

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU, INC.,
Petitioner

v.

ANONYMOUS MEDIA RESERACH HOLDINGS, LLC
Patent Owner

Case IPR2024-01054
U.S. Patent 8,510,768

PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
2001	Expert Declaration of Leo W. Hoarty
2002	<i>Curriculum Vitae</i> of Leo W. Hoarty
2003	Notice of Intent to Issue <i>Ex Parte</i> Reexamination Certificate in Control No. 90/019,375 (Oct. 30, 2024)
2004	PCT Publication WO 2004/030341
2005	PCT Publication WO 2004/044820
2006	PCT Publication WO 2004/040475
2007	MICROSOFT PRESS COMPUTER DICTIONARY (3rd Ed. 1997) (excerpts from)
2008	Hyoung-Gook Kim et al., MPEG-7 AUDIO AND BEYOND, AUDIO CONTENT INDEXING AND RETRIEVAL (2005) (excerpts from)
2009	U.S. Patent No. 7,907,211
2010	Joshua Grossnickle et al. THE HANDBOOK OF ONLINE MARKETING RESEARCH (2001)
2011	Roku, Inc.'s Identification of Proposed Terms for Construction in <i>Anonymous Media Research Holdings, LLC v. Roku, Inc.</i> , Case No. 1:23-cv-01143-DII (served July 3, 2024)

I. INTRODUCTION

The Board should deny institution because Petitioner fails to demonstrate a reasonable likelihood that at least one claim is unpatentable. There are at least three independent reasons for doing so.

First, Petitioner has not carried its burden of demonstrating that Seet qualifies as prior art. *Infra* Section III. Petitioner contends that Seet is prior art under pre-AIA 35 U.S.C. § 102(e) because it is allegedly entitled to the benefit of the filing date of the Seet Provisional pursuant to *Dynamic Drinkware*. However, for Seet to be entitled to that filing date Petitioner must demonstrate that the Seet Provisional provides written description support—in full compliance with 35 U.S.C. § 112, ¶ 1—for at least one claim of Seet. Because the Petition fails to make this showing, Seet has not been shown to be prior art. Given that Seet is the sole reference relied on for the *scrubbing* required by all claims, Petitioner cannot carry its burden under any ground.

Second, the Petition fails to show that Herley682—the primary reference relied in all grounds for most independent claim limitations—discloses several of those limitations. *Infra* Section IV. The defects in Petitioner’s application of Herley682 to the challenged claims stem from the fact that Herley682 is directed toward a fundamentally different type of content identification system than the claimed invention. Herley682 discloses a broadcast-channel-centric system that

simply reports what is being played by a broadcast—where a broadcast signal (e.g., FM radio broadcast) from a broadcast channel (e.g., radio station) are received (e.g., via a radio receiver) so that the content being played by that station can be identified. The '768 Patent explicitly criticizes such systems as “inadequate for many purposes” and addresses this problem using media monitoring devices to track the media consumption of audience members. In other words, the claimed invention is able to discern the media that audience members are consuming, whereas Herley682’s broadcast-channel-centric system merely identifies the content being broadcast over a broadcast channel.

Third, Petitioner fails to demonstrate that it would have been obvious to combine the alleged *scrubbing* of Seet with the system of Herley682. *Infra* Section V. Although Herley682 and Seet are both broadcast-channel-centric systems, Petitioner overlooks or disregards the fundamentally different purpose and operation of those two references. When properly considered, a person having ordinary skill in the art would have had no motivation to modify Herley682 to rely on the alleged *scrubbing* of Seet. Because Seet is the only reference relied on for the *scrubbing* recited in each independent claim, Petitioner cannot meet its burden on any ground.

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., 2; Ex. 2001 ¶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 ¶¶2-13; Ex. 2002. He qualifies as a POSA under any reasonable proposed definition based on his industry experience, notwithstanding him having no formal degree. Ex. 2001 ¶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 ’768 Patent. Indeed, 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. 10,719,848—the “video data sample” counterpart to the ’768 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.

