UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ROKU, INC.,
Petitioner

v.

ANONYMOUS MEDIA RESEARCH HOLDINGS LLC,
Patent Owner

_____

Case IPR2024-01055
U.S. Patent 8,756,622

_____

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I. INTRODUCTION 5

II. LEVEL OF ORDINARY SKILL IN THE ART 5

III. THE BOARD SHOULD DISCRETIONARILY DENY INSTITUTION UNDER § 325(D).....7

A. Overview of Relevant Prosecution History.....8

B. The Office Substantively Considered the Same Prior Art Raised in the Petition…… ……11

C. Petitioner Cannot Demonstrate that the Office Committed a Material Error……. 14

1. Petitioner's art was extensively evaluated. 15

2. Petitioner has not shown where or how the Examiner erred. 16

3. Petitioner presents no new facts or evidence warranting reconsideration of the Wang References 18

IV. THE BOARD SHOULD DENY THE PETITION ON THE MERITS.....18

A. Ground 1 Does Not Render Any Claim Unpatentable.....18

1. The Wang References do not disclose or render obvious the claimed *play stream*. 19

2. The Wang References do not disclose or render obvious *utilizing a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples* (Claims [1.3], [6.3], [10.3]).....33

B. Ground 2 Does Not Render Any Claim Unpatentable.....42

C. Ground 3 Does Not Render Any Claim Unpatentable.....42

1. The combination fails to disclose or render obvious *identifying a channel corresponding to the data samples* [Claims 1.3, 6.3, 10.3] 42

2. The combination fails to disclose or render obvious *using one or more computers to utilize a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples* where the content identifiers *identify different media content items* [Claims 1.3-4, 6.3-4, 10.3-4].....44

3. The combination fails to disclose or render obvious *a play stream of content identification results* as claimed [Claims 1.3, 6.3, 10.3] 55

V. CONCLUSION.....60

EXHIBIT LIST

Exhibit No.	Description
2001	Declaration of Technical Expert Leo Hoarty
2002	*Curriculum Vitae* of Leo Hoarty
2003	U.S. Publication 2002/0038456 to Hansen et al. ("Hansen")

I. INTRODUCTION

Institution should be discretionarily denied under 35 U.S.C. § 325(d) pursuant to the two-part framework established by *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, 9 (PTAB Feb. 13, 2020) (precedential). *Infra* Section III. The first part of the framework is satisfied because the references relied on in Grounds 1 and 2—i.e., the combination of Wang777 and Wang060 (the "Wang References")—are not only the same references previously considered by the Office, but they were also applied by the Office in the same way as the Petition. The second part of the framework is satisfied because the Examiner did not materially err, but instead correctly determined that the Wang References do not disclose or render obvious the *play stream* or *channel identification* as claimed. And although Ground 3 relies on art not before the Examiner, that ground is so objectively weak that it cannot be an independent basis for institution. Even if discretionary denial was not warranted (it is), the Petition should still be denied on the merits for the reasons discussed herein. *Infra* Section IV.

II. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner's proposed definition for a person having ordinary skill in the art ("POSA") is unduly narrow because it would preclude a person without a formal degree but with considerable industry experience designing and implementing

automated content recognition ("ACR") systems from qualifying. Pet., 3; Ex. 2001 ¶¶46-48. Patent Owner's technical expert, Mr. Hoarty, has two years of college education in the field of electrical engineering, several decades of industry experience designing and implementing ACR systems, and numerous patents to his name covering ACR technologies. Ex. 2001 ¶¶2-14. He qualifies as a POSA under any reasonable proposed definition based on his industry experience, notwithstanding him having no formal degree. *Id.* ¶50.[1]

Petitioner's proposal is also overly broad in that it only requires industry experience in "digital media content delivery," which relates broadly to *delivering* media content rather than *recognizing* media content. *Id.* ¶49. The level of ordinary skill in the art requires industry experience designing or implementing ACR systems, which is a fundamental aspect of the claimed invention and the technology described in the '622 Patent. *Id.* It is the *recognition* or *identification* of delivered media content that is key, not simply delivering media content. *Id.* Mr. Hoarty has decades

[1] Notably, Samsung's proposed level of ordinary skill in the art in an IPR challenging U.S. Patent No. 10,719,849—the "video data sample" counterpart to the '622 Patent's "audio data sample" claims—recognizes that "[m]ore education can supplement practical experience and vice versa," as is the case here. *Samsung Electronics Co. Ltd. v. Anonymous Media Research Holdings, LLC*, IPR2024-01350, Paper 1, 7-8 (PTAB Aug. 26, 2024).

of experience with such systems, and thus also meets this narrower requirement. *Id.* ¶50.

III. THE BOARD SHOULD DISCRETIONARILY DENY INSTITUTION UNDER § 325(d).

The Board has established a two-part test for determining whether a petition should be discretionarily denied under § 325(d). It must first be determined that the same or substantially the same prior art or arguments were previously presented to the Office. *Advanced Bionics,* IPR2019-01469, Paper 6 at 7 ("35 U.S.C. § 325(d) identifies two separate issues for the Director to consider in exercising discretion to deny institution of review: whether the petition presents to the Office the same or substantially the same art previously presented to the Office, or whether the petition presents to the Office the same or substantially the same arguments previously presented to the Office."). If so, Petitioner bears the burden of showing that the Examiner materially erred in allowing the claims over the prior art. *Id.*, 8-9. Discretionary denial is appropriate here pursuant to *Advanced Bionics*.

In Grounds 1 and 2, Wang060 and Wang777 are the sole basis for invalidity against the independent claims. Pet., 3. As explained in Sections III.A and B below, those references were not only before the Examiner during prosecution, they were **repeatedly relied on** in combination to reject the claims. In fact, the Examiner specifically found, and continuously maintained, that the Wang References do not

disclose a *play stream* or *identifying a channel* as claimed. These are the same limitations that the Petition relies on the Wang References as teaching.

Given that the same art was previously considered, it is Petitioner's burden to demonstrate that the Examiner materially erred in her analysis of the Wang References. Petitioner fails to carry this burden as explained in Section III.C below. Indeed, the Examiner did not err because Wang References clearly fail to anticipate or render obvious the *play stream* and *identify a channel* limitations. *Infra* Section IV.A.

Although the Petition does include Ground 3, it should play no part in the *Advanced Bionics* calculus. That ground is so objectively weak that it cannot independently serve as the basis for institution. *Infra* Section IV.C. Indeed, Ground 3 appears to have been thrown in for the sole purpose of avoiding discretionary denial, not because it has merit. Given that Grounds 1 and 2 meet all requirements for discretionary denial, and Ground 3 cannot independently justify institution, discretionary denial is appropriate.

A. OVERVIEW OF RELEVANT PROSECUTION HISTORY

Prosecution of the '622 Patent lasted nearly six years, and the claims were subjected to extensive revisions by both the applicant and the Examiner. In fact, the claims were specifically amended to overcome the primary references relied on by Petitioner in Grounds 1 and 2—namely Wang060 and Wang777.

In the very first Office Action, the Examiner determined the claims as originally filed were unpatentable as obvious over Wang777 in view of U.S. Publication 2002/0038456 to Hansen et al. ("Hansen," Ex. 2003).

> 2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US20070143777, hereinafter Wang) in view of Hansen et al. (US20020038456, hereinafter Hansen). Note: Wang incorporates by reference Wang et al. (US20020083060, hereinafter Wang '060), see Wang [0022]),

Ex. 1002, 108 (annotated). Importantly and as shown, the Examiner recognized that Wang060 is actually a part of Wang777 via incorporation by reference. Thus, even when the Examiner referenced Wang777 or Wang060 individually, the Examiner considered them together. In the office action, the Examiner determined that "Wang does not specifically disclose a play stream of results." *Id.*

A first telephonic interview was then held to discuss the "differences between Applicant's invention and the Wang disclosures":

> Identification of prior art discussed: *Wang '777 and Wang '060 (both of record), and Kolessar (of record)*.
>
> Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.
>
> Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Discussed differences between Applicants' invention and the Wang disclosures. Discussed Applicants definition of "channel". Discussed proposed amendments to the claims. An agreement was not reached. A subsequent interview will be held to further discuss proposed amendments*.

Id., 154 (annotations added). As shown, the Examiner viewed the Wang References as one, even referring to them as "the Wang disclosures" (plural).

In a follow-up interview the next day, the Examiner again specifically

referenced the Wang References and determined that amending the claims to recite "using an ***order of at least two different content identifiers*** in the play stream to identify a channel corresponding to ***the captured samples***" would overcome those references:

Identification of prior art discussed: *Wang 060 and Wang 777 (both of record*.

Agreement with respect to the claims f)☒ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Discussed additional proposed amendments to the claims. The proposed amendment of "using an order of at least two different content identifiers in the playstream to identify a channel corresponding to the captured samples" overcomes the art rejection of record*.

Id., 157 (annotations added).[2]

Consistent with the interview summary, claim 1 was then amended as follows:

Claim 1 (Currently Amended): A media measurement method comprising:

generating a ~~raw~~ play stream of content identification results corresponding to a sequence of data samples; and

using ~~sample sequence data~~ an order of at least two different content identifiers in the play stream to identify a channel corresponding to the samples.

Id., 137; *see also id.*, 138 (discussing the two telephonic interviews)

This clarifying amendment added the language that now exists in all of the issued independent claims. It is a product of the Examiner's own independent determination as to what the Wang References lack and was made to overcome

[2] All bold emphasis in this response is added, unless otherwise indicated.

Wang777 and Wang060 because they do not teach or render obvious a play stream with *two different content identifiers* corresponding to *a sequence of data samples* (plural), where those content identifiers are used to *identify a channel corresponding to the samples*. These distinctions over the Wang References were consistently maintained by the Examiner through the remainder of the prosecution.

