 12, 13, 19–21, 24, 25, 38, 39	103(a)	Radenkovic, McDonald
3	2–6, 10, 11, 14–18, 22, 23	103(a)	Radenkovic, McDonald, Koren

¹ The ’249 patent was filed before the March 16, 2013 effective date of the §§ 102, 103 provisions in the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29. Ex. 1001, codes (60), (63). Petitioner contends pre-AIA law applies to the challenged claims. *See, e.g.*, Pet. 10 (“This is a means-plus-function limitation subject to construction under 35 U.S.C. § 112, sixth paragraph (pre-AIA).”). Patent Owner does not dispute that

III. ANALYSIS OF THE CHALLENGED CLAIMS

A. *Applicable Legal Standards*

A claim is unpatentable as obvious 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.” 35 U.S.C. § 103(a) (2006). 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) so-called “secondary considerations,” including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). At this stage, neither party has presented any evidence on the fourth *Graham* factor.

B. *Level of Ordinary Skill in the Art*

According to Petitioner, a person of ordinary skill in the pertinent art: would have had at least a B.S. degree in electrical engineering, computer science, or a similar field, plus approximately three years of industry in networking or communication systems, in particular address interoperability between different types of networks and satellite communications.

Pet. 7–8 (citing Ex. 1002 ¶ 68).

Patent Owner “does not dispute the proposal provided by Petitioner as to who would qualify as a POSITA.” Prelim. Resp. 6.

pre-AIA law applies. *See* Prelim. Resp. Accordingly, we cite to pre-AIA § 103(a).

We regard Petitioner’s definition as consistent with the ’249 patent and the asserted prior art, and the definition is supported by the testimonial evidence. Therefore, for the purpose of this Decision, we adopt Petitioner’s description.

C. Claim Construction

For this *inter partes* review, the Board applies the same claim construction standard as that applied in federal courts. *See* 37 C.F.R. § 42.100(b) (2023). Under this standard, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citations omitted). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citation omitted).

Petitioner takes the position that “the Board need not construe the outer bounds of the claims as part of these proceedings.” Pet. 8. But with respect to the phrases “a high bandwidth connection,” and “a low bandwidth connection,” recited by independent claims 1, 13, 25, and 38, Petitioner contends that “[t]he 249 patent does not define either the lower or upper boundary” of these two phrases “with reasonable certainty,” and that these limitations are “therefore indefinite.” *Id.* at 9–10. Petitioner points out,

however, that “[t]he 249 patent does make clear that a DSL connection is not a high bandwidth connection while a commercial-grade LAN is,” and that “[t]his distinction is sufficient to resolve the challenges in this IPR, and the indefiniteness of this term therefore does not preclude institution of this IPR.” *Id.* at 9 (citing *Samsung Elecs. Am. Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1352–1353, 1355 (Fed. Cir. 2020)).

Patent Owner does not address Petitioner’s assertion that the independent claims are indefinite. *See* Prelim. Resp. 5–6.

We agree with Petitioner that we can determine whether to institute trial without having to resolve Petitioner’s assertion of indefiniteness. *See Samsung*, 948 F.3d 1355 (question of indefiniteness “is simply another ground on which the claims might be challenged in an appropriate forum,” and “does not necessarily preclude the Board from addressing the patentability of the claims on section 102 and 103 grounds”).

Independent claim 25 is directed to a system for providing a push-to-talk proxy media service, reciting a “means for receiving,” a “means for mixing,” and a “means for transmitting,” among other things. Ex. 1001, 25:51–64. Petitioner identifies the recited functions and provides corresponding structures for these “means for” limitations recited by claim 25 pursuant to 35 U.S.C. § 112 ¶ 6. Pet. 10–11. Patent Owner “maintains that the proposed constructions for these three claim terms are overly limiting since the specification provides support for a broader range of structures, at the least, and does not concede to the constructions provided by Petitioner.” Prelim. Resp. 6.

It is not necessary for us to resolve the claim construction issues identified by the parties in order for us to determine whether to institute *inter*

partes review of the '249 patent. Accordingly, for purposes of this Decision and based upon the preliminary record, we decline to expressly construe any of the claim terms at this point in the proceeding. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). This preliminary Decision, however, does not prevent the parties from proposing, presenting evidence, or arguing a same or different construction of the claims during trial. The parties are encouraged to present their claim construction arguments and evidence as permitted by our rules.² A final claim construction will be determined after the close of all the evidence and after any oral hearing in this matter.

D. Discretionary Denial – 325(d)

Patent Owner argues that we should exercise our discretion to deny institution of trial under 35 U.S.C. § 325(d). Prelim. Resp. 28–38.

Patent Owner contends that

During prosecution of the Challenged Claims, the Examiner rejected the then pending claims “under 35 U.S.C. 103(a) as being unpatentable over Denman et al. (Denman, US 7170863) in view of Lillie et al. (Lillie, US 6798755 B2) and further in view of US 7386000 B2 (Löppönen et al., hereinafter Löppönen).” Ex. 1003, 50–55. The prior art and arguments relied upon in the Petition are substantially the same prior art and arguments that were previously presented in

² “If a trial is instituted, the parties also will have opportunities to cross-examine any opposing declarants, and to submit additional arguments and evidence, addressing the Board’s initial claim construction determination and the opposing party’s arguments and evidence before oral hearing.” CPTG 49 (*Available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>).

prosecution. Therefore, the Petition should be denied under 35 U.S.C. § 325(d).

Prelim. Resp. 28. Patent Owner asserts that Petitioner's reliance on Botha is substantially the same as the Examiner's reliance on Löppönen (Prelim. Resp. 30–34) and Petitioner's reliance on Radenkovic and McDonald is also substantially the same as the Examiner's reliance on Löppönen (Prelim. Resp. 35–38).

Petitioner disputes Patent Owner's asserted similarity, asserting that [Patent Owner's] argument fails at part one [of the *Advanced Bionics* framework]: The Botha and Radenkovic-McDonald grounds disclose mixing of a plurality of streams, each having a plurality of users, which were the precise limitations found to be missing from Löppönen during prosecution. The Botha and Radenkovic-McDonald grounds thus present non-cumulative art and arguments materially different from those previously considered by the Office.

Reply 1.

1. *Legal Standard*

Under § 325(d), we have discretion to deny a petition that presents the same or substantially the same prior art or arguments as previously presented to the Office. In evaluating whether the factual predicate under § 325(d) is met, we consider a number of non-exclusive factors, as set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (Institution Decision) (precedential as to Section III.C.5, first paragraph) (“*Becton Dickinson* factors”):

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, IPR2017-01586, Paper 8 at 17–18.

In performing an analysis under § 325(d), the Board uses the following two-part framework:

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. . . . If, after review of [*Becton Dickinson*] factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8, 10 (PTAB Feb. 13, 2020) (Institution Decision) (precedential) (footnote omitted). Consequently, we first turn to an analysis of *Becton Dickinson* factors (a), (b), and (d) to determine whether the same or substantially the same art previously was presented to

the Office or whether the same or substantially the same arguments previously were presented to the Office.

2. *Advanced Bionics – Part One*

Becton Dickinson factors (a), (b), and (d) require us to determine, respectively: (a) “the similarities and material differences between the asserted art and the prior art involved during examination;” (b) “the cumulative nature of the asserted art and the prior art evaluated during examination,” and (d) “the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.” *Becton, Dickinson*, IPR2017-01586, Paper 8 at 17.

Patent Owner describes the Examiner’s reliance on Löppönen as follows:

Löppönen was used to disclose “where each monitored push-to-talk communication stream compris[es] audio communications from a plurality of users, and mixing the plurality of monitored push-to-talk communication streams into a mixed communication stream such that the audio communications communicated in each of the monitored push-to-talk communication [streams] can be heard on the mixed stream.” [Ex. 1003] at 52.

Prelim. Resp. 29. Patent Owner describes Botha as “cumulative when viewed in the light of” the Examiner’s following reliance on Löppönen:

Group Communication

Groups (also called talkgroups) provide the users with an easy and immediate multipoint way for voice communication. Each user can be allowed access to one or more groups. A typical case is that a mobile user is allowed access to all groups in his Virtual Private Network (VPN). The user is actively attached to a subset of the available groups.

In the basic mode, *the mobile user selects one group* for communication. He will then *hear all traffic in that group* (unless he is engaged in an individual call) and can also himself talk in the group. The user can easily switch to another group.

The user can also operate in multiple groups virtually at the same time, by using a method called scanning. The user selects multiple groups and assigns these with priorities. He then hears traffic from one group at the time, but traffic from a more important group will interrupt other traffic. One of the groups remains the selected group, and any speech transmission by the user is made to the selected group. The user can switch scanning on and off.

Prelim. Resp. 30–31 (citing Ex. 2001, 12:34–53). Patent Owner contends the above findings for Botha and Löppönen fail, and are cumulative, for the following reason:

Yet the arguments in the Petition using Botha and the arguments made by the Examiner in prosecution using Löppönen both fail for the same reason: there is no disclosure of a plurality of streams which themselves comprise a plurality of users to be transmitted to an endpoint. Instead, the endpoints are tied to only one group at a time. At most, multiple streams of singular users are transmitted to an endpoint in both Botha and Löppönen. Therefore, the art and arguments made in the Petition with regard to Botha are substantially the same as Löppönen and the associated arguments made by the Examiner during prosecution, which were already overcome.

Prelim. Resp. 34.

Petitioner summarizes and disputes Patent Owner’s arguments as follows:

In its merits argument against Ground 1, [Patent Owner] argues that Botha fails to disclose “receiving a plurality of monitored push-to-talk communication streams,” where each stream comprises “audio communications from a plurality of users” (hereinafter “2x2 limitation,” reflecting the requirements

of at least two streams, each having at least two users). [Prelim. Resp.] at 20–21. Then, for § 325(d), [Patent Owner] rehashes this same argument, asserting that “Botha fails in the same manner as Löppönen was found to fail. There is no disclosure of a **plurality of streams**, which themselves comprise a **plurality of users** to be transmitted to an endpoint.” *Id.* at 31 (emphases in original). [Patent Owner’s] merits and § 325(d) arguments are thus intertwined—the § 325(d) argument would be valid **only** if [Patent Owner] is correct that Botha fails to disclose the 2x2 limitation. But [Patent Owner] is wrong, meaning that its merits and § 325(d) arguments both fail.