In contrast, Petitioner provides no evidence that its proposed expert, Dr. Russ, has any industry experience with media content identification or recognition, including audio sampling, signature or fingerprint generation, or recognition of audio sample content. Dr. Russ discusses his experience: (1) managing a cable set-top box design group; (2) acting as “a staff expert in home networking;” (3) managing a hardware design team that completed the design of a payment terminal; (4) teaching circuit board design and two-way interactive video classes; and (5) authoring articles and conference papers “on digital video recording.” Ex. 1003 ¶¶6-15; Ex. 1004. However, none of this experience appears to relate to or involve the recognition of media content. Indeed, it appears that Petitioner broadly proposes “digital media content **delivery**”² (rather than “digital media content **recognition**”) as the relevant industry experience precisely because Dr. Russ has no experience in the relevant field. His lack of experience in the relevant field is particularly salient with respect to Petitioner’s application of the claim limitations to the “audio samples” and audio “fingerprints” of Herley682, which Petitioner and Dr. Russ

² All emphasis herein is added unless otherwise indicated.

fundamentally mischaracterize and misunderstand from a technical perspective.

Infra Section IV.B.1.

III. ALL GROUNDS FAIL BECAUSE PETITIONER HAS NOT DEMONSTRATED THAT SEET IS PRIOR ART

All grounds rely solely on Seet for the “scrubbing” recited by independent claims 1 and 9. Thus, if Seet does not qualify as prior art, Petitioner cannot carry its burden of demonstrating a reasonable likelihood of unpatentability as to any claim.

Petitioner contends that Seet is “prior art under 35 U.S.C. § 102(e) (pre-AIA) as of February 17, 2004 *because* it is entitled to its provisional date for prior art purposes.” Pet., 2. Petitioner has not alleged here that Seet constitutes prior art as of its February 17, 2005 non-provisional filing date, despite asserting that as an alternative in related IPR proceedings. *See Roku, Inc. v. Anonymous Media Research Holdings LLC*, IPR2024-01055, Paper 2, 2 (PTAB July 17, 2024) (“Alternatively, Seet is prior art under 35 U.S.C. § 102(e) (pre-AIA) as of February 17, 2005....”); *Roku, Inc. v. Anonymous Media Research Holdings LLC*, IPR2024-01058, Paper 2, 2 (PTAB July 17, 2024) (same contentions with respect to challenged U.S. Patent No. 10,719,849).

Petitioner also does not contend or even suggest that the claims of the ’768 Patent are not entitled to the May 27, 2004 filing date of Provisional Application No. 60/574,836 (“the ’836 Application”), though Petitioner has made that contention

against family member patents challenged in other IPR proceedings. *See Roku*, IPR2024-01055, Paper 2 at 1-3, 17-20 (contending that “the earliest effective priority date of [challenged U.S. Patent No. 8,756,622] is May 26, 2005 because **the ’622 patent is not entitled to priority to the ’836 Application**” and explaining the alleged basis for that contention); *Roku*, IPR2024-01058, Paper 2 at 1-2, 16-18 (same contentions with respect to challenged U.S. Patent No. 10,719,849); *Roku, Inc. v. Anonymous Media Research Holdings LLC*, IPR2024-01053, Paper 1, 7-8, 20-22 (PTAB July 15, 2024) (same contention with respect to U.S. Patent No. 8,296,791); *Roku, Inc. v. Anonymous Media Research Holdings LLC*, IPR2024-01056, Paper 1, 1-2, 15-17 (P.T.A.B. July 15, 2024) (same contention with respect to U.S. Patent No. 10,572,896). In fact, Petitioner states that “it reserves the right to challenge the priority date **in other proceedings**,” making it clear Petitioner does not dispute the ’768 Patent claims’ entitlement to the filing date of the ’836 Application in this proceeding. Pet., 1, n.1.

In light of the above, the sole basis for asserting Seet as prior art in the Petition is “because” it is allegedly entitled to its provisional filing date. The burden of production has thus shifted to Patent Owner to demonstrate that Seet is not entitled to its provisional filing date. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378-80 (Fed. Cir. 2015) (discussing two distinct burdens of proof—burden of persuasion and burden of production); *Ariosa Diagnostics, Inc. v.*

Illumina, Inc., IPR2014-01093, Paper 69, 11-14 (PTAB. Jan. 7, 2016) (determining that, pursuant to *Dynamic Drinkware*, the burden of production to demonstrate that the challenged patent was entitled to its earliest effective filing date did not shift to patent owner because the petitioner never alleged that the challenged patent was not entitled to its earliest effective filing date, and nothing in the petition put the patent owner on notice that petitioner was disputing the challenged patent's entitlement to the earlier filing date).³

As explained in Section III.A below, Seet is not entitled to its provisional filing date and thus is not prior art. Even if it were, as further explained in Section III.B, the Petition fails to adequately show where each relied-on portion of Seet is supported by the Seet Provisional.