Application/Control Number: 12/283,332 Page 3
Art Unit: 2421

Regarding claim 1, Wang '060 discloses a media measurement method (see Wang '060, Figs. 1-3) comprising:

generating content identification results (see Wang '060, [0081], lines 26-30) corresponding to a sequence of data samples (see Wang '060, [0090], lines 1-3); and

identifying a channel corresponding to the samples (the channel being the album, see Wang '060, [0107], lines 1-14).

Wang does not specifically disclose a play stream of results, or using an order of at least two different content identifiers in the play stream to identify the channel corresponding to the samples.

Id., 183; *See also id.*, 238.

B. The Office Substantively Considered the Same Prior Art Raised in the Petition.

The first part of the *Advanced Bionics* framework addresses whether the same or substantially the same prior art or arguments were previously presented to the Office. *See Advanced Bionics*, IPR2019-01469, Paper 6, at 8. As demonstrated above, the Wang References were not only before the Examiner during prosecution,

but were specifically applied in the same manner that Petitioner applies them here. Consequently, not only is the "same art" requirement satisfied, so too is the alternative "substantially same arguments" requirement.

Petitioner argues that the first part of *Advanced Bionics* is not satisfied because "Herley682, Seet, Pitman, Schrempp, and Wells were not before the Examiner during prosecution." Pet., 103. Petitioner is wrong.

Turning first to Herley682 and Seet, they are only relied on by Petitioner to address the dependent claims, not the independent claims. Thus, even if Herley682 and Seet constitute "new art," that is irrelevant to discretionary denial given that they are not relied on to address the shortcomings of the Wang References as applied to the independent claims. Indeed, if the Wang References are the "same art" and the Examiner did not materially err in allowing the broader independent claims over the Wang References, references relied on only for narrower dependent claims cannot save the Petition from denial.

As to Pitman-Schrempp-Wells, Petitioner relies on them only for Ground 3. However, Ground 3 is so objectively weak that it cannot independently serve as the basis for institution. *Infra* Section IV.C. Given that Ground 3 cannot independently justify institution, the discretionary denial analysis turns on Ground 1 and 2 alone. Indeed, Petitioner cannot avoid discretionary denial solely because it included a ground based on new art but with no legitimate expectation of success. To conclude

otherwise would invite petitioners to include half-hearted grounds for the sole, strategic purpose of avoiding discretionary denial under § 325(d).

Petitioner also argues that the first part of *Advanced Bionics* is not satisfied because: 1) "Wang777 and Wang060 were cited individually during examination"; 2) "the Examiner did not rely on a combination of the teachings of Wang777 and Wang060;" and 3) "did not cite many of the portions of Wang777 and Wang060 that are relied upon in this IPR." Pet., 103.

First and foremost, even if all of these statements were true, it is irrelevant to the first part of *Advanced Bionics* because there is no dispute that Wang777 and Wang060 are "the same art" that was before the Office during examination. If the same art was before the Office, the first part of *Advanced Bionics* is satisfied regardless of whether that art was applied in the same way by the Examiner, or even specifically relied on by the Examiner at all in an office action. *See Advanced Bionics*, IPR2019-01469, Paper 6 at 7-8 ("Previously presented art includes art made of record by the Examiner, and art provided by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent."); *See Nespresso USA, Inc. v. K-fee System GmbH*, IPR2021-01222, Paper No. 9, 11 (PTAB Jan. 18, 2022) (quoting *Advanced Bionics*, IPR2019-01469, Paper 6 at 8) (explaining that petitioner's position "in practical effect, disregards the conjunctive 'or' that appears in the statute 35 U.S.C. § 325(d)" and

"[w]here *either* the prior art references advanced *or* the arguments raised in a petition previously were presented to the Office, the inquiry shifts to whether the petitioner establishes a material error") (emphasis in original).

Second, each of Petitioner's statements is plainly wrong—the Examiner clearly relied on both Wang777 and Wang060, expressly used them in combination, and even treated them as a single reference based on Wang777's incorporation by reference of Wang060. *Supra* Section III.A. Moreover, as explained further below, the Examiner relied on the same portions relied on by the Petition for the alleged *play stream*. *Infra* Section III.C.1.

C. Petitioner Cannot Demonstrate that the Office Committed a Material Error.

Petitioner cannot satisfy the second part of *Advanced Bionics* because Petitioner fails to demonstrate that the Office erred in a manner material to patentability in allowing the challenged claims. *Advanced Bionics*, IPR2019-01469, Paper 6 at 8-9. The Board considers the following factors in assessing the second part:

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

Id., 9-10. These factors weigh against institution, as the cited art was evaluated

closely during examination, the claims at issue were specifically amended by the Examiner in consideration of the very arguments made in the Petition, and Petitioner fails to establish that the Examiner in any way erred.

1. Petitioner's art was extensively evaluated.

The Examiner thoroughly applied Wang777 and Wang060 to the claims across every office action. *Supra* Section III.A. In fact, extensive amendments were made **by the Examiner** in light of Examiner interviews specifically dealing with obviousness rejections based on the Wang References. Ex. 1002, 274-277. Thus, Wang060 and Wang777 were extensively examined by the Office prior to allowance.

Moreover, the Petitioner relies on some of the same paragraphs most relevant to original examination. Specifically, the Petition cites heavily to Wang060's Fig. 9B, a "candidate list" (described in greater detail in Section IV.A below), along with its discussion in paragraphs [0081]-[0084] of Wang060, as allegedly teaching the claimed *play stream* missing from Wang777. *See* Pet., 41, 51, 69, 71-72 (citing Ex. 1006 ¶¶[0081], [0082], [0083], [0084], and Fig. 9B), 58 and 62 (citing Ex. 1006 ¶[0107]), 60 (citing Ex. 1006 ¶[0090]). But these are the very same sections relied on by the Examiner during prosecution. *See e.g.*, Ex. 1002, 108-109 (citing and applying Wang060 ¶¶[0080]-[0084][0090]), 183-184 (same), 238-234 (same). And although the Examiner did not cite paragraph [0072] of Wang777, there was no basis

for the Examiner to do so. Indeed, as extensively discussed later in Section IV.A, that paragraph does not teach or suggest at least two limitations that Petitioner relies on the paragraph for, including *identifying a channel* based on *two different obtained content identifiers in the play stream* or a *play stream* corresponding to a *sequence of audio data samples*. Consequently, this factor weighs heavily in favor of discretionary denial.

2. Petitioner has not shown where or how the Examiner erred.

"If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability." *Advanced Bionics*, IPR2019-01469, Paper 6 at 9. The only argument that Petitioner offers to address part two of *Advanced Bionics* is that "the Examiner clearly erred by not considering or applying Herley682, Seet, Pitman, Schrempp, or Wells in rejecting the claims." Pet., 103.

As an initial matter, Petitioner does not even allege that the Examiner erred in her application of the Wang References to the claims, instead relying solely on its prior argument that the Wang References are (somehow) not "the same art" considered by the Office under part one of *Advanced Bionics*. Although Petitioner alleges in its detailed mappings that the combination of Wang References discloses the claimed *play stream*, the Petition does not point out or explain where the Examiner purportedly erred in her analysis. Petitioner has thus failed to "point[] out

sufficiently how the examiner erred in its evaluation of the asserted prior art." *Advanced Bionics*, IPR2019-01469, Paper 6 at 9-10. Moreover, this response demonstrates that the Examiner did not err by determining that the Wang References do not disclose or render obvious the claimed *play stream* or *identify[ing] a channel* as claimed.

With respect to Herley682, Seet, Pitman, Schrempp, and Wells, Petitioner's contention that the Examiner "materially erred" by not considering them is unreasonable on its face. The Examiner cannot be said to "materially err" by allowing claims over prior art that was not before her. Petitioner cites no precedent or authority for this bizarre notion. Instead, the focus is whether the Petition here has demonstrated that the Examiner materially erred with respect to her consideration of the "same art" before the Office—i.e., the Wang References.

Even if Herley682, Seet, Pitman, Schrempp, and Wells had been before the Examiner, she would not have erred in allowing the claims over those references. First, Petitioner itself does not rely on Herley682 or Seet to try to invalidate the independent claims. Thus, even if the Examiner had those references available to her, they would not have been the basis for rejecting those claims. Second, Patent Owner demonstrates that the combination of Pitman-Schrempp-Wells is so objectively weak that it cannot serve as an independent basis for invalidity. *See Infra* Section IV.C. Consequently, the Examiner would not have erred by allowing the

claims over those references either.

3. Petitioner presents no new facts or evidence warranting reconsideration of the Wang References

Petitioner does not specifically identify any new facts or evidence warranting consideration. Pet., 103. In any event, as explained above, Wang060 and the Wang777 are not "new facts or evidence." They are the same references that were carefully analyzed and applied by the Examiner. The amendments were also specifically made to overcome the Wang References based on the *play stream* limitation, which Petitioner contends is obvious based on the Wang References despite the Examiner correctly and repeatedly reaching the opposite conclusion. Even assuming the expert testimony is alleged to be "new evidence," the expert simply parrots the same flawed analysis from the Petition and thus does not warrant reconsideration of the Wang References. *Compare e.g.*, Pet., 41-42 *with* Ex. 1003 ¶¶112-116; *Compare e.g.*, Pet., 50-51 *with* Ex. 1003 ¶¶130-132.

IV. THE BOARD SHOULD DENY THE PETITION ON THE MERITS

A. Ground 1 Does Not Render Any Claim Unpatentable.

Ground 1 challenges the independent claims based solely on the Wang References. However, the Wang References fail to anticipate or render obvious at least two different claim limitations.