The Petition, supported by Dr. Sayfe Kiaei, showed that the Botha System discloses the 2x2 limitation. Pet. at 26–38, Ex. 1002 (Kiaei Decl.) at ¶¶ 89–97, 99–101. Botha’s Figures 1–2 illustrate a two-way radio system having **multiple** radios 180. Pet. at 12–13, 28; Kiaei Decl. at ¶¶ 76–78, 90. And in the Botha System, there are **multiple** two-way radio systems. Pet. at 34–38; Kiaei Decl. at ¶¶ 95–96. In other words, the Botha System has **multiple** communication streams coming from each of the radio systems with each of those streams originating from **multiple** radios 180. The Botha System mixes those streams with a “mixing operation” using proxy 997. Pet. at 39; Kiaei Decl. at ¶ 102.

As the Office acknowledged in allowing the ’249 patent, Löppönen fails to disclose these features. Ex. 1003 at 32, 76–77. In Löppönen’s mixed stream, “the user still hears only one group at a time.” *Id.*

Prelim. Reply 2–3. Petitioner also asserts that Patent Owner fails to account for Botha’s mixing in the proxy 997:

[Patent Owner] argues that Botha fails to disclose the 2x2 limitation because “the ‘group’ of Botha resides on Channel 110-D,” which is a single group heard by the Phone 160. [Prelim. Resp.] 31. That is wrong because [Patent Owner] fails to take into account the mixing performed by the phone proxy 997 itself. In the Botha System, the phone proxy 997 mixes

together Channel 110-A having the first PTT stream and Channel 110-D having the second PTT stream.

Prelim. Reply 3 (citing Ex. 1002 ¶ 99).

Patent Owner disputes Petitioner's characterization of Botha. Prelim.

Sur-Reply 1–2. Patent Owner asserts:

Petitioner's Reply argues that the Botha System has “**multiple** two-way radio systems.” Reply, 3 (emphasis in original). Petitioner again cites to the fictional embodiment of the alleged Botha System on pages 34–36 of the Petition in making its conclusion. As stated in the [Preliminary Response], the alleged Botha System shows a single stream (i.e., a single talkgroup) made of a plurality of communications from individual participants, **not** a plurality of streams **each** comprising communications from a plurality of users.

Petitioner attempts to make up for Botha's deficiency by arguing that mixing of multiple radios occurs at a proxy (997). [Prelim.] Reply, 3. However, Botha clearly discloses that each proxy (997) mixes only **one** stream of a plurality of users, **not** a “plurality of . . . streams, [each comprising] communications from a plurality of users.” [Prelim. Resp.] 20–21. Specifically, Botha discloses that audio mixing is performed at an endpoint, by the endpoint itself or a proxy (997) acting on its behalf, to create a single multicast channel from the plurality of individual participants' communications. Ex. 1004, 7:7–21.

Prelim. Sur-Reply 1–2.

We have reviewed the portions of Löppönen cited by Patent Owner and do not see substantially the same structures or functionality relied upon by Petitioner in Botha, nor do we discern that Petitioner is making the same or substantially the same arguments previously presented to the Office. Petitioner's declarant, Dr. Kiaei, testifies that the Botha System discloses multiple two-way radio systems 190, i.e. multiple communication streams, coming from each of the radio systems with each of those streams

originating from multiple radios 180. Ex. 1002 ¶¶ 95–96. According to Dr. Kiaei, the Botha System mixes those streams with a “mixing operation” using proxy 997, “such that the audio communications communicated in each of the monitored push-to-talk communication streams can be heard on the mixed stream.” *Id.* ¶¶ 89–97, 99–102.

Indeed, Botha explains that proxy device 997 “can allow different ‘talk groups’ on two-way radio systems to communicate between each other- for example a UHF two-way radio system on one channel and a VHF two-way radio system on the other . . . in such a way so that end-users within those entities are able to communicate with each other- no matter the type of equipment they use,” such that

[t]he flow may be of numerous, and potentially recursive, combinations of the channels' participation in the operation being carried out on the device 997 including, but not limited to, direct channel-to-channel streaming, aggregation of data from one or more channels to one or more channels, conversion of data from one or more channels to one or more channels, translation of data from one or more channels to one or more channels, or any inclusive or exclusive combination thereof.

Ex. 1004, 15:39–67.

Dr. Kiaei also testifies that

[t]he streams from each of these channels are received at a phone proxy 997 to which the phone 160 is connected as shown in the annotated Botha System diagram below. Ex. 1004, 13:49–51 and 13:18–31. Thus, the phone proxy 997 to which the phone 160 is connected receives at least two multicast streams, each stream including push-to-talk communications from a plurality of endpoints 180 monitored by a respective radio system 190.

Ex. 1002 ¶ 99.

The mixing operation described in Botha appears materially different than that described in Löppönen. The Office acknowledged in allowing the '249 patent that in Löppönen's mixed stream, "the user still hears only one group at a time." Ex. 1003 at 32, 76–77. That does not appear to be the case in Botha. In Botha,

the combination of a variety of audio streams [occurs] in such a way that each participant will hear all other participants' voices except their own. This is known as an 'N minus 1' mix- where 'N' represents the sum of all audio streams entering a[t] the core logic of the invention, and the 'minus 1' portion refers to the subtraction of the current participant's stream from the stream returned to them.

Ex. 1004, 10:35–43.

3. Conclusion

Based on the current record before us, we determine that Petitioner is not asserting the same or substantially the same art or arguments previously presented to the Office with respect to Botha (Ground 1). Accordingly, we decline to exercise our discretion to deny institution under 35

U.S.C. § 325(d).³

E. Prior Art References

1. Botha (Ex. 1004)

Botha is a U.S. patent titled "Wide Area Voice Environment Multi-Channel Communications System and Method." Ex. 1004, code (54). Botha relates "a virtual peer-to-peer multi-channel communications system

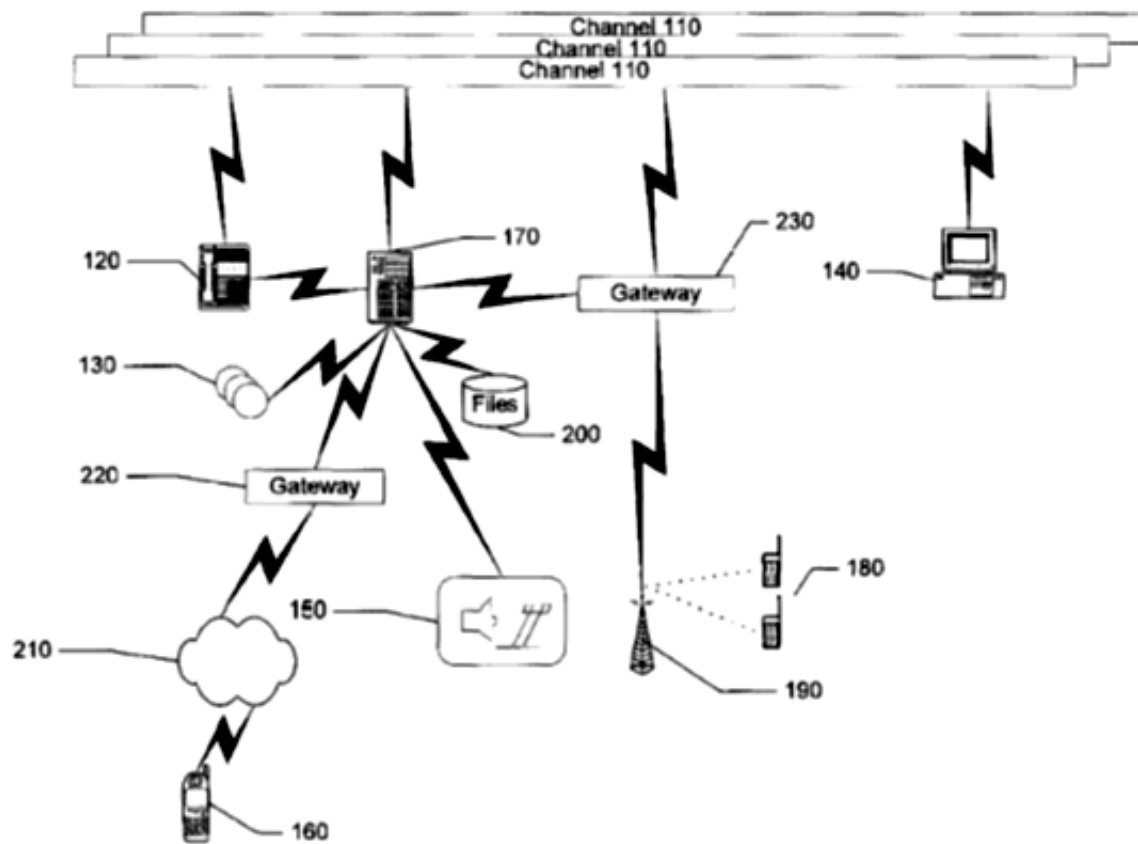
³ Because we find that Petitioner is not asserting the same or substantially the same art or arguments previously presented to the Office with respect to Botha (Ground 1), we do not reach Patent Owner's arguments with respect to Grounds 2 and 3 (Radenkovic and McDonald).

for carrying audio and other types of media between users on a computer data network and communications devices connected to said network.”

Id. at 1:20–24.

The background description of the invention explains: “Often a technical solution is simply not available to facilitate the cross communication of users operating disparate communications devi[c]es such as computer, telephones and two-way radio systems.” *Id.* at 1:49–52. And, the description asserts a consequent “need for a network-based solution to these challenges that provides a high-performance virtual peer-to-peer instant communications system that uses an existing computer data network to create massively scalable group communications channels having audio, video, and data content.” *Id.* at 1:53–59.

Figure 2, reproduced below, “illustrates[s] the manner in which a variety of disparate communication devices (e.g., endpoints) can communicate with each other using one or more virtual channels 110.” *Id.* at 11:55–61.



Each of the communication devices accesses a virtual channel 110 by tuning into an IP multicast session carried on the channel 110. *Id.* at 11:58–61. The invention is logic 997 (not shown) incorporated on a “computing device such as a telephone 120, server computer 170, gateway 230, end user computer or PDA 140, or any other suitable computing platform.” *Id.* at 12:50–56. The logic constitutes “proxy device 997” for accessing a channel 110 or communication between channels 110. *Id.* at 13:8–10, 39. Implementations of telephones 120, gateways 230, and computer devices 140 are described as below.