A. The Petition Fails to Demonstrate that the Seet Provisional Provides Written Description Support for Claim 9 of Seet.

The burden is on Petitioner to prove that Seet is prior art based on its entitlement to the Seet Provisional's filing date. *Dynamic Drinkware*, 800 F.3d at

³ Given that Petitioner never alleged in this proceeding that the '768 Patent claims are not entitled to the filing date of the '836 Application or that Seet is prior art as of its non-provisional filing date, Patent Owner is not required to demonstrate entitlement to the provisional filing date. To the extent trial is instituted, Patent Owner will demonstrate that all elements of the challenged claims are clearly supported by the provisional.

1378.⁴ “For a patent to claim priority from the filing date of its provisional application, it must satisfy 35 U.S.C. § 119(e)(1) (2006).” *Id.* “In other words, the specification of the *provisional* must ‘contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms,’ 35 U.S.C. § 112 ¶ 1, to enable an ordinarily skilled artisan to practice the invention claimed in the *non-provisional* application.” *Id.* (quoting *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294 (Fed. Cir. 2002)) (emphases in original). “A reference patent is only entitled to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for the claims in the reference patent **in compliance with § 112, ¶ 1.**” *Id.* at 1382. And to comply with that paragraph, “the written description must lead a person of ordinary skill in the art to understand that the inventors possessed ***the entire scope*** of the claimed invention.” *Juno Therapeutics, Inc. v. Kite Pharma, Inc.*, 10 F.4th

⁴ On November 15, 2023, the Board designated as precedential a final written decision determining that the requirement in *Dynamic Drinkware*—that under pre-AIA 35 U.S.C. § 102(e), a reference patent’s claims must have written description support in its provisional application in order to be entitled to the filing date of the provisional application—does not apply to AIA 35 U.S.C. § 102(d). *See Penumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 34, 29-35 (March 10, 2023) (precedential as to § II.E.3). However, the both ’768 Patent and Seet are pre-AIA. Thus, *Dynamic Drinkware* applies.

1330, 1337 (Fed. Cir. 2021).

Petitioner argues that Seet is entitled to priority to the Seet Provisional because the provisional allegedly provides written description support under § 112, ¶ 1 for independent claim 9 of Seet. However, the Seet Provisional clearly fails to provide written description support for **the full scope** of claim 9 as required by *Dynamic Drinkware*. The Seet Provisional only discloses matching **audio** streams, whereas Seet discloses matching audio and **video** streams and claim 9 of Seet broadly claims matching both audio and **video** streams. Ex. 2001 ¶54. More specifically, claim 9 of Seet (reproduced below) claims matching portions of “media streams,” which encompasses both audio and video streams as expressly disclosed in the specification of Seet:

9. A method for generating entries for a media content database, the method comprising:

receiving a first **media** stream;

receiving a second **media** stream;

matching at least some portions of the second media stream to the first media stream to determine repeating content between the streams; and

presenting the repeating content to a reviewer for identification.

Ex. 1006, 6 (p. 9 of PDF). However, for claim 9 to be fully supported by the Seet Provisional, its claims should have been limited to matching portions of a “first **audio** stream” and “second audio **stream.**” By more broadly claiming “media

stream” matching, Seet claims embodiments that were not disclosed or suggested by the Seet Provisional, but instead were only first disclosed in the specification of Seet. Ex. 2001 ¶¶53-55. Stated another way, Seet claims a broad genus (“media stream” matching) and discloses two species of that genus in its specification (“audio stream” and “video stream” matching), but the Seet Provisional only demonstrates the inventor’s possession of one of those species (the “audio stream” species). *See Juno Therapeutics*, 10 F.4th at 1338. Consequently, the Seet Provisional does not provide written description support for the full scope of claim 9 in compliance with § 112, ¶ 1, namely the scope covering “video stream” matching.