1. The Wang References do not disclose or render obvious the claimed *play stream*.

Independent claims 1.1, 6.1, 10.1[3] each require *a play stream of content identification results corresponding to a* ***sequence of data samples****, the data samples comprising representations of audio data captured* ***at a media monitoring device***. This limitation plainly requires that the *play stream* include content identification results from a corresponding *sequence of data samples* (**plural**) and that those data samples comprise representations of audio data captured at *a media monitoring device* (**singular**). In other words, the *play stream* must be associated with a sequence of data samples for a single media monitoring device. Ex. 2001 ¶53. That *play stream* serves as the basis for *identify[ing] a channel corresponding to the data samples* recited later in the claims. As the Examiner repeatedly and correctly found, neither Wang Reference discloses this limitation. *Supra* Section III.A. And even if Wang060 did disclose this (it does not), there would be no motivation to combine it with Wang777 as proposed by the Petition.

a) Neither Wang Reference discloses this limitation.

Petitioner alleges that Wang777 teaches the claimed *play stream*. *See* Pet., 45-46 (stating "Wang777 teaches first capturing a sequence of data samples (e.g., audio

[3] For consistency, Patent Owner uses the same identifiers for claim elements relied on by Petitioner.

samples) comprising representations of audio data (e.g., broadcast radio) captured at a media monitoring device (e.g., audio sampling device 102, 506, blue)"); *Id.*, 47 (stating "Wang777 also teaches generating content identification results (e.g., title, artist(s), and record label) corresponding to the sequence of audio data samples (e.g., the audio samples captured by audio sampling device 102, 506 over time)."). However, Petitioner fundamentally mischaracterizes Wang777 as relying on a **sequence of audio data samples** (plural) to identify a channel.

Wang777 repeatedly and exclusively teaches that its system identifies audio content based on an individual (i.e., single) audio sample from a sampling device. Ex. 2001 ¶¶54-55. This is clear from the very same portions of Wang777 relied on by Petitioner. *See* Ex. 1005 ¶¶[0009], [0019]–[0020], [0022], [0047], [0057] (each paragraph referring to "an audio sample" and "the audio sample" (singular)); *see also id.*, claims 1-24 (all referring to an "audio sample" (singular) recorded by the user). Petitioner itself admits—perhaps in a Freudian slip—that Wang777 teaches "a method for identifying a broadcast source of **an audio sample** and matching media file samples to a broadcast source from which **the sample** was transmitted." Pet., 43. Petitioner further acknowledges that "the USRTO is a time offset between a beginning of the identified content file from the database and a beginning of ***the audio sample being analyzed***, e.g., a user may record **a ten second sample** of a song beginning 67 seconds into a song." Pet., 48 (citing Ex. 1005, ¶[0047]).

Consequently, although the length of the individual sample may vary, there is still only an individual sample being analyzed one at a time. Ex. 2001 ¶56 (citing Ex. 1005 ¶¶[0022], [0024], [0047]).

Wang777 is fundamentally premised on analyzing an individual audio sample (e.g., audio from a song that the listener hears on the radio) from each individual user's sampling device (e.g., a phone 506). In other words, only a single sample is analyzed and identified, one at a time, for each media monitoring device—Wang777 does not rely on a play stream based on **multiple sequential samples** from a media monitoring device to do any content or channel identification. *Id.* ¶57

Even if a listener were to submit multiple samples, those samples would be analyzed individually to identify their content and channel—multiple samples are not collectively analyzed to identify anything in Wang777. Wang777 has no reason to rely on a play stream corresponding to a sequence of audio samples for content or channel identification, because the purpose of Wang777 is for a user to record an audio sample spontaneously to identify content (e.g., a song). Ex. 2001 ¶58 (citing Ex. 1005 ¶[0019] ("The user may hear an audio program being broadcast from some broadcast means, such as radio or television, and can record a sample of the audio using the audio sampling device.")). Nothing in Wang777 teaches or even begins to suggest generating a play stream based on multiple sequential audio samples and then using those sequential samples to identify content or a channel. *Id.*

In contrast to Wang777, the claimed invention generates a playlist based on a sequence of multiple audio data samples from a monitoring device because it is designed to observe the media consumption of an audience member over a longer period of time and identify the channel playing the content. *Id.* ¶59 (citing Ex. 1001, 1:22-26 ("[I]t is increasingly desirable to track usage of media across several types of media delivery vehicles including radio, television, CD, DVD, computer download, portable media players (e.g. MP3 players, ipod), and other vehicles.")). Multiple audio data samples are needed because the monitoring period is considerably longer than that needed for monitoring a short portion of content for spontaneous, one-off recognition, as taught by Wang777. *Id.* Wang777 thus fails to teach or suggest the claimed *play stream*, which corresponds to a sequence of audio data samples for a monitoring device.

Petitioner appears to acknowledge that Wang777 does not rely on multiple sequential samples to perform its content or channel recognition. Pet, 55 ("While the description of Figures 4-5 focus on identifying the source/channel for **a single audio data sample**…."). Petitioner then attempts to shoehorn the teachings of Wang777 into the claim language by suggesting that Wang777's transition-tracking feature (discussed in paragraph [0072]) somehow relies on a play stream corresponding to a sequence of audio data samples (plural) associated with a monitoring device. Pet., 55-56 (citing Ex. 1005 ¶[0072]). However, the transition-tracking feature, just like

Wang777's content and channel identification features, relies exclusively on **a single** sample. Ex. 2001 ¶60.

As Wang777 states, "to further verify that a user is actually listening to a given broadcast channel," a sample for content identification can simply be "taken ***over a longer period of time***, e.g., longer than a typical audio program, such as over a transition between audio programs on the same channel." Ex. 1005 ¶[0072]. In other words, all Wang777 discloses is increasing the length of time over which the **single** audio data sample is captured by the listener to capture song or program transitions. Ex. 2001 ¶60. As Wang777 further explains:

> If a match that is considered to be correct is actually the correct channel, a content alignment should be continuously maintained between song transitions. An exception can occur when the user records ***an audio sample*** while changing broadcast channels. However, continuity of **identity** over a program transition may be an indicator that the correct broadcast channel is being tracked. Thus, sample ***identity*** (e.g., Equation (1)) can be tracked, and user sample ***identity*** changes can also be tracked. For example, sample ***identities*** at multiple time periods can be tracked (as shown below in Equations 3-5), and if a first sample **identity** does not equal a second sample **identity** from a second time period (as shown below in Equation 5), then the continuity or transition between songs has been tracked. This can provide further confidence that a correct match has been made (e.g., when both the user and the broadcast sources change synchronously).

Ex. 1005 ¶[0072]. In other words, a longer user sample is taken (e.g., to capture a

song transition) and identities at different points of time in the sample ("sample identities") are compared to identities at different points in time in the broadcast sample(s). Ex. 2001 ¶61. There are not multiple samples being taken, but rather multiple identities based on a longer, single sample. *Id.*

Equations (3), (4) and (5) further confirm that only a single sample is relied on for the transition-tracking feature. Ex. 1005 ¶[0072]. Equations (3) and (4) track identities (n, n+1) within the sample "where n is the nth sample **in time**," and compare them to identities (n, n+1) of the broadcast sample(s). Ex. 2001 ¶62. Consider, for example, a sample that captures a transition from a first song to a second song. *Id.* Matching the sample pursuant to paragraph [0072] of Wang777 results in the identification of the two songs in the form of two sample identities, "a first identity of the audio sample" identifying a first time period for the first song (e.g. sample identity [n]), and "a second identity of the audio sample" identifying a second time period for the second song (e.g. sample identity [n+1]). *Id.* Even though the single user sample has two user sample identity values, it is still a **single** user sample, not multiple user samples as alleged by Petitioner. *Id.*

While paragraph [0072] begins by stating "**user samples** can be taken over a longer period of time, e.g., longer than a typical audio program, such as over a transition between audio programs on the same channel," this is not referring to multiple samples being used to determine channel continuity. *Id.* ¶63. This statement

is merely referring to the fact that the system receives audio samples from various listeners, each of which is separately and discretely analyzed (i.e., to identify the specific song that a particular user spontaneously recorded), and that those samples can be longer to capture song transitions. *Id.*, ¶¶64. Further to this point, the remainder of paragraph [0072] makes clear that only a single sample is being used, with multiple identifications being made at different sample time points. *Id.* (citing Ex. 1005 ¶[0072] ("An exception can occur when the user records ***an*** **audio sample** while changing broadcast channels.")). Indeed, it does not make sense for Wang777 to teach that discrete audio samples relied on for the transition-tracking feature are "taken **over a longer period of time**, e.g., longer than a typical audio program," unless the duration of each sample being recorded by each listener is increased (or longer) to ensure that a song transition is captured. Ex. 2001 ¶65 (citing Ex. 1005 ¶[0072]). The listener takes a single audio sample for content identification, and the transition-tracking feature merely identifies song transitions occurring during that sample to provide an increased level of confidence that the prior channel identification was correct and that the listener did not change channels. *Id.*

This reading is only further confirmed by claims 10 and 12 of Wang777. *Id.*, ¶66. Claim 10 corresponds to how Wang777 identifies a channel by comparing an identity of a user's single audio sample to identities from multiple broadcast audio samples. *Id.* (citing Ex. 1005, 8 (p. 14 of PDF). (reciting "comparing an identity of

an audio sample with identities of broadcast audio samples," "comparing a time offset of the audio sample," and "identifying a broadcast channel from which **the audio sample** was recorded)). Claim 12, which depends on claim 10, corresponds to paragraph [0072] and recites: "identifying an identity change **within the audio sample**: and comparing a first identify [sic] **of the audio sample** with identities of the broadcast audio samples, and comparing a second identity **of the audio sample** with identities of the broadcast audio samples." *Id.* Claims 10 and 12 thus confirm that while Wang777 discloses using multiple "identities" from an audio sample, there is still only a single audio sample being used.[4] *Id.*