An end-user computing device 140 can monitor multiple channels 110 simultaneously and direct media received from any of those channels to one

or more rendering systems 250 (e.g., speakers or display) on a channel-by-channel basis. *Id.* at 12:5–10, Fig. 3.

IP telephones 120 directly communicate (receive and transmit) with the multicast and unicast groups on virtual channels 110 and are either fully channel-capable (“full support for the invention’s channels”) or partly channel-capable (“capable of partial processing of channel-based data”). *Id.* at 12:42–49, 12:62–13:6, Fig. 6. The latter “implement[s] . . . the invention . . . 997 as a proxy resource to bi-directionally propagate data” between a channel and the channel accessed by the IP phone 120. *Id.* at 13:7–11.

Digital, analog, and cellular phones 160 access channels similar to the IP phones 120—by dialing into a proxy 997, “which proxies data to the channel 110.” *Id.* at 13:36–39, Fig. 8. A gateway 220 provides a “bridge” between the telephone networks 210 of the phones 160. *Id.* at 13:40–45. In response to an incoming call from such a phone 160, the gateway 220 establishes (or utilizes an existing) a session via standard protocols. *Id.* at 13:45–48.

A two-way radio system 180, 190 (collectively) connects to a channel via a gateway 230, which converts data (analog or digital) received from the system’s two-way radio interface device 190 into a data stream transmitted over the channel. *Id.* at 13:63–14:6, Fig. 9. If the gateway “does not have suitable support for the channels,” the proxy 997 is installed for directly communicating on a channel 110. *Id.* at 14:7–10.

An advantage of proxy device 997 is that

[b]ridging between channels by a proxy device 997 containing an embodiment of the invention accomplishes a wide range of

functionality. For example, such bridging can allow different “talk groups” on two-way radio systems to communicate between each other—for example a UHF two-way radio system on one channel and a VHF two-way radio system on the other. Another example is the ability to bridge channels managed by different entities—such as different law-enforcement agencies—together in such a way so that end-users within those entities are able to communicate with each other[]no matter the type of equipment they use.

Id. at 15:39–50.

Botha also describes

mixing of the data via a mixing layer 550. The mixing layer 550 is responsible for, where appropriate, combining media and data streams in such a way as to form entirely new streams or modify existing streams. For example: an embodiment of the present invention is that of the combination of a variety of audio streams—each from a different participant— in such a way that each participant will hear all other participants’ voices except their own. This is known as an ‘N minus 1’ mix— where ‘N’ represents the sum of all audio streams entering a the core logic of the invention, and the ‘minus ’ portion refers to the subtraction of the current participant's stream from the stream returned to them. A simple example of such an ‘N minus 1’ mix is the experience one has when participating on an ordinary telephone conference where you hear all participants’ voice except your own.

Id. at 10:31–46.

Botha also explains that proxy device 997 may have “the ability to bridge channels managed by different entities— such as different law-enforcement agencies— together in such a way so that end-users within those entities are able to communicate with each other— no matter the type of equipment they use.” *Id.* at 15:46–50. Botha explains that

[t]he flow may be of numerous, and potentially recursive, combinations of the channels’ participation in the operation

being carried out on the device 997 including, but not limited to, direct channel-to-channel streaming, aggregation of data from one or more channels to one or more channels, conversion of data from one or more channels to one or more channels, translation of data from one or more channels to one or more channels, or any inclusive or exclusive combination thereof.

Id. 15:59–67.

2. *Radenkovic (Ex. 1005)*

Radenkovic is a U.S. patent titled “Audio Data Processing.” Ex. 1005, code (54). Radenkovic “relates to audio data processing and in particular concerns a method, system and software application program for a real-time audio service for processing audio data streams transmitted over a communications network.” *Id.* ¶ 1.

The background description of the invention describes approaches and respective drawbacks of “audio service for many simultaneous speakers.”

Id. ¶ 6. One example is:

Audio services are known in which peer-to-peer architectures provide each user with an independent audio stream from each respective speaker. By receiving independent audio streams each listener can create their own personal audio mix.
...

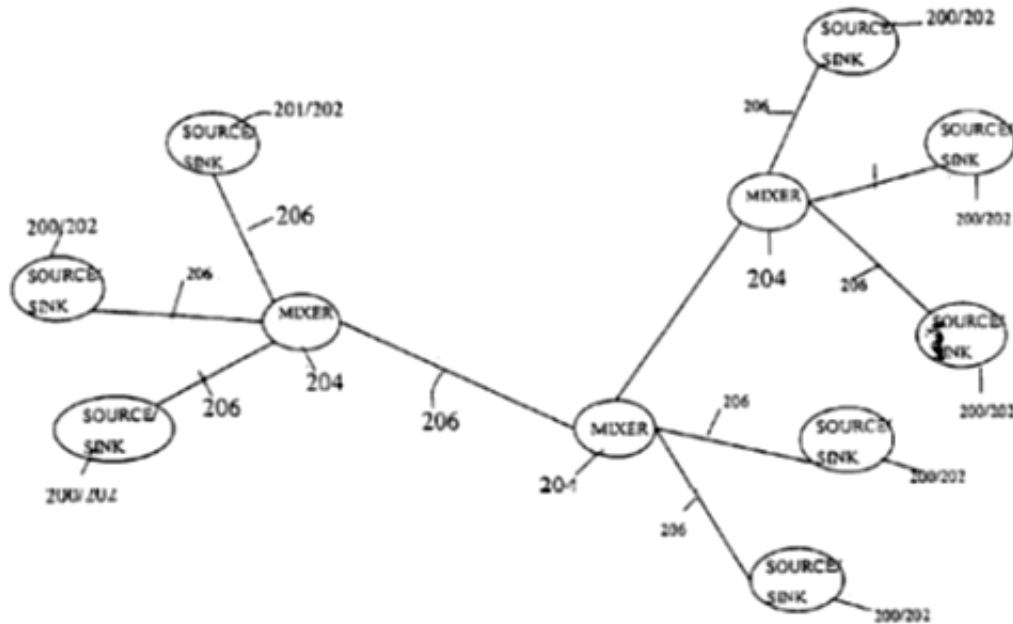
The peer-to-peer approach is very demanding in terms of network resources, particularly bandwidth, and can easily flood the network with traffic.

Id. ¶¶ 7–8. Another example is:

In [a] total mixing approach[,] each audio stream is sent to a central audio server that mixes the audio streams into a single stream that is then redistributed to each listener. ... Total mixing ... prevents each listener from creating their own personal mix and the central server becomes a potential bottleneck in the system, since it and its nearby network still have to receive, mix and distribute n audio streams.

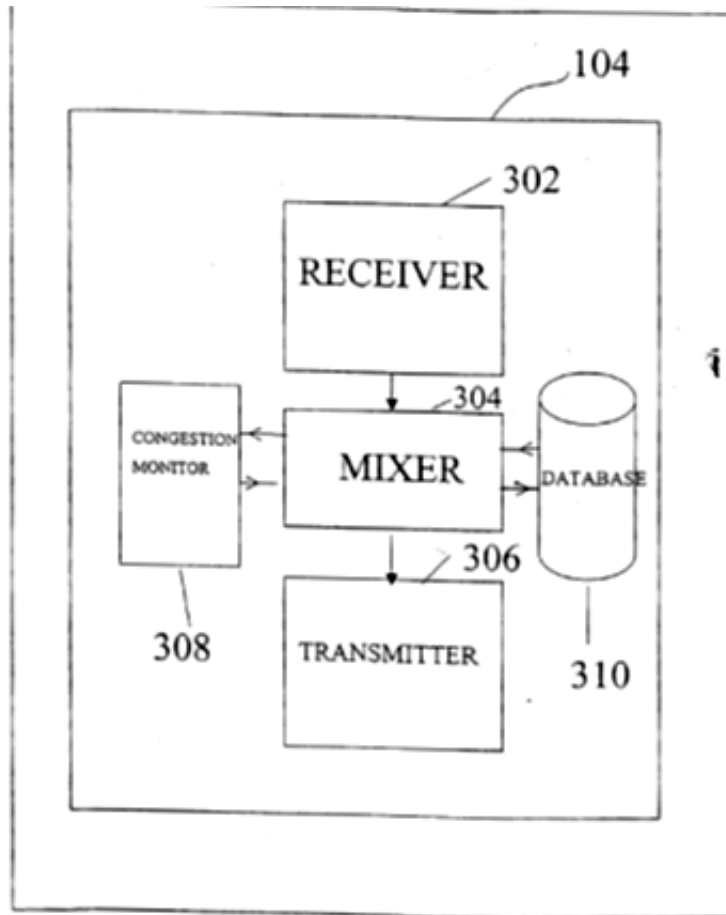
Id. ¶ 10.

Figure 2, reproduced below, “is a schematic representation of a logical network topology for part of the [invention].” *Id.* ¶ 41.



The network includes audio data stream sources 200, audio data stream sinks 202, and audio mixers 204. *Id.* ¶ 49. The sources and sinks 200, 202 are positioned at the terminal nodes of the network. *Id.* The mixers 204 are positioned at the non-terminal nodes. *Id.* Each source 200 transmits one or more audio data streams to a respective parent mixer 204. *Id.* The mixers forward the stream/s directly to the other nodes and/or mix and relay the streams. *Id.* Each sink 202 thus receives each of the data streams either in the original un-mixed state or as part of a new mixed stream. *Id.*

Figure 3, reproduced below, “shows a modular block diagram of an audio data processor for processing audio data streams transmitted in the network.” *Id.* ¶ 42.