Turning first to the Seet Provisional, it never mentions or discusses using video data from its media streams to match content. Indeed, the only reference to “video” at all is the statement: “Instead of using a high-quality original master recording (say a CD, or digital video tape, etc), we suggest using the same **audio** signal that is to be identified....” Ex. 1019, 4. However, it is clear that only the **audio** signal of the “video tape” is being referenced. Ex. 2001 ¶56. In fact, the Seet Provisional states “Media **will be defined as any streaming audio** source in any form, be it radio, television, cable, satellite, internet stream or the like” where “[a]udio can be music, speech advertisements, promotions or the like.” Ex. 1019, 4. Consequently, the term “media” as used in the Seet Provisional is expressly and narrowly defined to refer to “streaming **audio**.” Ex. 2001 ¶57. Although television

is mentioned, it is clear that only the audio portion of the television signal is used to match against other audio portions of that same signal. *Id.* There is simply nothing in the Seet Provisional that suggests matching video data (e.g., pixel matching) to identify content. *Id.*

Consistent with that definition, the “Background” describes “One of the biggest challenges for an **audio** identification or ‘**audio** fingerprinting’ company is the development and maintenance of a database of **audio** against which identifications are attempted.” Ex. 1019, 4. The Seet Provisional further explains that “In order to identify when an ad is playing, the current process is to get the high-quality original ad from the advertiser, extract and normalize **the audio layer**, extract the frequency characteristics (fingerprint **the audio**), then insert the fingerprint and ad information into a database for subsequent retrieval.” *Id.* The “Background” thus only discloses matching audio streams. Ex. 2001 ¶58.

The section titled “The Invention” also makes it clear that the disclosures are limited to analyzing **audio** streams for content identification. *See e.g.*, Ex. 1019, 4 (“Instead of using a high-quality original master recording (say a CD, or digital video tape, etc), we suggest using the same **audio** signal that is to be identified, but from a previous period.”); *id.*, 4-5 (explaining that the media matching “could be accomplished by dividing up **the recorded audio** for the day into small (~4 second) increments and storing each increment with a unique identifier.”). Thus, there is

simply no mention or suggestion that video streams are or could be matched to identify content. Ex. 2001 ¶59.

Petitioner attempts to show the required written description support in its claim-by-claim analysis. Pet., 17-20. However, every single instance cited from the Seet provisional is clearly related *only* to analyzing audio data to identify content, not video data. As shown above, the Seet Provisional does not teach or suggest matching video data streams. Although the Petition cites to the title of the Seet Provisional (“Media Content Database Creation and Maintenance Using Time-Delayed Auto-Correlation of Frequency Characteristics”), as explained above “media” is expressly defined as being limited to only “streaming audio.” Ex. 2001 ¶60. A POSA would thus understand “media” as used throughout the Seet Provisional (including the title) to refer only to streaming audio. *Id.* Additionally, the portions cited in Petitioner’s chart that refer to “samples” would clearly be understood to refer to audio samples (not video), because audio samples and audio fingerprinting is the only type of content identification described in the Seet Provisional. *Id.* (citing Ex. 1019, 4-6). The Seet Provisional thus lacks any written description support for matching video streams to identify content as claim 9 of Seet broadly claims.

While the Seet Provisional is focused exclusively on matching audio streams to identify content, the specification of Seet expressly discloses matching both audio

and video streams to identity content. For example, Seet teaches “if the media stream 102 is a radio broadcast, the media items 104n may comprise a song, an advertisement, a segment of a radio show, or any other type of audio content typical of such broadcasts. Alternatively, **if the media stream 102 is a video broadcast**, each media item may comprise a television show or segment, an advertisement, or **any other type of video** or audio/video content typical of such broadcasts.” Ex. 1006

¶[0026]. Seet also teaches:

A number of embodiments are described above with reference to audio content; however, **it should be understood that various embodiments of the media content database system could be used with any other type of media content or other types of media items.**

As used herein, media items and media data may include information used to represent a media or multimedia content, such as all or part of an audio and/**or video file**, a data stream having media content, or a transmission of media content. Media content may include **one or a combination of** audio (including music, radio broadcasts, recordings, advertisements, etc.), **video** (including movies, video clips, television broadcasts, advertisements, etc.), software (including video games, multimedia programs, graphics software), and **pictures**; however, this listing is not exhaustive. Furthermore, media data, media items, and media content include anything that itself comprises media content, in whole or in part. Media data, media items, and media content can be encoded using **any encoding technology**, and they may also be encrypted to protect their content using an encryption algorithm or any

other suitable encryption technique.