Wang777's transition-tracking feature thus cannot satisfy the claim language a *play stream of content identification results corresponding to* ***a sequence of data samples*** [i.e., plural], *the data samples comprising representations of audio data captured at* ***a media monitoring device*** [i.e., singular] as required by claims 1, 6, and 10. Rather, it is tracking multiple identifications (n, n+1, n+2, etc.) within an **individual (single) sample** from a media monitoring device to detect a song or program transition. *Id.* ¶67. While the multiple identifications of the single sample are arguably sequential, they cannot be said to be *a sequence of data samples* because

[4] Claim 9 is also directed toward paragraph [0072] and likewise confirms that there is only a single listener audio sample being used. Ex. 2001 ¶56, n.2 (citing Ex. 1005, 8 (p. 14 of PDF)).

they are all taken on the same sample. *Id.*

Although Petitioner proposes combining Wang060 with Wang777 for a "play stream," Petitioner does not specifically address or explain where Wang060 teaches identifying content based on multiple sequential samples (plural) from a monitoring device (singular). In fact, it appears that Petitioner only relies on Wang060 to more generally argue that it would have been obvious to arrange content identification results of Wang777 into a play stream of content identification results. In other words, Petitioner does not contend that it would have been obvious for that play stream to be associated with a sequence of data samples (plural) for a single media monitoring device (singular), which is then used to identify a channel.

Even assuming it was Petitioner's intent to rely on Wang060 for this limitation, Petitioner would still not be able to carry its burden. Just as the Examiner did in her first office action, Petitioner relies on Wang060's list of "candidates for identification with the exogenous sound sample." *Compare* Pet., 50-51 *with* Ex. 1002, 238 (both citing to Ex. 1006 ¶[0081]). However, the Examiner correctly understood that Wang060 does not cure this flaw with Wang777. Ex. 2001 ¶68.

Just like Wang777, Wang060 is focused on identifying content of a single audio sample. *Id.* ¶69 (citing Ex. 1006, Abstract ("A method for recognizing ***an audio sample*** locates an audio file that most closely matches the audio sample from a database indexing a large set of original recordings."), ¶¶[0079]-[0080] ("Using

the master index list generated as described above, sound recognition is performed on an exogenous **sound sample**, typically supplied by a user interested in identifying **the sample**. For example, the user hears a new song on the radio and would like to know the artist and title of the song.")).

This is clearly shown in Figure 1 (reproduced below), and Petitioner acknowledges that individual single samples are analyzed. Pet., 25-26 ("Wang060 is directed to a 'method for recognizing ***an audio sample*** locates an audio file that most closely matches ***the audio sample***") (citing Ex. 1006, Abstract); Ex. 2001 ¶70.

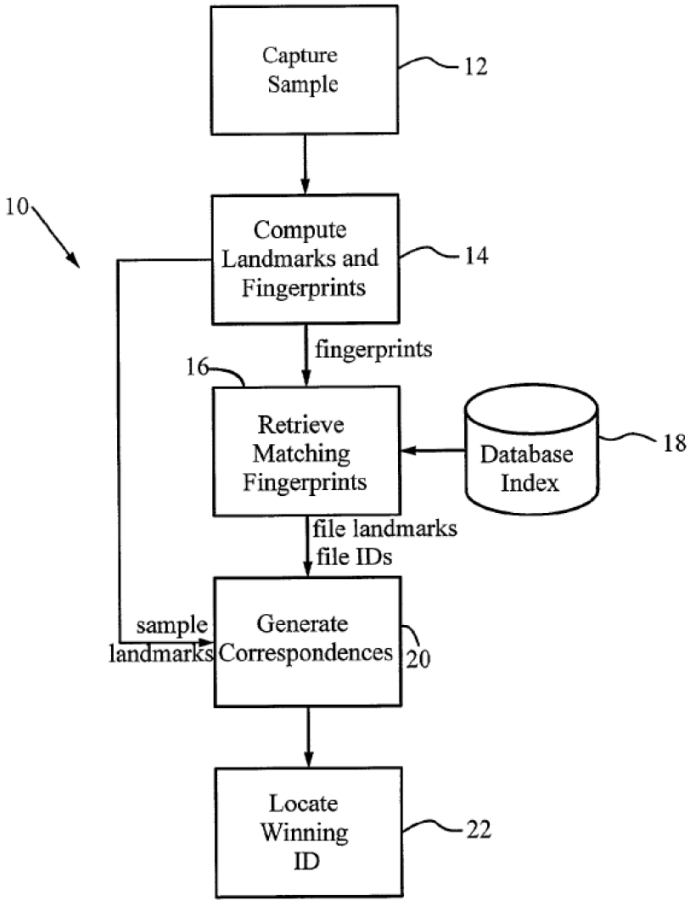
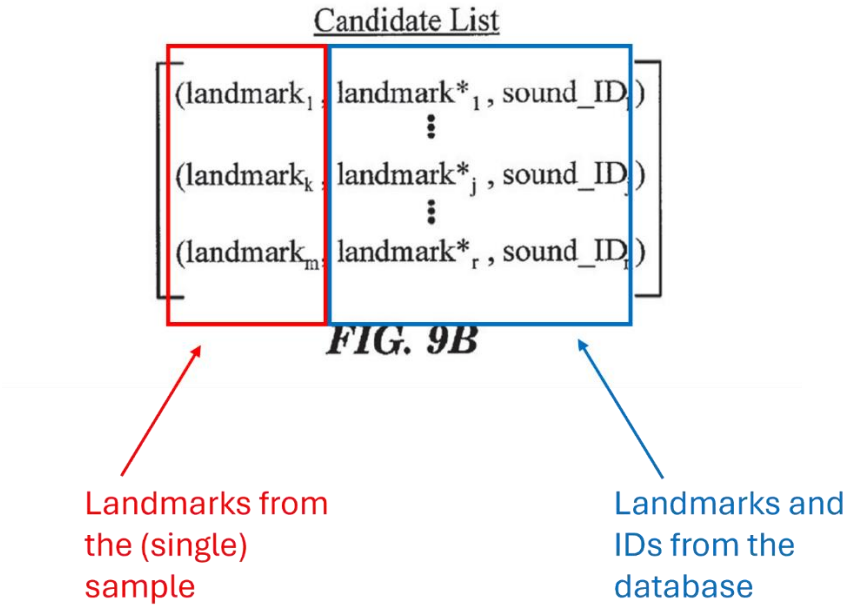


FIG. 1

Petitioner argues that "Wang060 teaches generating a candidate list of the identified **sound samples [plural]** that includes a sound_ID for each match and landmark timepoints," and that this satisfies the *play stream* limitation. Pet., 50-51 (citing Ex. 1006, ¶[0081], Fig. 9B). However, Petitioner's characterization of Wang060 is misleading, because the candidate list is itself based on a single sound sample: "Given the pairs for **the sound sample**, the database index is searched to locate potentially matching files." Ex. 1006 ¶[0081]. In other words, the "candidate list of the identified sound samples" is actually a set of triplets associated with ***a single*** **sample** (not multiple "samples" as Petitioner states), which is used for matching purposes. Ex. 2001 ¶71. The "candidate list" is of "candidates for identification with **the exogenous sound sample**" (singular). Ex. 1006 ¶[0081]. There are no "identified sound samples" (plural) as alleged, as the candidate list itself is generated based on, and for the identification of, a single audio sample. Ex. 2001 ¶71.

Wang060 clearly states "[a]s with the construction of index sets for database files, landmarks and fingerprints are calculated for ***the sample*** using the same algorithm that was used for processing the sound recording database." Ex. 1006 ¶[0080]. As shown below, part of the candidate list is associated with landmarks from a single sample, and the others are associated with landmarks and sound identifiers from a database:



Ex. 2001 ¶72 (citing Ex. 1005, Fig. 9B (annotated)). Thus, the candidate list that Petitioner points to as allegedly depicting multiple sequential audio samples (plural) captured by a media monitoring device is instead multiple match "candidates" associated with an individual audio sample (singular). Wang060 thus analyzes individual user samples, one at a time, to identify content just like Wang777 does. *Id.* Consequently, the combination of Wang777 and Wang060 would not teach this limitation even if combined.

b) The proposed combination of Wang777 and Wang060 was not obvious.

Wang060 does not teach the claimed *play stream* as discussed above, but even if it did there would have been no motivation to combine its purported play stream with Wang777. Petitioner alleges in conclusory fashion that "it would have been

obvious to store the identified samples in a known format such as a play stream for later comparison to the identified broadcast samples." Pet., 50. This vague assertion has no merit.