The audio data stream processors are integrated with selected IP multicast enabled routers. *Id.* ¶ 50. Each audio processor 104 includes an audio data stream receiver 302 for receiving audio data streams transmitted over the IP network, an audio mixer component 304 for mixing selected audio data streams, and an audio data stream transmitter 306 for forwarding the mixed and unmixed audio data streams to other audio processors 104 or terminals 100 in the IP network. *Id.* Each audio processor is further

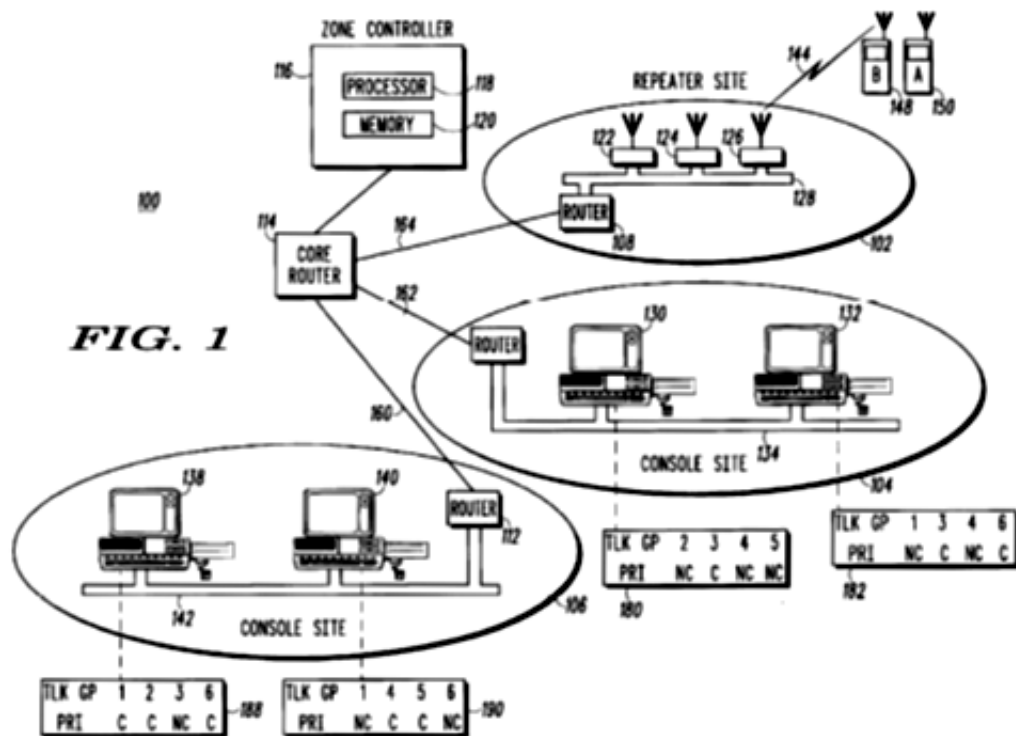
provided with a congestion monitor 308 for monitoring congestion on the respective communication transmission links connecting the audio processor 104 to other parts of the network. *Id.* ¶ 51.

3. *McDonald (Ex. 1007)*

McDonald is a U.S. patent titled “Method of Call Control for Console Sites Monitoring Critical Talkgroups in a Packet-Based Communication System.” Ex. 1007, code (54). McDonald “relates generally to communication systems and, more particularly, to packet-based communication systems.” *Id.* ¶ 1.

The background description of the invention describes “[c]ommunication systems [that] include . . . portable radio units and dispatch consoles . . . geographically distributed among various repeater sites and console sites.” *Id.* ¶ 2. The subject “communication systems [use] packet-switched networks where [communication] is divided into packets and transported by various routers forming an Internet Protocol (IP) network.” *Id.* ¶ 3. An asserted drawback of such prior systems is that, “[f]or practical reasons, certain of the shared links may be sized to accommodate fewer endpoints than may desire to participate in a call.” *Id.* ¶ 4. And, “it is possible that the available bandwidth is consumed by relatively low priority calls (e.g., passively monitored talkgroups), causing relatively high priority calls (e.g., actively monitored ‘critical’ talkgroups) to be busied.” *Id.*

Figure 1, reproduced below, “is a block diagram of a packet-based communication system according to the invention.” *Id.* ¶ 7.



The “single-zone packet-based” system 100 includes a repeater site 102 and console sites 104, 106 logically coupled by routers 108, 110, 112 to a core router 114. *Id.* ¶¶ 14–16. Generally speaking, bandwidth is made available for critical talkgroups being monitored at priority console sites by preempting non-critical talkgroups being monitored at those sites. *Id.* ¶ 12. Non-priority console sites may also be granted into the call if sufficient bandwidth is available. *Id.*

The repeater site 102 communicates, via radio frequency (RF) communication resources 144, 146, with portable radio units 148, 150 (also termed “communication units” and “subscriber units”) arranged into talk groups. *Id.* ¶ 15. The included repeaters 122, 124, 126 are coupled via Ethernet 128 to an associated router 108. *Id.*

The console sites 104, 106 each have a plurality of monitoring console positions. *Id.* ¶ 16. Console site 104 includes consoles 130, 132 coupled via Ethernet 134 to router 110. *Id.* Console site 106 includes consoles 138, 140 coupled via Ethernet 142 to router 112. *Id.* Consoles 130, 132, 138, 140 affiliate with various talkgroups, monitor payload (e.g., audio, video, data) communicated on the talkgroups, and indicate talkgroups as having either a critical priority or non-critical priority (shown in boxes 180, 182, 188, 190). *Id.*

A zone controller 116 (which has a processor 118 and memory 120) is coupled to the core router 114. *Id.* ¶ 14. The zone controller 116 obtains the priority information (boxes 180, 182, 188, 190) from the consoles 130, 132, 138, 140. *Id.* ¶ 21. The zone controller 116 thereby determines a monitoring status of each site requesting participation in a call and whether there is sufficient bandwidth to support the respective call request. *Id.* ¶ 32.

The repeaters 122, 124, 126 and router 108 at site 102, the consoles 130, 132 and router 110 at site 104, and the consoles 138, 140 and router 112 at site 106, and the core router 114 and zone controller 116 are all IP host devices and able to send and receive IP datagrams between other host devices of the network. *Id.* ¶ 18.

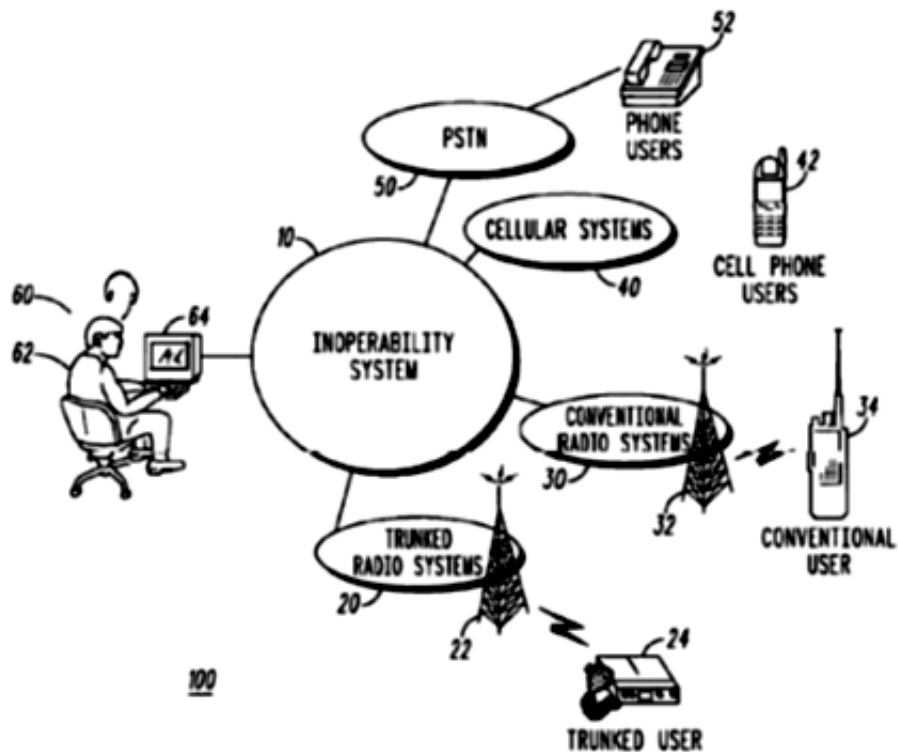
4. *Koren (Ex. 1006)*

Koren is a U.S. patent titled “Methods for Enhanced Communication Between a Plurality of Communication Systems.” Ex. 1006, code (54) (capitalization and bold omitted). Koren “relates generally to communication systems and, more particularly, to packet-based communication systems.” *Id.* ¶ 1.

The background description of the invention describes that, as part of initiatives to improve communications of First Responders responding to an emergency, “interoperability systems have been developed to interconnect users of various communications systems (e.g. trunked radio systems users, conventional radio systems users, public switched telephone network (PSTN) users, cellular telephone users, etc.).” *Id.* at 1:26–30. Despite such initiatives, “there still exists a need for features that enhance communications between two or more distinct communication systems connected using these interoperability systems.” *Id.* at 2:13–15.

Figure 1, reproduced below, “illustrates a diagram of a system that may be used to implement the present invention.” *Id.* at 2:26–27.

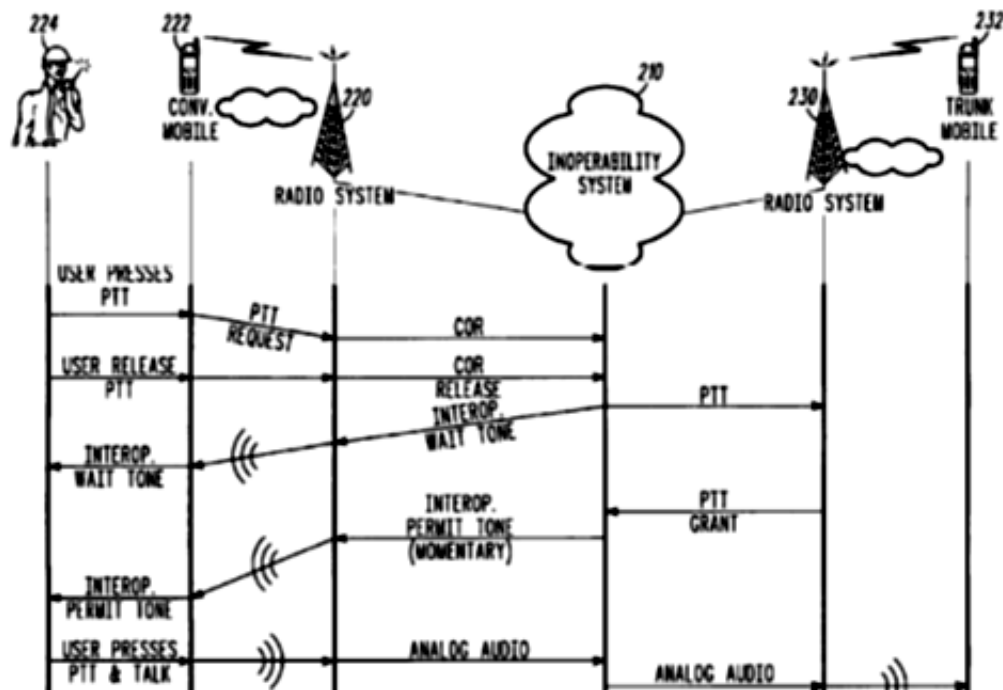
The system 100 includes ‘any suitable interoperability system 10



known in the art,” e.g., “a client/server based interoperability system, a peer-to-peer interoperability system[,] or some combination.” *Id.* at 3:35–

39. Interoperability system 10 may be used to connect “any two or more communication systems” and to “form dynamic talk groups.” *Id.* at 3:40–43. The illustrated communication systems 20–60 “are all conventional.” *Id.* at 3:52–53. In the example, the interoperability system 10 is connected to each of: trunked radio system 20 coupled by a radio apparatus 22 to a mobile radio unit 24; radio system 30, radio apparatus 32, and portable radio unit 34 similar to the trunked-system components 20, 22, 24; cellular system 40 coupled to a wireless cellular telephone 42; PSTN system 50 coupled to a landline telephone 52; and dispatcher system 60 having a computer 64 monitored by a dispatcher 62. *Id.* at 3:55–4:26.

Figure 2, reproduced below, “is a bounce diagram illustrating . . . an embodiment of the present invention for communicating a talk permit tone between a conventional radio system and a trunked radio system connected via an interoperability system.” *Id.* at 2:28–32.



First, the user 224 of the first radio system 220 presses and releases a push-to-talk (PTT) button of a first portable radio 222, which then sends a PTT request to the trunked radio system 230, which then sends a carrier operated relay (COR) signal (COR signal and then COR Release signal) to the interoperability system 210. *Id.* at 5:49–54. In response, the interoperability system 210 sends the PTT request to the second radio system 230 and sends an audible “wait tone” signal to the first portable radio 222 (through the first radio system 220) to inform the user 224 the second radio system 230 is not yet ready to receive the desired communication. *Id.* at 5:54–62. Upon receiving a PTT grant from the second radio system 230, the interoperability system 210 sends an audible “permit tone” signal to the first portable radio 222 (through the first radio system 220) to inform the user 224 the second radio system 230 is now ready; i.e., user 224 can again

press the PTT button to communicate with a second portable radio 232 of the second radio system 230. *Id.* at 6:1–9. Analog audio is then transmitted from the first portable radio 222 to the second portable radio 232 via the noted systems 210, 220, 230. *Id.* at 6:10–11.

F. Obviousness Based on Botha (Ground 1)

Petitioner contends that claims 1–7, 9, 13–19, 21, 25, 38, and 39 are obvious over Botha. Pet. 26–52. Petitioner provides a claim-by-claim analysis, supported by the testimony of Dr. Kiaei. Pet. 26–52; Ex. 1002 ¶¶ 89–130.

Patent Owner contends that Petitioner has failed to show: 1) Botha discloses the recited “plurality of monitored push-to-talk communication streams;” 2) Botha discloses the recited “mixing the plurality of monitored push-to-talk communication streams;” and 3) a motivation to combine multiple embodiments of Botha. Prelim. Resp. 12–21.

1. Independent Claim 1 - Contested Limitations

a) Limitation [1a]

Limitation [1a] recites: “*receiving a plurality of monitored push-to-talk communication streams over a high bandwidth connection, each monitored push-to-talk communication stream comprising audio communications from a plurality of users.*” Ex. 1001, 23:20–33.

Patent Owner contends that Petitioner has failed to show that Botha discloses “*receiving a plurality of monitored push-to-talk communication streams*” because “each monitored push-to-talk communication stream comprises audio communications from a plurality of users,” but the Petition’s Botha System “is made up of communication streams from *singular* users.” Prelim. Resp. 20. Patent Owner argues that “Botha

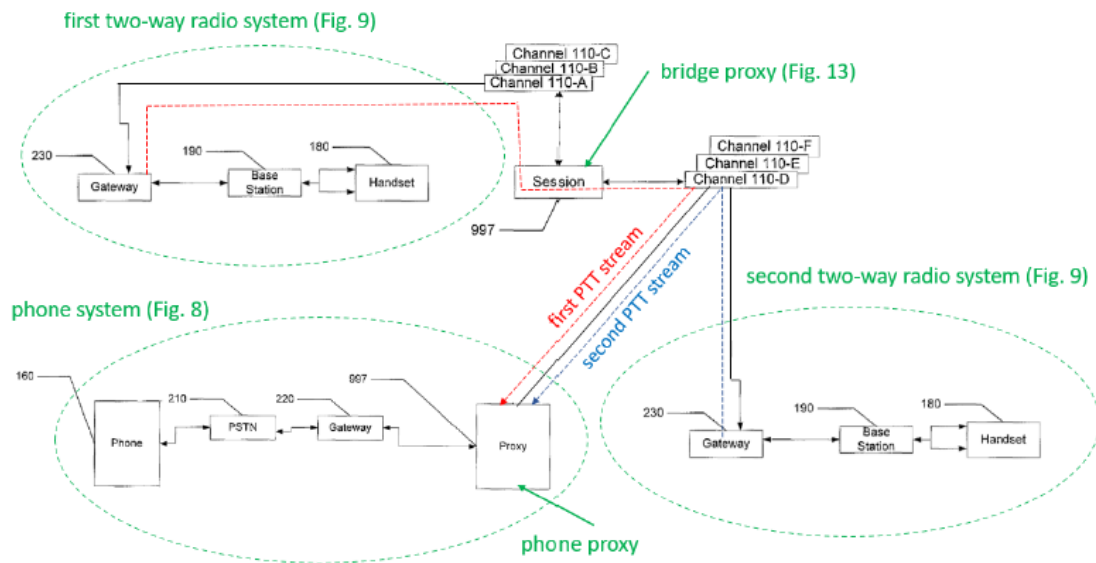
discloses combining audio from *individual* participants, not audio of a plurality of media streams that each contain a plurality of participants.” *Id.* (citing Ex. 1004, 10:29–37). Patent Owner argues that “Botha focuses on creating a single talk group from individual participants and does not disclose combining audio from different talk groups.” *Id.* at 21 (citing Ex. 1004, 7:13–18).

The Petition points out, however, that Botha teaches “two PTT [push-to-talk] two-way radio systems 190” and that “[e]ach radio system 190 includes a plurality of PTT two-way radios 180 that communicate in a virtual ‘talk group.’” Pet. 35–36 (citing Ex. 1004, 15:39–46, 14:39–40 (referring to “all other devices capable of receiving the data stream over the airwaves (collectively 180)”) and 14:61–67; *see also* Fig. 2 (showing multiple PTT two-way radios 180 connected to radio communications system 190)).

Petitioner explains that in the Botha System,

data is sent from the two-way radio system (collectively 190 and 180) through a gateway device 230 to convert analog or digital data received from a two-way radio interface device 190 into a packetized data stream, such as a multicast stream, and then transmitted over the network on a channel 110 to other endpoints. Ex. 1004, 13:63–14:6. The streams from each of these channels are received at a phone proxy 997 to which the phone 160 is connected as shown in the annotated Botha System diagram below. Ex. 1004, 13:49–51 and 13:18–31; Ex. 1002 ¶ 99. Thus, the phone proxy 997 to which the phone 160 is connected receives at least two multicast streams, each stream including push-to-talk communications from a plurality of endpoints 180 monitored by a respective radio system 190; Ex. 1002 ¶ 99.

Pet. 36. Petitioner’s annotated illustration of the Botha System is shown below.



Petitioner’s annotated illustration of the Botha System, above, shows a first two-way radio system (upper left) providing a first PTT stream, and a second two-way radio system (lower right) providing a second PTT stream, in communication with phone 160 (lower left) through phone proxy 997. Pet. 37.

Petitioner explains that “[w]hen the phone proxy 997 in the figure above is connected to channel 110-D via a LAN, the phone proxy 997 receives the two multicast streams, each stream including push-to-talk communications from a plurality of endpoints 180 monitored by a respective radio system 190, over a high bandwidth connection.” *Id.* at 37–38 (citing Ex. 1002 ¶ 100).

Dr. Kiaei explains that proxy 997 “performs a mixing function” whereby

[a] communication stream from the phone 160 is bridged onto a channel 110 using “n-minus-x” mixing such that data (e.g., communication streams) from the device 160 is propagated to the channel 110 and an aggregate (i.e., mixed) communication

stream corresponding to all other multicast or unicast streams on the channel is sent to the device (in this case, the phone 160) by the proxy 997.

Ex. 1002 ¶ 93 (citing Ex. 1004, 13:49–51 and 13:18–31).

Given this evidence, and notwithstanding Patent Owner’s evidence and arguments, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the teachings of Botha meet limitation 1[a]. Based on the current record, Petitioner’s unrebutted testimonial evidence supports Petitioner’s position that Botha teaches a plurality of push-to-talk communication streams comprising audio communications from a plurality of users.

b) Limitation [1b]

Limitation [1b] recites: “*mixing the plurality of monitored push-to-talk communication streams into a mixed communication stream such that the audio communications communicated in each of the monitored push-to-talk communication streams can be heard on the mixed stream.*”

Ex. 1001, 23:20–33. Patent Owner contends that Petitioner has failed to show that Botha discloses the recited “*mixing the plurality of monitored push-to-talk communication streams.*” Prelim. Resp. 12–14.

Patent Owner concedes that “Botha discloses a bridge proxy (997),” but contends that “[b]ridging is not that same as mixing.” Prelim. Resp. 13. Patent Owner asserts that “Botha is silent about mixing communications from the VHF two-way radio system with communications from the UHF two-way radio system,” and that in order to “mix” as recited by the independent claims, “proxy (997) would have to individually receive communications from the VHF two-way radio system and communications from the UHF two-way radio system,” and then “mix the communications

and then transmit the mixed communications back to each of the VHF two-way radio system and the UHF two-way radio system.” *Id.* at 13–14. Patent Owner argues that “Botha instead transmits the communications from the VHF two-way radio system to the UHF two-way radio system without any disclosure of those communications being mixed with the communications of the UHF two-way radio system.” *Id.* at 14.