In Wang777, individual one-off samples are captured by each media monitoring device (e.g., on a mobile phone). Ex. 2001 ¶74 (citing Ex. 1005 ¶[0020]) Petitioner itself acknowledges as much. Pet., 23 ("an audio sampling device 102 (e.g., a mobile phone, blue) used to 'record an audio sample broadcast or transmitted by a broadcaster 104'") (citing Ex. 1005 ¶[0020]). The individual sample is then sent to the Wang777 system for analysis. Ex. 2001 ¶74 (citing Ex. 1005 ¶[0020] ("The user can then cause the audio sampling device 102 to send the audio sample to a sample analyzer 106")). In other words, only a single sample is identified, one at a time, for each media monitoring device—Wang777 does not create *a play stream of content identification results corresponding to a sequence of data samples* (plural), where *the samples compris[e] representations of audio data captured at a media monitoring device* (singular). *Id.*

Wang777 has no reason to analyze sequential audio data samples captured by a user, no matter what format the samples are stored in. *Id.*, ¶75. The design-purpose of Wang777 is to correctly identify an audio sample spontaneously sent by a user and determine the corresponding channel, and then simply move on. *Id.* Petitioner provides no logical basis for why Wang777 would be motivated to perform its

analysis based on multiple sequential audio data samples from a single monitoring device. *Id.*

For that same reason, even if Wang060 could somehow be interpreted to disclose analyzing a play stream including sequential audio data samples (plural) from a media monitoring device (singular) to identify content or channels, Petitioner has provided no motivation or rational for combining such a feature with Wang777. Petitioner's purported justification for this combination amounts to nothing more than conclusory statements, which are merely parroted by Petitioner's proposed expert. *Compare* Pet. 40-42 *with* Ex. 1003 ¶¶108-116. Indeed, Petitioner does not ever argue, or explain why, it would have been obvious to modify Wang777 such that it captures multiple audio data samples recorded by a user and then uses those multiple samples to perform its content or channel identification.

Petitioner also asserts that it "would have thus been obvious to store the content identification results of Wang777 ... in chronological order in a play stream such that each user sample can then be compared to identified broadcast samples having similar timestamps (i.e., in a play stream) in view of Wang060." Pet., 41. But as discussed above, Wang060 does not disclose a play stream based on multiple audio samples of a media monitoring device, which is also missing from Wang777. Even if it did, Petitioner provides no reason or explanation for why a POSA would be motivated to rely on multiple sequential samples (plural) of a media monitoring

device, rather than relying on the single sample actually taught by Wang777. No such motivation exists, because modifying Wang777 in this manner would do nothing to further its stated goal or purpose. Ex. 2001 ¶76. Indeed, Wang777 expressly teaches simply increasing the duration of the single sample as needed, as it makes no sense to require the listener to submit separate samples when the listener is trying to have the content and channel identified on-the-fly. Ex. 1005 ¶[0072]; *see also id.*, Claim 12 ("identifying an identity change within **the audio sample**."); Ex. 2001 ¶76.

2. The Wang References do not disclose or render obvious *utilizing a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples* (Claims [1.3], [6.3], [10.3])

This claim language requires that *a channel corresponding to the data samples* be *identified* based on *a sequential order of at least two different obtained content identifiers* (e.g., song51 and song81) *in the play stream*. Neither Wang Reference discloses this.

The entirety of Petitioner's reliance for this claim limitation is from the same single paragraph [0072] within Wang777, which describes the transition-tracking feature that Petitioner also relies on in contending that Wang777 analyzes a sequence of audio data samples. However, this feature does not identify a channel.

The transition-tracking feature relies on detecting identity changes that occur

during a recorded listener sample to determine whether matching alignment is maintained with a channel that **has already been identified**. Ex. 2001 ¶¶77-78 (citing Ex. 1005 ¶[0072]). Wang777 explains that "to **further verify** that the user is actually listening **to a given** broadcast channel, and that it is not just a coincidence (such as a user taking a recording from a CD player), user samples can be taken over a longer period of time, e.g., longer than a typical audio program, such as over a transition between audio programs on the same channel." Ex. 1005 ¶[0072]. In other words, this feature is only applied **after** a channel has already been identified and only to determine whether a transition in the user sample aligns with a transition in the broadcast sample. Ex. 2001 ¶78.

To fully understand this feature, it is important to first understand how Wang777 **actually** identifies channels. Wang777 teaches:

> **To identify a broadcast source**, the user audio sample and broadcast audio samples are compared to first identify matching sample identities, as shown at block 414, and then to identify matching "relative times" as shown at block 416. If no matches are found, another broadcast channel is selected for comparison, as shown at blocks 418 and 420. If a match is found, the corresponding broadcast information is reported back to the user, as shown at block 422.

Ex. 1005 ¶[0051]. In other words, Wang777 identifies channels by: (1) comparing an identity within a listener's audio sample to identities of a broadcast sample; and (2) identifying matching "relative times," which simply refers to identifying a time

alignment between the sample identities. Ex. 2001 ¶79. Wang777 discloses two equations for identifying a channel:

(User sample identity)=(Broadcast sample identity) Equation (1)

USRTO+(ref. time−UST)=BSRTO+(ref. time−BST)+delay Equation (2)

Ex. 1005 ¶[0052].

The first equation corresponds to matching "identities" as discussed, and the second equation corresponds to matching "relative times." *Id.* ¶¶79-80. It is this combination of both matching identities and matching times that allow Wang777 to identify channels. *Id.* ¶80 (citing Ex. 1005 ¶¶[0052]-[0056] ("A decision is thus made as to whether the user audio sample originated from a given broadcast source by noting whether Equations (1) and (2) hold.")). Wang777 also touts that the "the probability of misidentification is low," because "the probability that a user sample is taken from the wrong broadcast channel or non-monitored audio source (such as a CD player) and happens to satisfy Equations (1) and (2) is fairly small." Ex. 1005 ¶[0055].

Petitioner does not rely on Wang777's actual channel identification to meet the claim limitation. This is because Wang777's channel identification does not rely on a sequential order of at least two different obtained content identifiers as claimed. Instead, Petitioner mischaracterizes Wang777's transition-tracking feature as meeting the claim limitation.

The entirety of Wang777's description of this feature is provided below:

> In another embodiment, to further verify that the user is actually listening to a given broadcast channel, and that it is not just a coincidence (such as a user taking a recording from a CD player), user samples can be taken over a longer period of time, e.g., longer than a typical audio program, such as over a transition between audio programs on the same channel. If a match that is considered to be correct is actually the correct channel, a content alignment should be continuously maintained between song transitions. An exception can occur when the user records an audio sample while changing broadcast channels. However, continuity of identity over a program transition may be an indicator that the correct broadcast channel is being tracked. Thus, sample identity (e.g., Equation (1)) can be tracked, and user sample identity changes can also be tracked. For example, sample identities at multiple time periods can be tracked (as shown below in Equations 3-5), and if a first sample identity does not equal a second sample identity from a second time period (as shown below in Equation 5), then the continuity or transition between songs has been tracked. This can provide further confidence that a correct match has been made (e.g., when both the user and the broadcast sources change synchronously).

Ex. 1005 ¶[0072].

As the paragraph explains, "sample identity (e.g., Equation (1)) can be tracked, and user sample identity changes can also be tracked. For example, sample identities at multiple time periods can be tracked (as shown in Equations 3-5), and

if a first sample identity does not equal a second sample identity from a second time period (as shown below in Equation 5), then the continuity or transition between songs has been tracked." *Id.* Those equations are reproduced below:

User sample identity[n]=Broadcast sample identity[n] Equation (3)

User sample identity[n+1]=Broadcast sample identity[n+1] Equation (4)

User sample identity[n] ≠ User sample identity[n+1] Equation (5)

where [n] is the nth sample in time.

As paragraph [0072] expressly states, these equations are "to **further verify** that the user is actually listening to a **given** broadcast channel." A POSA would understand that the "given broadcast channel" is the channel identified pursuant to earlier equations (1) and (2). Ex. 2001 ¶¶81-83.

Once that channel has been identified, equations (3)–(5) are used to continue tracking the matching alignment of different identities in the listener's audio sample to different identities in the identified broadcast sample. *Id.* ¶84. If that matching alignment is maintained (equations (3) and (4)), and the user sample identities n and n+1 are not the same (equation (5), meaning not the same song) then the system can assume that there was a song transition during the listener's sample. *Id.* If the matching alignment was not maintained, then the system can assume that the listener changed channels. *Id.* In either case, the equations are not "identifying a channel" as claimed, but are merely confirming that the song transition is not the result of a

channel change. *Id.* Indeed, the transition-tracking feature does not rely on the matching of relative times pursuant to equation (2), because channel identification is not occurring in equations (3)-(5)—the channel identification already occurred pursuant to equations (1)-(2). *Id.*

Thus, while this transition-tracking feature does in fact compare different identities (e.g., song51 and song81) in a longer user sample (e.g., a sample long enough to obtain different identities) against different identities (e.g., song51 and song81 over the same period of time) of a broadcast sample(s), it does not do so to *identify a channel*. Rather, the channel was previously identified pursuant to equations (1) and (2) and this feature is simply tracking song transitions to determine whether the listener changed channels. *Id.*, ¶85 (citing Ex. 1005 ¶¶[0051]-[0061] (describing how Wang777 identifies channels)).

Further, Wang777 does not teach or suggest that the channel-continuity feature is capable of identifying the correct channel even if a channel change is detected. *Id.*, ¶86. Instead, Wang777 simply teaches that if matching continuity is not detected (e.g., because a user changed channels while recording the sample), the system can go back and attempt to identify a new channel match using equations (1) and (2). *Id.* (citing Ex. 1005 ¶[0073]). Thus, nothing in Wang777 teaches or suggests that the transition-tracking feature is used to identify a channel, such as by initially determining the matching channel, correcting an initial identification, or selecting a

channel from a candidate list of channels. *Id.* ¶87. In fact, Wang777 itself never refers to this feature as performing "identification" of a channel, in contrast to how it describes "identifying" with respect to broadcast channel source identification. *Compare e.g.*, Ex. 1005 ¶¶[0051]–[0052] (explaining that equations (1) and (2) "identify a broadcast source") *with id.*, ¶[0072]; *Compare also id.*, cl. 10 (referring to "identifying a channel" based on methodology of equations (1) and (2)) *with id.*, cl. 12 (referring to transition-tracking feature as simply "identifying an identity change within the audio sample," not identifying a channel).