Petitioner, however, asserts that “[t]he Botha System mixes the first and second monitored push-to-talk communication streams into a mixed communication stream such that the audio communications communicated in each of the monitored push-to-talk communication streams can be heard on the mixed stream.” Pet. 38.

Petitioner explains that

[i]n the Botha System, the data from the first PTT two-way system 190 connected to channel 110-A streams into the phone proxy 997 via the gateway 230 and the bridge proxy 997, and the data from the second PTT two-way radio system 190 connected to channel 110-D streams into the phone proxy 997 via the bridge proxy 997. Botha teaches that the proxy 997 to which the data is sent bi-directionally from one endpoint to another. Ex. 1004, 13:5–11. The phone proxy 997 connected to the phone 160, or alternatively the gateway 220 (the location of the mixing function is a design choice), creates an aggregate/mixed communication stream corresponding to all other multicast or unicast streams on the channel 110 and sends that stream to the phone 160 via the PSTN 210.

Pet. 38–39 (citing Ex. 1004, 13:49–51 and 13:18–31; 10:29–11:25; Ex. 1002 ¶ 102).

Dr. Kiaei’s testimony supports Petitioner’s understanding of Botha.

Dr. Kiaei testifies that

[i]n the Botha System, the multicast streams include a stream from each of the radio systems 190 (e.g. the UHF and VHF radios systems), each of which monitors PTT communications from a plurality of endpoints 180. This allows each of the endpoints 180 on both of these first and second PTT radio systems 190 and the phone 160 to connect to form a virtual talkgroup.

Ex. 1002 ¶ 103 (citing Ex. 1004, 15:39–50).

Indeed, Botha explains that

[t]he proxy operates in some manner like a centralized mixer but instead of propagating mixed audio into unicast streams, the proxy is configured to distribute mixed audio in a multicast manner. The result being that even though a mixer in the form of a proxy has been brought into play, the bandwidth requirements of the network are only increased by the number of output streams from the proxy and not by the number of participants receiving those streams.

Ex. 1004, 7:45–52.

Botha further explains that

mixing layer 550 is responsible for, where appropriate, combining media and data streams in such a way as to form entirely new streams or modify existing streams. For example, an embodiment of the present invention is that of the combination of a variety of audio streams-each from a different participant- in such a way that each participant will hear all other participants' voices except their own.

Id. at 10:31–38.

Given this evidence, and notwithstanding Patent Owner's evidence and arguments, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the teachings of Botha meet limitation 1[b]. Based on the current record, Petitioner's un rebutted testimonial evidence supports Petitioner's position that Botha teaches mixing a plurality of monitored push-to-talk communication streams.

2. *Independent Claim 1 – Uncontested Limitations*

Patent Owner does not expressly contest the remaining portions of independent claim 1. *See generally* Prelim. Resp. The uncontested portions of claim 1 include:

[1pre] A method for providing a push-to-talk proxy media service, comprising:

...

[1c] transmitting the mixed communication stream to a user endpoint over a low bandwidth connection.

Ex. 1001, 23:21–33.

Petitioner provides evidence and argument, supported by the testimony of Dr. Kiaei, that these uncontested portions of claim 1 are met by Petitioner’s proposed combination of Botha’s teachings, and that at the time of the claimed invention, claim 1 would have been obvious to a person of ordinary skill in the art. *See* Pet. 26–35, 40–41; Ex. 1002 ¶¶ 89–98, 105–106.

After reviewing Petitioner’s arguments and evidence concerning these portions of claim 1, which are not contested by Patent Owner at this stage of the proceeding, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Botha meet the uncontested portions of claim 1.

3. *Rationale to Combine*

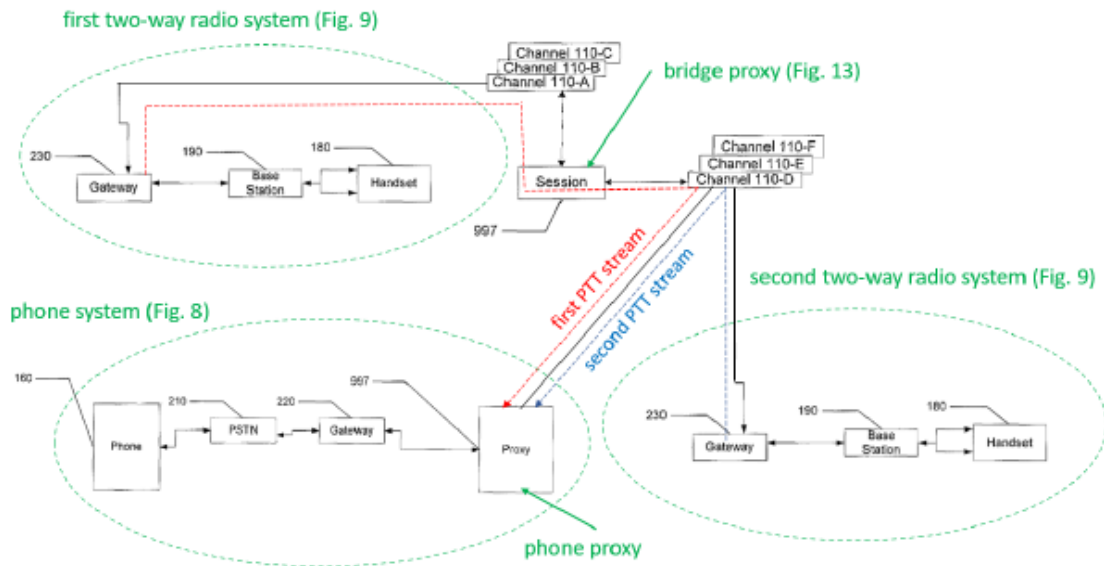
Patent Owner contends that Petitioner improperly combines multiple embodiments of Botha. Patent Owner asserts that

the Petition creates a fictional system, referred to as the “Botha System”. This fictional system is an amalgam of Figures 8, 9, and 13 from Botha, with multiple instances of Figure 9 included. Pet. 33–34. Botha fails to disclose a motivation to combine the

separate embodiments to allow Petitioner to create the purported Botha System.

Prelim. Reply 14–15.

An illustration of Petitioner’s “Botha System” is shown below.



Petitioner’s annotated illustration of the Botha System, above, shows a first two-way radio system (upper left from Fig. 9) providing a first PTT stream, and a second two-way radio system (lower right from Fig. 9) providing a second PTT stream, in communication with phone 160 (lower left from Fig. 8) through phone proxy 997. Session bridge proxy 997 (from Fig. 13) is also shown in communication with gateways 230 from the first and second two-way radio systems. Pet. 37.

Patent Owner asserts that Petitioner’s Botha System “fails to include all the elements from Figure 9.” Prelim. Resp. 15–16. Patent Owner points out that “[t]he Botha System from the Petition omits the endpoints (999) and proxies (997) of Figure 9 for the first and second two-way radio systems.” *Id.* at 16. Patent Owner argues that “[r]emoving the proxy (997) from Figure 9 in the fictional Botha System removes the essential component that allows

the handset (180) to communicate with the endpoint (999) for that particular embodiment.” *Id.* Patent Owner also argues that “Botha does not disclose how the proxy (997) of Figure 13 could be combined with the proxy (997) disclosed in the embodiments of Figures 8 and 9, let alone disclose whether the embodiments of Figures 8 and 9 are combinable with the embodiment of Figure 13. *Id.* at 17.

Patent Owner also argues that none of Petitioner’s citations to Botha teach combining separate embodiments. “Instead,” Patent Owner argues, “Botha discloses the ability of the embodiments to be carried out repetitively (Botha terms this as ‘recursively’),” and “[n]one of the listed operations from the Botha citation above are relevant for combining the different embodiments of Botha such that a handset and a phone are shared on a channel. Prelim. Resp. 17–18 (citing Ex. 1004, 15:59–67).

Patent Owner further argues that “Botha in fact teaches away from centralized audio mixing recited in the ’249 Patent,” because “Botha discloses that the endpoints themselves provide audio mixing from different sources.” Prelim. Resp. 19.

Petitioner, however, contends that “[c]ombinations of embodiments disclosed in Botha . . . are explicitly taught by Botha:

The flow may be of numerous, and potentially recursive, combinations of the channels’ participation in the operation being carried out on the device 997 including, but not limited to direct channel-to-channel streaming, aggregation of data from one or more channels to one or more channels, conversion of data from one or more channels to one or more channels, translation of data from one or more channels to one or more channels, or any inclusive or exclusive combination thereof.

Pet. 32–33 (citing Ex. 1004, 15:59–67; *see also* 8:28–31 (“It is noted that an embodiment of the invention is itself recursive in nature, in that the output of an instance of the invention may be input to another instance of the invention.”), and 11:55–12:3; Ex. 1002 ¶ 94).

“In light of this teaching,” Petitioner argues, a person of ordinary skill in the art “would have understood Botha as contemplating a wide variety of combined embodiments that would satisfy the limitations of the challenged claims.” Pet. 33. “As one example,” Petitioner asserts, a person of ordinary skill in the art

would have found it obvious to configure a system with a proxy 997 such as shown in Fig. 13 configured to bridge communications streams between (a) PTT two-way radio endpoints 180 on a first two-way radio system 190 on a first communication channel 110A, (b) PTT two-way radio endpoints 180 on a second two-way radio system 190 on a second communication channel 110D, and (c) one or more telephones 160 connected to channel 110A, 110D or another channel 110 via the PSTN 210, a gateway 220 and another proxy 997 as shown in Fig. 8 configured to perform mixing of communications streams from the two radio systems 190 to the telephone 160 as described above. An illustration of such an embodiment, which will be referred to herein as the Botha System, is shown in the block diagram . . . composed from parts of Figs. 8, 9, and 13.

Pet. 33 (citing Ex. 1002 ¶ 95).

Dr. Kiaei testifies that “[i]n such an embodiment of the Botha System, the phone proxy 997 to which the phone 160 is connected performs the mixing recited in limitation [1b], and includes the mixer recited in limitation [13b] and the “means for mixing” in limitation [25b]. Ex. 1002 ¶ 96. Dr. Kiaei also testifies that a person of ordinary skill in the art

would have been motivated to configure the Botha System in the way described above in order to, for example, allow two (or more) different monitored PTT two-way radio systems, such as operated by different police and/or fire departments, to communicate with each other and with, for example, a civilian in need of assistance or a remote supervisor via a phone connection.