This reading of Wang777 is only further confirmed by claims 1, 9, 10 and 12 of Wang777. Ex. 2001 ¶88. Claim 1 recites "**identifying a broadcast station** from which the audio sample was broadcast" consistent with equations (1) and (2). Ex. 1005, 7-8 (pages 13-14 of PDF). And claim 9, from which claim 1 depends, corresponds to equations (3)–(5) from paragraph [0072] and recites "**identifying a content alignment** between the transition within the audio sample and at least one transition within a sample taken from the broadcast stations," not "identifying a broadcast station" as recited in independent claim 1. *Id.*

Likewise, claim 10 corresponds to how equations (1) and (2) in Wang777 identify the channel based on the single listener audio sample. Ex. 2001 ¶89 (citing Ex. 1005 ¶¶[0051]-[0052] (describing channel identification pursuant to equations (1) and (2)); Ex. 1005, 8 (p. 14 of PDF) (claim 10 reciting "based on substantially

matching identities and substantially matching time offsets, **identifying a broadcast channel** from which the audio sample was recorded")). Claim 12, from which claim 10 depends, corresponds to equations (3)–(5) in paragraph [0072] and merely recites detecting an "identity change" within the individual sample—not "identifying a broadcast channel" as recited in claim 10. *Id.* (citing Ex. 1005, 8 (p. 14 of PDF)).

In contrast to Wang777's transition-tracking feature, the '622 Patent uses the difference in content identifiers, and the sequence of what is identified, as a specific mechanism for identifying the channel:

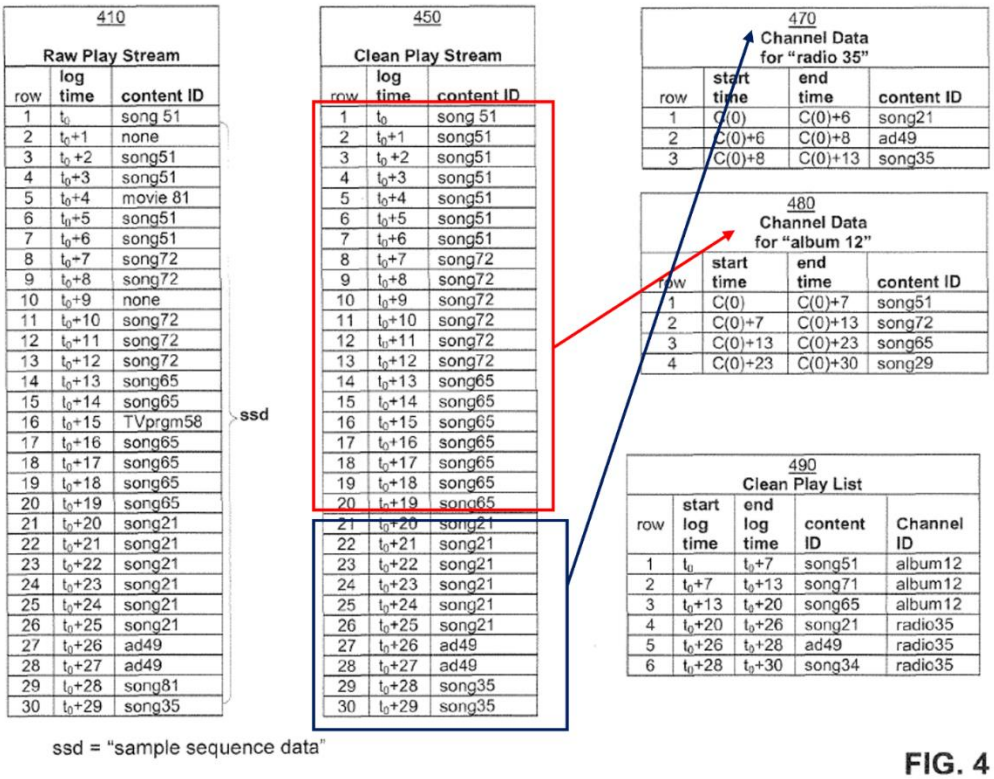


FIG. 4

Ex. 1001, 8:9-22, Fig. 4 (annotated); Ex. 2001 ¶80. The Specification explains that "[i]nformation about the sequence of content in a play stream can be used to generate

a play list and identify a channel." *Id.,* 9:52-53. As seen in Fig. 4 above, "known channel data includes channel data 470, associated with channel ID 'radio 35,' and channel data 480**,** associated with channel ID 'album 12,'" and the comparison of the sequential list of identified pieces of content from the play stream is used to identify the various, multiple channels the listener was listening to during the collection of sequential samples that resulted in the play stream. *Id.,* 9:61-63. This is an example of using the *sequential order of two different obtained content identifiers to identify a channel,* which is something Wang777 does not do. Ex. 2001 ¶¶90-91.

In summary, this claim limitation requires using the *sequential order of two different obtained content identifiers* to *identify a channel*. As described above, Wang777 does not do this. Even though the transition-tracking feature relies on two different content identifiers of the single listener sample, it does so to track a transition occurring during the sample to determine whether the listener changed channels. *Id.* ¶92. The feature does not *identify* the channel—the channel is already known and identified pursuant to equations (1) and (2) of Wang777. *Id.* As the very next paragraph of Wang777 makes clear, the transition-tracking feature makes no further use of the two differing content identifiers once a channel change is detected. *Id.* (citing Ex. 1005 ¶[0073] ("If it is determined that a user has changed channels, the monitoring station 514 **can then search for an identify [sic] match** for the new identity of the audio sample to verify the new broadcast source to which the user is

listening.”)).

B. Ground 2 Does Not Render Any Claim Unpatentable.

Although Ground 2 relies on additional art, that art is only used to address dependent claims. Pet., 3. Ground 2 thus relies solely on the Wang References for the independent claim limitations and fails for the same reasons as Ground 1.

C. Ground 3 Does Not Render Any Claim Unpatentable.

For Ground 3, Petitioner attempts to combine three references, Pitman-Schrempp-Wells. However, there is no rational basis for combining these references as Petitioner proposes. Even if there was, the combination would still not disclose all independent claim limitations.

1. The combination fails to disclose or render obvious *identifying a channel corresponding to the data samples* [Claims 1.3, 6.3, 10.3]

Petitioner argues that Pitman teaches *identifying a channel corresponding to the data samples*. Specifically, Petitioner argues that Pitman not only identifies a song, but also identifies a channel because its system “identifies one or more products relating to the identified content” (e.g., the name of an album containing the song) using a database of known products corresponding to the song. Pet., 89-91 (citing Ex. 1013 ¶¶[0030]-[0031], [0035]).

Pitman does not *identify a channel* as claimed, and Petitioner’s contrary assertion is premised on ignoring other requirements associated with that claim

language—namely that the identified channel *correspond[] to the data samples*. Pitman's correspondence of known products associated with identified content (e.g., a song) is fundamentally different. Ex. 2001 ¶¶93-94.

As Petitioner acknowledges (Pet., 89-90), Pitman merely identifies content (e.g., a song) and then uses a database to identify known products associated with that content, "such as a cassette single of the song, an album containing the song, a music video for the song." Ex. 1013 ¶[0035]. In other words, Pitman already has a database of known products linked to identified content and simply provides the listener with all products ever known to be associated with the identified content. Ex. 2001 ¶95. This provides the listener with as many purchase options as possible for products containing the content that the listener is interested in buying. It does not, however, provide any insights whatsoever into the channel that the listener originally consumed the content on. *Id*. ¶96. Indeed, Pitman does not care what channel the identified content was played on when the listener heard it—it only cares about providing the listener with all products associated with the identified content so that the listener has as many purchase options as possible as a way to listen to the song again. *Id.* This forward-looking approach of where the user **could** listen to the song, rather than a backward-looking approach of where they **did** listen to the song, is exemplified by the lack of any broadcast channels in the list developed by Pitman. A historic list of songs played by a broadcast channel does not further the goal of

Pitman to provide a way for the user to buy a product to listen to the song again. *Id.* ¶97.

Even if Pitman's identification of various products containing the song (e.g., an album) could be considered *identify[ing] a channel* as claimed, those purported channels do not *correspond to* the captured data samples that the song identification was based on. *Id.*, ¶98. Indeed, the system of Pitman has no way of identifying the channel that the underlying content was played on, but instead merely provides a list of all known products that would allow the song to be played again in the future. As Petitioner later admits in its obviousness arguments, Pitman is "not [] able to identify the album that the user ***is actually listening to***." Pet., 93. Pitman thus does not teach or suggest this claim limitation.

2. The combination fails to disclose or render obvious *using one or more computers to utilize a sequential order of at least two different obtained content identifiers in the play stream to identify a channel corresponding to the data samples* where the content identifiers *identify different media content items* [Claims 1.3-4, 6.3-4, 10.3-4]

Even if Pitman could be said to *identify a channel* based on its association of known products with an identified song, Petitioner concedes that Pitman does not use *a sequential order of at least two different obtained content identifiers in the play stream*, where the *content identifiers identify different media content items*, to identify the associated products. Pet., 91. Petitioner relies on Wells to attempt to plug

this hole, arguing that Wells requires consecutive candidate fingerprint matches with a song before it identifies the unknown content as being that song. *Id.* (citing Ex. 1015 ¶¶[0259]-[0264]). Petitioner then jumps to the unsubstantiated conclusion that this would somehow make it obvious to modify Pitman to use different obtained content identifiers **to identify a channel** that the captured audio samples are being played on. *Id.*, 91-93.