Id. ¶ 97.

Based upon the current record, we find that Petitioner has articulated a sufficient rationale to combine the embodiments of Botha in the manner proffered in the Petition.

An obviousness determination “does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.” *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004). Oftentimes, the strongest rationale for combining is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994–995 (Fed. Cir. 1983).

Indeed, the Federal Circuit has repeatedly held that

an implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the “improvement” is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal—and even common-sensical—we have held that there exists in these situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves. In

such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him capable of combining the prior art references.

Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick, 464 F.3d 1356, 1368 (Fed. Cir. 2006).

Here, Dr. Kiaei testifies that a person of ordinary skill in the art would have been motivated to configure the Botha System in the way described above in order to, for example, allow two (or more) different monitored PTT two-way radio systems, such as operated by different police and/or fire departments, to communicate with each other and with, for example, a civilian in need of assistance or a remote supervisor via a phone connection.

Ex. 1002 ¶ 97.

Botha also points out that “[i]t is noted that an embodiment of the invention is itself recursive in nature, in that the output from an instance of the invention may be the input to another instance of the invention.” Ex. 1004, 8:28–31. Botha further explains that

[t]he manner of participation on channels 110 by a particular one or more endpoint type is described below by way of various non-limiting and non-exhaustive examples—it is appreciated that while these discrete examples are set forth using various network architectures, *such examples can be combined to provide yet other embodiments with different architectures, devices, configurations, and the like.*

Id. at 11:63–12:3 (emphasis added).

We disagree with Patent Owner’s argument that “Botha does not disclose how the proxy (997) of Figure 13 could be combined with the proxy (997) disclosed in the embodiments of Figures 8 and 9, let alone disclose whether the embodiments of Figures 8 and 9 are combinable with the embodiment of Figure 13.” Prelim. Resp. 17. “[I]t is not necessary that the

inventions of the references be physically combinable to render obvious the invention under review.” *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983). “Combining the teachings of references does not involve an ability to combine their specific structures.” *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973).

We also disagree with Patent Owner’s argument that “Botha in fact teaches away from centralized audio mixing recited in the ’249 Patent” because “Botha discloses that the endpoints themselves provide audio mixing from different sources.” Prelim. Resp. 19. A reference does not “teach away” if it merely expresses a general preference for an alternative invention from amongst options available to the ordinarily skilled artisan, and the reference does not discredit or discourage investigation into the invention claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). To teach away, a reference must actually “criticize, discredit, or otherwise discourage” investigation into the claimed solution. *Id.*

Based upon the present record, we determine that Petitioner has made a sufficient showing for purposes of institution that one of ordinary skill in the art would have had reason to combine the teachings of Botha in the manner described.

4. *Conclusion as to Independent Claim 1*

We have considered Petitioner’s evidence and arguments that the limitations of claim 1 are met by the combined teachings of Botha. Based on this preliminary record, and for the reasons given by Petitioner and those summarized above, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Botha meet the limitations of independent claim 1 and that a person of ordinary

skill in the art at the time of the claimed invention would have had reason to combine their teachings in the manner described, and would have had a reasonable expectation of success in so doing.

5. *Claims 2–7, 9, 13–19, 21, 25, 38, and 39*

Petitioner contends that claims 2–7, 9, 13–19, 21, 25, 38, and 39 would have been rendered obvious by the combined teachings of Botha. Pet. 41–52. Petitioner provides a detailed claim analysis, supported by the testimony of Dr. Kiaei. *Id.*; *see also* Ex. 1002 ¶¶ 107–130.

Patent Owner does not separately address Petitioner’s evidence and arguments directed to these remaining claims at this stage of the proceeding.⁴ *See generally* Prelim. Resp.

We have considered Petitioner’s evidence and arguments with respect to these remaining claims. Because we determine that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge to independent claim 1 under 35 U.S.C. § 103(a) as obvious over Botha, we institute *inter partes* review as to all other challenges in the Petition, including Petitioner’s challenges to claims 2–7, 9, 13–19, 21, 25, 38, and 39. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

G. Obviousness Based on Radenkovic and McDonald (Ground 2)

Petitioner contends that claims 1, 7–9, 12, 13, 19–21, 24, 25, 38, and 39 are obvious over the combination of Radenkovic and McDonald. Pet. 52–67. Petitioner provides a claim-by-claim analysis, supported by the testimony of Dr. Kiaei. Pet. 52–67; Ex. 1002 ¶¶ 131–163.

⁴ Patent Owner’s arguments made with respect to independent claim 1, however, are also asserted with respect to independent claims 13, 25, and 38. *See* Prelim. Resp. 12–21.

Patent Owner contends that Petitioner has failed to show that the asserted art teaches “receiving a plurality of . . . push-to-talk communication streams . . . comprising audio communications from a plurality of users” and “mixing the plurality of . . . push-to-talk communication streams.” Prelim. Resp. 22–23. Patent Owner also contends that Petitioner has failed to show a motivation to combine the teachings of Radenkovic and McDonald and that the combination has unintended results that would discourage the combination. *Id.* at 23–27. Patent Owner further contends that Petitioner has failed to provide any reasoning as to why the asserted art renders claims 38 and 39 obvious. *Id.* at 27–28.

1. *Independent Claim 1’s Contested Limitations*

a) *Limitation [1a]*

Limitation [1a] recites: “*receiving a plurality of monitored push-to-talk communication streams over a high bandwidth connection, each monitored push-to-talk communication stream comprising audio communications from a plurality of users.*” Ex. 1001, 23:20–33.

Patent Owner contends that Petitioner has failed to show that the combined teachings of Radenkovic and McDonald teaches “*receiving a plurality of . . . push-to-talk communication streams . . . comprising audio communications from a plurality of users.*” Prelim. Resp. 22–23.

Patent Owner asserts that

[t]he combination of Radenkovic and McDonald discloses endpoints, each assigned to a talkgroup (A or B), which send audio to repeaters to be transmitted to the other endpoints in that talkgroup. It appears that the communications of each endpoint (148-156) are discrete in the Radenkovic and McDonald combination when sent to the core router (114), or mixer of Radenkovic, rather than any stream comprising communications

from a plurality of users, since the routers (108, 110) are associated with the repeaters (122-126, 130-134), which receive singular, one-sided communications from singular user endpoints (148-156).

Prelim. Resp. 22–23.

According to Patent Owner,

Radenkovic and McDonald do not receive a plurality of communications streams comprising communications from a plurality of users. The data is individual, and all sent alongside each other to the mixer, rather than comprising communications streams that include communications from a plurality of users, while at the same time the talkgroups are sending discrete audio communications back and forth over the repeaters.

Id. at 23.

Petitioner, however, points out that in McDonald,

[t]he description of the embodiment of Fig. 1 discloses the receipt of multiple audio streams from multiple talkgroups at router 114, but to the extent that Patent Owner argues that it does not, U.S. Patent No. 6,647,020 (which is incorporated by reference in its entirety in McDonald; EX1007, ¶[0003]) discloses the receipt of multiple streams on links 162, 164 from multiple talkgroups, each talkgroup including multiple radios 148-150 and 152-156, from multiple sites 102, 104.

Pet. 60.

Figure 1 from U.S. Patent No. 6,647,020 (Ex. 1008), incorporated by reference in McDonald (Ex. 1007 ¶3) is shown below.

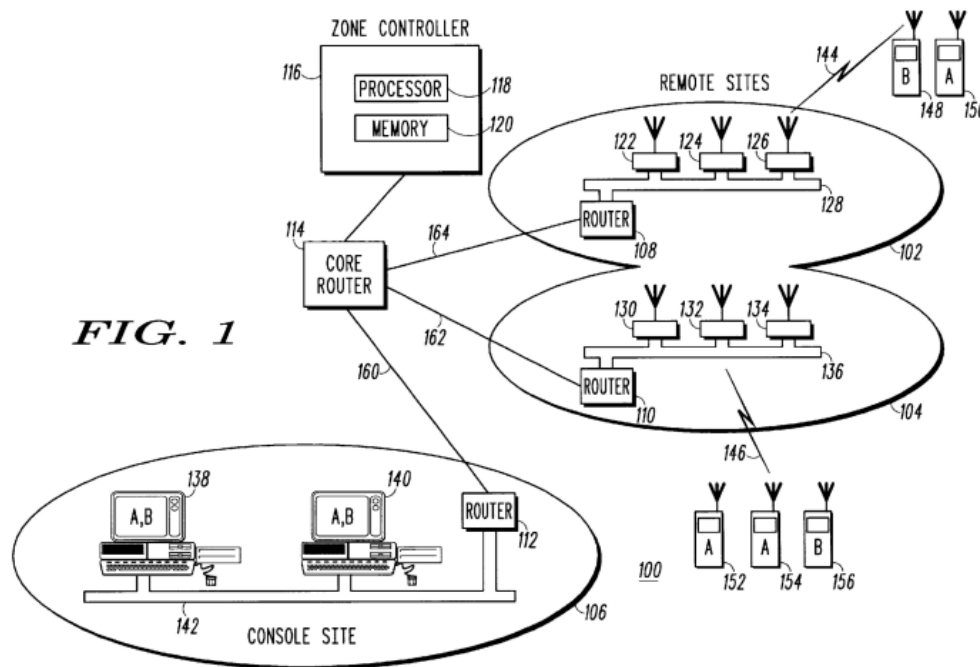


Figure 1 from U.S. Patent No. 6,647,020 (Ex. 1008) is a block diagram of an IP multicast communication system comprising a plurality of sites 102, 104, 106 that are coupled, via respective routers 108, 110, 112 to a core router 114. Ex. 1008, Fig. 1, 4:5–9. A plurality of subscriber units communication device, console (wireless or wireline), 148-156 are arranged into talk groups having corresponding talk group identifications as known in the art. Any number of talk groups having corresponding talk group identifications can be established within the system 100. In Fig. 1, two separate talk groups are shown, identified by labels “A” and “B.” Talk group “A” at least includes the subscriber units 150, 152, 154 and talk group “B” at least includes the subscriber units 148, 156. *Id.* at 5:54–62. Dr. Kiaei’s testimony corroborates this understanding. *See* Ex. 1002 ¶ 150.