Even if it were obvious to combine Pitman and Wells (it was not, as later explained), at most that would mean that Pitman's content identification (e.g., song identification) could rely on consecutive fingerprint matches before matching the content to a particular song. Ex. 2001 ¶¶100-101. Such a modification would have no relevance or effect on the way in which Pitman identifies known products associated with the song. *Id.* ¶101. Even in the proposed combination, Pitman would be relying on consecutive fingerprint matches to identify a song (as taught by Wells), while still relying on the same database of known content to provide the user with associated products for purchase (as taught in Pitman). *Id.* Thus, the purported "channel identification" of Pitman would still not rely on multiple different content identifiers to identify a channel, even if modified based on Wells. *Id.*

Moreover, the claim plainly requires that the channel identification is based on *two **different** obtained content identifiers* that *identify different media content items*. Wells cannot plausibly teach or suggest this, because Wells' consecutive

fingerprint matching feature is premised on consecutively matching to the **same** song. *Id.* ¶102. In other words, in a sense Wells does the opposite of what this claim limitation requires—the claim requires using ***different*** obtained content identifiers (e.g., song51 and song81) to identify a channel, whereas Wells requires using the **same** content identifier (e.g., song 51) obtained consecutively to identify a song. *Id.* (citing Ex. 1015 ¶[0264] ("For example, a match is recorded if P consecutive candidate fingerprints match the same song in the database.")).

The reason for this distinction is apparent—the '622 Patent relies on analyzing a sequence of different identified content (e.g., different songs) because those differences can be used to help identify a channel by analyzing the sequence of different content within the channel. Ex. 2001 ¶103. In contrast, Wells relies on consecutive fingerprint matches to the same content for purposes of identifying that content. *Id.* Consequently, even if there was a motivation to rely on Wells consecutive fingerprint matching feature with Pitman (for the fundamentally different purpose of identifying channels rather than identifying underlying content), the combination still would not teach or suggest this claim feature. *Id*.

Ultimately, none of Pitman, Schrempp,[5] or Wells (either alone or in combination) teach or suggest *identifying a channel* based on *a sequential order of*

[5] Schrempp is only being relied on by Petitioner for the missing *play stream* limitation, not the channel identification required by the claims. Pet., 86-88.

at least two different obtained content identifiers in the play stream, the at least two different obtained content identifiers identifying different media content items. *Id.* ¶104. Recognizing this, Petitioner offers two hindsight-based obviousness arguments to conjure this claim feature out of thin air.

First, Petitioner concludes its analysis of Claims 1.3, 6.3, and 10.3 with a hodgepodge discussion of random teachings from Pitman, Schrempp, and Wells, followed by the hindsight-based theory:

> It would have thus been obvious to a POSA to use the identification of two (or more) sequential songs from the stored record of song titles to determine whether those songs correspond to a particular album or movie in the Pitman-Schrempp-Wells combination. Otherwise, if a song appears on multiple albums and in multiple movies, the system would not be able to identify the album that the user is actually listening to but instead could only provide every possible album or movie to the user for purchase; potentially frustrating the user and leading them to not purchase a product.

Pet., 92-93. In other words, despite none of the relied-on references actually disclosing channel identification as claimed, Petitioner argues that this feature would have been obvious based on Wells' teaching of identifying a song based on consecutive fingerprint matches to the song.

This argument amounts to nothing more than hindsight bias to try and account for a missing claim limitation. None of the relied-on references discuss or describe

identifying a channel using **two different content identifiers**. Ex. 2001 ¶106. In fact, Petitioner fails to even show that the references have the means to identify a channel based on an analysis of different songs. *Id.* Nor do these references even suggest that such a feature would provide any benefit to their systems, all of which are focused on simply identifying the underlying content (e.g., song). *Id.* Petitioner simply pieces together three discrete pieces of prior art, picks and chooses the features that suit its desire to invalidate the patent, and then modifies those features **in a way not taught or suggested by any of those references themselves**.

Petitioner fails to point to any evidence other than the conclusory, *verbatim* parroting of its expert to support this hindsight-based theory. *Compare* Pet., 91-93 *with* Ex. 1003 ¶¶234-237. For example, aside from its expert's testimony, Petitioner does not identify any evidence supporting the notion that a POSA would have understood Pitman's system to "potentially frustrat[e] the user and lead[] them to not purchase a product." Pet., 93. Petitioner's motivation is thus "untethered from underlying facts or data in evidence, including the disclosure of [Pitman, Schrempp, and Wells]." *Arris Solutions, Inc. v. Realtime Adaptive Streaming LLC*, Case IPR2019-01586, Paper No. 7 at 25-26 (PTAB Mar. 16, 2020) (rejecting obvious analysis by finding the expert's "unsubstantiated testimony" to be "at best, mere speculation"); *see also* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little

or no weight.").

Further, Petitioner's purported "motivation" is illogical in light of the expressly stated purpose of Pitman. Ex. 2001 ¶107. Petitioner criticizes Pitman as "potentially frustrating the user and leading them to not purchase a product" because Pitman provides "every possible album or movie to the user for purchase." Pet., 93. But providing "every possible album or movie to the user for purchase" is **a specific, intended feature of Pitman**—it is not a drawback. Ex. 2001 ¶107. Pitman is directed toward a system for "selling products" (e.g., albums, movies, etc.) by providing a user with all products associated with a particular identified content (e.g., song). Ex. 1013, Abstract, ¶¶[0020], [0030], [0035]. Pitman is thus focused on providing the listener with as many purchase options as possible—it is not concerned with identifying the particular channel that the user was listening to.[6] Ex. 2001 ¶107.

The motivation is illogical for at least one additional reason. Petitioner ignores that Pitman is focused on identifying discrete, individual pieces of content (e.g., a song), which means there is simply no motivation to analyze sequential songs. *Id.*,

[6] Petitioner provides no logical explanation as to why the listener in Pitman would even need to be told the channel he or she is listening to. Presumably the listener knows the identity of the source of the consumed media content—what is unknown to the listener of Pitman is the identity of that content and the identity of products (e.g., albums, movies) containing that content. Ex. 2001 ¶97, n.3.

¶108. Petitioner fails to identify any aspect of Pitman that teaches or suggests using multiple pieces of content played sequentially to identify a channel, because it would make no sense to do so in Pitman given its focus on identifying the discrete piece of content, and then simply relying on the database of known product information to provide associated products to the user. *Id.*

Apparently recognizing this fundamental flaw in its reasoning, Petitioner suggests that Pitman teaches a user submitting multiple sequential songs in its system. Pet., 92 (citing Ex. 1013 ¶¶[0030]-[0031]). However, the portion cited by Petitioner merely states that all songs on an album or in a movie may be **registered in the audio content database** for presentation to a user for sale. Ex. 1013 ¶¶[0030]-[0031]. In other words, nothing in the cited passage suggests that the user is submitting multiple sequential songs to be analyzed together—the user is simply submitting a single piece of content for identification and then the system provides all known products associated with that content based on the content **already registered in the database**. Ex. 2001 ¶109. Consequently, the system of Pitman does not rely on sequential songs to identify content—the system is only designed to identify a single piece of content at a time and provide the user with all known products associated with that content. *Id.*

Petitioner's second hindsight-based theory is:

Based on the teachings of Wells, a POSA would have been motivated

> to modify Pitman-Schrempp to incorporate Wells' teaching of identifying a song when multiple sequential song segments correspond to the same song and **also identifying an album or movie when multiple sequential songs match the album or movie**. Doing so would have reduced the possibility of an incorrect song identification, and by extension an incorrect album (or movie in which the songs appears), as taught by Wells. Modifying Pitman-Schrempp to incorporate Wells' teaching would have required minor modifications (e.g., modifying Pitman's software).

Pet., 79-80. However, Wells does not teach or suggest using multiple sequential song matches **to identify an album or movie**. Ex. 2001 ¶111. As Petitioner admits, "Wells teaches that **the song is identified** (1607) only if P (e.g., 10) 'consecutive candidate fingerprints match **with the same song** in the DB' to reduce the possibility of a mismatch." Pet., 78 (citing Ex. 1015 ¶[0264]). In other words, Wells merely teaches identifying an individual song using consecutive fingerprints that match the song. Ex. 2001 ¶111. Nothing in Wells teaches or suggests using sequential song matches to identify a movie or album (or any other alleged channel for that matter). *Id.*

Even beyond the fact that Wells does not teach this feature, Petitioner's additional arguments here are nonsensical. For example, Petitioner does not explain how relying on the identification of sequential songs to identify an album would somehow "reduce the possibility of an incorrect song identification." Pet., 79-80.

Wells already reduces that possibility by using consecutive fingerprint matches to the same song before making the identification. Ex. 2001 ¶112.

With respect to purportedly reducing the likelihood of an "incorrect album" identification (Pet., 79), Pitman is not concerned with identifying the channel that the listener consumed the content over. Ex. 2001 ¶113. Instead, Pitman only cares about providing a list of **all** products (e.g., albums, movies, etc.) that the song exists on, which provides the user all potential options for purchasing the identified content. *Id.* There was thus no concern with "incorrect album" identification, because Pitman already wants to provide a listing of **all** albums associated with a song, allowing the user to select which of those albums he or she wants to purchase. *Id*.