Given this evidence, and notwithstanding Patent Owner’s evidence and arguments, we are persuaded that Petitioner has demonstrated

sufficiently for purposes of institution that the combined teachings of Radenkovic and McDonald meet limitation [1a]. Based on the current record, Petitioner's un rebutted testimonial evidence supports Petitioner's position that the combined teachings of Radenkovic and McDonald teaches receiving a plurality of push-to-talk communication streams comprising audio communications from a plurality of users.

b) Limitation [1b]

Limitation [1b] recites: “*mixing the plurality of monitored push-to-talk communication streams into a mixed communication stream such that the audio communications communicated in each of the monitored push-to-talk communication streams can be heard on the mixed stream.*”

Ex. 1001, 23:20–33.

Patent Owner contends that the combination of Radenkovic and McDonald fails to teach “*mixing the plurality of . . . push-to-talk communication streams.*” Prelim. Resp. 22–23.

Patent Owner uses the same arguments for limitation [1b] as it used for limitation [1a]. See Prelim. Resp. 22–23. Patent Owner argues that

Radenkovic and McDonald do not receive a plurality of *communications streams* comprising communications from a *plurality of users*. The data is individual, and all sent alongside each other to the mixer, rather than comprising communications streams that include communications from a plurality of users, while at the same time the talkgroups are sending discrete audio communications back and forth over the repeaters.

Id. at 23.

Petitioner explains that

the core router in the Mixed McDonald system includes a mixer, e.g. the mixer 304 of Fig. 3 in Radenkovic. When the core router

detects (e.g., via congestion monitor 308) that the bandwidth is not sufficient to transmit audio streams from all selected talkgroups from the core router to a console, the mixer in the core router of the Mixed McDonald System is configured to mix two or more non-critical streams into a combined stream for passive monitoring at the console so that audio from all selected streams is transmitted from the core router to the console using the available bandwidth.

Pet. 62 (citing Ex. 1002 ¶ 152). Dr. Kiaei's testimony supports Petitioner's position. Ex. 1002 ¶¶ 152–153.

Given this evidence, and notwithstanding Patent Owner's evidence and arguments, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Radenkovic and McDonald meet limitation [1b]. Based on the current record, Petitioner's un rebutted testimonial evidence supports Petitioner's position that the combined teachings of Radenkovic and McDonald teaches mixing a plurality of push to talk communication streams.

2. *Independent Claim 1 – Uncontested Limitations*

Patent Owner does not expressly contest the remaining portions of independent claim 1 under this ground. *See generally* Prelim. Resp. The uncontested portions of claim 1 include:

[1pre] A method for providing a push-to-talk proxy media service, comprising:

...

[1c] transmitting the mixed communication stream to a user endpoint over a low bandwidth connection.

Ex. 1001, 23:21–33.

Petitioner provides evidence and argument, supported by the testimony of Dr. Kiaei, that these uncontested portions of claim 1 are met by

Petitioner's proposed combination of Radenkovic and McDonald, and that at the time of the claimed invention, claim 1 would have been obvious to a person of ordinary skill in the art. *See* Pet. 52–58, 63; Ex. 1002 ¶¶ 131–147, 154–155.

After reviewing Petitioner's arguments and evidence concerning these portions of claim 1, which are not contested by Patent Owner at this stage of the proceeding, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Radenkovic and McDonald meet the uncontested portions of claim 1.

3. *Rationale to Combine*

Patent Owner asserts that the Petition fails to disclose a motivation to combine the teachings of Radenkovic and McDonald, and the combination has unintended results that would discourage the combination. Prelim. Resp. 23–27. Patent Owner contends that “[t]he proposed combination of Radenkovic and McDonald creates an unworkable, inconsistent communication system where a mixed stream of noncritical talk groups would be incoherent to a dispatcher monitoring the stream.” *Id.* at 25. Patent Owner asserts that Petitioner provides “[n]o motivation” to incorporate the mixing technique of Radenkovic into the McDonald disclosure. *Id.* Patent Owner also asserts that “[m]ixing audio streams would not have been useful in the Petition's fictional Mixed McDonald System” and “would be problematic since the talkgroups would be intermixed, creating confusion between the users” making “McDonald's call control system inoperable since McDonald's system needs to know the identities of users.” *Id.* at 26–27 (citing Ex. 1007 ¶ 11). *Id.* at 26.

Petitioner, however, contends that

It would have been obvious to a POSITA to address this problem of being unable to transmit audio streams for all selected talkgroups to one of McDonald's dispatcher consoles 132-140 due to bandwidth constraints by combining the hybrid selective dynamic mixing technique disclosed in Radenkovic with a system as taught by McDonald to allow audio from all talkgroups selected a console to be received at that console. In situations where there was not sufficient bandwidth to transmit audio streams for all talkgroups selected by a dispatcher, a POSITA would have found it obvious to dynamically mix two or more selected non-critical talkgroup audio streams into a single audio stream as taught by Radenkovic so that the mixed audio stream including all audio from both selected streams could be transmitted to a console 132-140 for passive monitoring by the dispatcher.

Pet. 54 (citing Ex. 1002 ¶¶ 138–139). Petitioner explains that

when modified in accordance with Radenkovic's teaching, the modified system transmits separate audio streams for talkgroups 1 and 2 and a mixed stream with the audio for talkgroups 3 and 4 (a total of three streams) over the link. The result is that both consoles 3 and 4 receive audio for all of their selected talkgroups.

Pet. 55 (citing Ex. 1002 ¶¶ 140–144). Petitioner further explains that “[a] POSITA would have been motivated combine the teachings of Radenkovic and McDonald in this manner in order to allow a dispatcher to hear and monitor audio from all talkgroups of interest that were selected by the console operator.” Pet. 56. Petitioner's position is supported by the testimony of Dr. Kiaei. Ex. 1002 ¶¶ 139–145.

Based upon the present record, we determine that Petitioner has made a sufficient showing for purposes of institution that one of ordinary skill in the art would have had reason to combine the teachings of Radenkovic and McDonald in the manner described and would have had a reasonable expectation of success in so doing.

4. *Conclusion as to Independent Claim 1*

We have considered Petitioner’s evidence and arguments that the limitations of claim 1 are met by the combined teachings of Radenkovic and McDonald. Based on this preliminary record, and for the reasons given by Petitioner and those summarized above, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Radenkovic and McDonald meet the limitations of independent claim 1 and that a person of ordinary skill in the art at the time of the claimed invention would have had reason to combine their teachings in the manner described, and would have had a reasonable expectation of success in so doing.

5. *Claims 7–9, 12, 13, 19–21, 24, 25, 38, and 39*

Petitioner contends that remaining claims 7–9, 12, 13, 19–21, 24, 25, 38, and 39 would have been rendered obvious by the combined teachings of Radenkovic and McDonald. Pet. 64–67. Petitioner provides a detailed claim analysis, supported by the testimony of Dr. Kiaei. Pet. 57–67; Ex. 1002 ¶¶ 156–163.

Patent Owner does not specifically address Petitioner’s evidence and arguments directed to these remaining claims at this stage of the proceeding, except with respect to dependent claims 38 and 39. Prelim. Resp. 22–28. With respect to claims 38 and 39, Patent Owner observes that “[t]he Petition states that Claims 38 and 39 of the ’249 Patent are allegedly obvious based on Ground 2. Pet. 52. However, Ground 2 *never addresses* Claim 38 or 39.” Prelim. Resp. 27 (citing Pet. 52–67).

We agree with Patent Owner. Although the Petition includes dependent claims 38 and 39 in Ground 2 on its List of Grounds (Pet. 2) as

well as its Section Headings for Ground 2 (Pet. 52), we are unable to find any substantive arguments in the Petition addressing claims 38 and 39 under Ground 2. *See* Pet. 52–67. Moreover, Dr. Kiaei does not appear to testify with respect to claims 38 and 39 under Ground 2 in his Declaration. *See* Ex. 1002 ¶¶ 131–163.

We have considered Petitioner’s evidence and arguments with respect to these remaining claims. Because we determine that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge to independent claim 1 under 35 U.S.C. § 103(a) as obvious over Radenkovic and McDonald, we institute *inter partes* review as to all other challenges in the Petition, including Petitioner’s challenges to remaining claims 7–9, 12, 13, 19–21, 24, 25, 38, and 39. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

H. Obviousness Based on Radenkovic, McDonald, and Koren (Ground 3)

Petitioner contends claims 2–6, 10, 11, 14–18, 22, and 23 are obvious over Radenkovic, McDonald, and Koren. Pet. 68–75. Petitioner provides a detailed claim analysis, supported by the testimony of Dr. Kiaei. *Id.*; *see also* Ex. 1002 ¶¶ 164–179.

Patent Owner does not separately contest Petitioner’s evidence and arguments with respect to this ground other than to state that these claims “depend from a patentable base claim and as such are patentable for that reason and for further patentably distinct features therein.” Prelim. Resp. 28.

We have considered Petitioner’s evidence and arguments with respect to this ground. Because we determine that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge to independent claim 1 under 35 U.S.C. § 103(a) as obvious over Botha (Ground 1) as well as over

Radenkovic and McDonald (Ground 2), we institute *inter partes* review as to all other challenges in the Petition, including Petitioner's challenges under Ground 3. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

IV. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition. We therefore institute trial as to all challenged claims on all grounds asserted in the Petition.

At this preliminary stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or any factual or legal issue underlying the patentability inquiry. Any final determination will be based on the complete record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response.

V. ORDER

Upon consideration of the record before us, it is

ORDERED that *inter partes* review of claims 1–25, 38, and 39 of the '249 patent is instituted as to all challenged claims on all grounds raised in the Petition;

FURTHER ORDERED that 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; the trial will commence on the entry date of this Decision.

IPR2024-00207
Patent 8,145,249 B2

FOR PETITIONER:

James Heintz
Peter Nelson
DLA PIPER LLP
jim.heintz@dlapiper.com
peter.nelson@us.dlapiper.com

FOR PATENT OWNER:

Jason Engel
Dennis Majewski
Erik Halverson
K&L GATES LLP
jason.engel.ptab@klgates.com
dennis.majewski@klgates.com
erik.halverson@klgates.com