Petitioner also glosses over the major changes to Pitman that would be required to impart the channel identification that Petitioner pretends exists in Wells. *Id.* ¶114. Petitioner contends that this would have "required minor modifications (e.g., modifying Pitman's software)" (Pet., 79-80) but completely ignores that a fundamental premise of Pitman's operation is that a user is attempting to identify a single, discrete piece of content (e.g., a single song). To modify Pitman to rely on the imaginary channel identification of Wells would require the user to record multiple pieces of content over a much longer period of time (e.g., multiple songs played within a multi-hour movie), increasing the burden to the user to submit the

content. Ex. 2001 ¶114. Thus, not only is Petitioner proposing a solution not even disclosed in Wells, Petitioner is proposing a solution to a problem that does not exist in Pitman and in fact would hinder its simplicity and ease of use for its stated purpose. *Id.*

Petitioner is also wrong that modifying Pitman to perform channel identification as claimed "would have required minor modifications (e.g., modifying Pitman's software)." Pet., 80. As Pitman teaches, "the listener supplies an audio content image to a retailer's audio identification system," which then "analyzes the audio content image that was supplied in step 304 using an algorithm that generates audio content identifying information like the information stored in the audio content database" Ex. 1013 ¶¶[0032]-[0033]. For Pitman to identify a channel based on sequentially identified songs from which the listener obtained the sample (as Petitioner proposes), the audio content database would have to include each and every song from each and every album, movie, etc. the listener could have potentially taken their sample from (including all sources of the song the Pitman system does **not** have available to sell to the listener) in sequential order to perform the proposed channel identification. Ex. 2001 ¶115.

For example, for Pitman to be able to identify the specific radio station from which a listener consumed the submitted content using multiple content identifiers (as proposed by Petitioner), it would have to somehow already have stored in the

database the **sequence of content played on all radio stations** to perform channel identification. *Id.* ¶116. This would require the database to be exponentially larger and require significantly more processing power to analyze multiple sequential songs (rather than only a single song) against the much larger database of content containing sequences of content from countless sources. *Id.* Given that nothing in Pitman even suggests that it is concerned with or wants to identify channels that the listener's submitted images were consumed on, there would have been no motivation to make such a fundamental modification. *Id.*

Although Petitioner does not contend it is relying on "common sense" for this limitation, even if it had, "common sense is typically invoked to provide a known motivation to combine, **not to supply a missing claim limitation**." *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016) (emphasis in original). Indeed, common sense "cannot be used as a wholesale substitute for reasoned analysis or evidentiary support" and "a reasoned basis for resort to common sense must be searching" when being used to supply a missing limitation. *Id.* at 1362-63. In stark contrast here, Petitioner fails to identify even a single prior art reference that discloses the claimed channel identification, and offers wholly conclusory, hindsight-based rationales that lack any basis in the prior art itself. Consequently, the prior art (individually and collectively) fails to teach or suggest this claim limitation, and Petitioner has failed to carry its burden of demonstrating obviousness

in Ground 3.[7]

3. The combination fails to disclose or render obvious *a play stream of content identification results* as claimed [Claims 1.3, 6.3, 10.3]

Petitioner admits that Pitman does not disclose *a play stream of content identification results corresponding to a sequence of data samples*. Pet., 74, 86-87 (acknowledging that "Pitman is silent on the format" of its alleged content identification results). Petitioner argues, however, that it would have been obvious to modify Pitman to rely on the claimed *play stream* based on Schrempp. Pet., 74-76, 86-88. Petitioner fails to demonstrate obviousness for at least two reasons.

a) Petitioner fails to provide an articulated reason explaining why the combination was allegedly obvious

Petitioner does not provide even a single articulated reason explaining **why** a POSA would be motivated to modify Pitman to rely on a play stream. Instead, as further explained, Petitioner relies on a series of statements that collectively amount to nothing more than a general statement that the use of play streams was known—but there is no articulated reason for why it would have been obvious to modify

[7] Petitioner's other obviousness arguments relating to the Pitman-Schrempp-Wells combination do not address the fact that the combination itself fails to disclose this claim limitation. *See generally* Pet., 73-80. Consequently, even if the Board accepts all of Petitioner's other obviousness assertions as true, they fail to address this fundamental defect with the combination.

Pitman to rely on such play streams. *See Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 886 (Fed. Cir. 2024) ("It does not suffice to meet the motivation to combine requirement to recognize that two alternative arrangements … were both known in the art."); *See also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.") (Emphasis in original).

Petitioner first argues that "POSA, however, would have known that this information could have been presented in any number of formats and would have looked to prior art, such as Schrempp, which discloses as much." Pet., 74. But the fact that Pitman's information "could have been" presented in any number of formats and that other formats were known does not amount to a **motivation** to modify Pitman as proposed. Ex. 2001 ¶118.

Petitioner next provides a high-level description of Schrempp and then states, in purely conclusory fashion, "[b]ased on the teachings of Schrempp, **it would have been obvious** to a POSA to arrange the identified songs in Pitman in a play stream of content identification results corresponding to a sequence of data samples." Pet., 76. Again, however, the Petition fails to provide an actual reason or motivation for modifying Pitman to rely on a play stream. Ex. 2001 ¶119. Indeed, Petitioner here

simply describes what Schrempp teaches and then alleges—with no explanation at all—that it would have been obvious to incorporate a play stream into Pitman.

The remainder of Petitioner's obviousness arguments fair no better. Petitioner argues "[m]odifying Pitman to incorporate Schrempp's teaching would have required minor modifications (e.g., modifying Pitman's software)." Pet., 76. But this merely goes toward showing a reasonable expectation of success, which is an independent element of proving obviousness from motivation to combine. *See Axonics, Inc. Medtronic, Inc*., IPR2020-00715, Paper 65, 42 (PTAB Sept. 13, 2021) (explaining that "motivation to combine and reasonable expectation of success … are distinct inquiries" and what proving each entails).

Petitioner contends that "[a] POSA would have been further motivated to combine Pitman and Schrempp because both are in the same field of content identification." Pet., 76. But the fact that Pitman and Schrempp may be from the same field of endeavor does not mean or demonstrate that it was obvious to combine them. Indeed, under such an obviousness standard it would be obvious to combine virtually any two pieces of analogous prior art.

Petitioner next argues "a POSA would have combined the teachings of Pitman and Schrempp by known methods, and the result of the combination would have been predictable to a POSA (e.g., generating a play stream of the identified content)." Pet., 76. This is yet another conclusory statement that fails to provide the

"why" of the proposed combination. Even if it is assumed that a POSA would have known how to combine them and the results of the combination were predictable, Petitioner does not explain **why** a POSA "would have combined" as alleged.

Petitioner's final obviousness argument for Pitman-Schrempp is that "[t]he proposed combination would have involved nothing more than incorporating a well-known concept (e.g., play streams) into a well-known system (e.g., Pitman)." *Id.* Again, however, even if the proposed combination was nothing more than the combination of a "well-known concept" into a "well-known system," that does not provide a motivation to combine them together.

While Petitioner briefly discusses the alleged obviousness of Pitman-Schrempp in its claim-by-claim analysis, Petitioner refers back to the same defective obviousness arguments addressed above. Pet., 86-88. And although Petitioner relies on its expert, he simply parrots back these same conclusory obviousness arguments. *Compare* Pet. 74-76 *with* Ex. 1003 ¶¶205-210; *Compare* Pet. 86-88 *with* Ex. 1003 ¶¶226-228. Thus, even if his testimony was entitled to any weight, it would not cure the fundamental flaw in Petitioner's obviousness assertion. *Apple Inc. v. MPH Techs. Oy*, 28 F.4th 254, 263 (Fed. Cir. 2022) (affirming Board decision that testimony of petitioner's expert "amounted to an argument about 'what *could* be combined' and a conclusory statement that the combination would have been obvious") (emphasis in original); *See Xerox Corp. v. Bytemark, Inc.*, IPR2022-

00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential) (holding declaration is entitled to little weight when it contains an exact restatement of the petition's unsupported, conclusory assertions without any additional supporting evidence or reasoning).

b) The proposed combination is illogical

Petitioner fails to provide a motivation to combine a play stream with Pitman because no motivation exists based on Pitman-Schrempp-Wells. Ex. 2001 ¶120. As Petitioner acknowledges, Pitman is directed toward identifying content (e.g., a song) for a user and providing that user with products containing the identified content (e.g., an album) to the user. Pet., 36. For example, in Pitman a user may hear a song that he or she likes but does not know the identity of, in which case the user can submit a sample of the song to identify it and any products associated with the song. Ex. 2001 ¶110 (citing Ex. 1013 ¶¶[0032], [0035]).

Schrempp, on the other hand, is directed toward monitoring broadcast content (e.g., a radio broadcast), identifying all content played by the broadcast, and "keep[ing] a record of all matches made" and generating a play list. Pet., 37-38. Schrempp explains "a playlist is the documentation of the performance of one or more works at a particular time over a particular medium," and that playlists may need to be generated for artists to "verify royalty payments." Ex. 1014 ¶[0005]-[0006]. Pitman is thus directed towards analyzing individual, one-off samples

provided by a user while Schrempp is directed towards monitoring **all** broadcast content being played over a radio station to generate a playlist. Ex. 2001 ¶121.

Given the disparate purpose and design of Pitman as compared to Schrempp, there was no reason or motivation to modify Pitman to include a play stream. *Id.* ¶122. To the extent Schrempp relies on a play stream at all, it is only because it is creating a playlist of all content being played on a particular broadcast station. Pitman, however, only analyzes unknown one-off samples provided by a user to identify content. Pitman thus has no reason to generate a play stream. *Id.*

V. CONCLUSION

For the reasons above, Patent Owner respectfully requests that the Board deny institution.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e)(4), the undersigned certifies that on November 14, 2024, a copy of the foregoing document (*Patent Owner's Preliminary Response*, including all Exhibits), was served via electronic mail on the following attorneys of record at the indicated e-mail address(es):

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this document complies with the type-volume limitations set forth in 37 C.F.R. § 42.24 *et seq.* This document, excluding those portions excluded pursuant to § 42.24(a)(1), contains 12,678 words as calculated by the "Word Count" feature of Microsoft Word for Office 365, the program used in creating it.

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