Id. ¶[0050]. Seet thus expressly teaches analyzing and matching video media streams to identify content, even where no audio is present. Ex. 2001 ¶61. In fact, in the Petitioner’s IPR petition challenging the U.S. Patent No. 10,718,848—which has virtually identical claims to the ’768 Patent but that are directed toward “video data samples” rather than “audio data samples”—Petitioner admits that “Seet recognizes that although embodiments are described with respect to audio content, **its ‘media content database system could be used with any other type of media content,’ including a video file.**” *Roku Inc. v. Anonymous Media Research Holdings, LLC*, IPR2024-01057, Paper 1, 27 (citing Ex. 1006, ¶¶[0026], [0050]). In other words, Petitioner itself acknowledges that this language from Seet is disclosing the matching of video streams. Ex. 2001 ¶62. Consequently, a POSA would understand Seet to disclose matching video streams—a concept not taught or suggested by the Seet Provisional. *Id.* ¶63.

All grounds are premised on Seet qualifying as prior art “because [Seet] is entitled to its provisional date for prior art purposes.” Pet., 2. In view of the above, however, Petitioner fails to show that Seet is entitled to its provisional filing date because the provisional does not provide adequate written description support for the full scope of claim 9 in compliance with § 112, ¶ 1. Stated another way, a POSA would not have understood the inventors of Seet to have possessed the full scope of

claim 9 based on the specification of the Seet Provisional. Ex. 2001 ¶63. Because Seet has not been shown to be prior art, institution should be denied.⁵

B. The Petition Fails to Establish that the Subject Matter Relied on from Seet is Present in and Supported by the Seet Provisional.

Petitioner not only bears the burden of demonstrating that the Seet Provisional provides written description support for the full scope of claim 9 of Seet, but also the burden of demonstrating that the subject matter relied on as prior art from Seet is described in the Seet Provisional. *Dynamic Drinkware*, 800 F.3d at 1381-82. Petitioner fails to carry that burden.

The Petition does not adequately correspond the portions cited from Seet to

⁵ Patent Owner is also prepared to antedate the filing date of the Seet Provisional by demonstrating conception, diligence, and reduction to practice, just as it has done in a pending reexamination against the '768 Patent. In that reexamination, Patent Owner successfully antedated a key reference called “Cheung,” which claimed priority to a February 2004 provisional application just like Seet. *See* Ex. 2003, 7-8. Patent Owner recognizes, however, that antedation is highly fact intensive and that the Board is reluctant to deny institution based on antedation given that Petitioner has no opportunity to take discovery of Patent Owner’s declarants pre-institution. *See Medtronic, Inc. v. Teleflex Innovations S.A.R.L.*, IPR2020-00135, Paper 22, 11 (PTAB June 8, 2020) (instituting trial and explaining that “Petitioner has not had an opportunity to fully consider and address this [antedation] evidence,” and that “these factual issues are best resolved after the record is more fully developed”). Consequently, Patent Owner will antedate if the Board institutes trial.

the portions of the Seet Provisional that allegedly support those citations. Instead, Petitioner vaguely alleges that the “Seet provisional also describes the subject matter relied upon as prior art” with citations to only the Seet Provisional. Pet., 20-22. Even accepting as true that the Seet provisional illustrates and describes the vaguely referenced scrubbing “aspect” relied upon from Seet, the Petition fails to demonstrate that *specific relied-on disclosures* from Seet are supported by the Seet Provisional. In fact, as explained further below, it is indisputable that the Petition relies on portions of Seet that have no support in the Seet Provisional.

Turning first to the “Overview” of Seet in the Petition, it includes figures 1 and 2 and quotations and citations to various portions of Seet. Pet. 22-26. However, Petitioner fails to demonstrate or show where those same disclosures are supported by the Seet Provisional. Indeed, neither of those figures is in the Seet Provisional and there are no corresponding citations to the Seet Provisional showing that the relied-on disclosures are actually supported by it. Petitioner simply makes no effort here to show where or how these disclosures are adequately supported in the Seet Provisional.

Although Petitioner provides dual citations to Seet and the Seet Provisional in later parts of the Petition, Petitioner still improperly relies on purportedly critical disclosures from Seet without demonstrating that those disclosures are supported by the Seet Provisional. For example:

Seet provides express motivation for using its methods to improve media identification systems, such as that of Herley682. See EX1006, ¶¶11-13. In particular, Seet’s method provides “[s]ignificant operational and competitive advantages” and “improve[d] accuracy of matches,” as well as “largely automat[ing]” “creating and maintaining the media content database.” EX1006, ¶13.

Pet., 32-33 (alterations in original). Yet, nothing resembling these statements—which Petitioner relies on as an “express motivation” to combine—is present in the Seet Provisional. *See generally* Ex. 1019. Consequently, the Petition not only fails to adequately provide support for each relied-on disclosure from the Seet Provisional, but the Petition improperly relies on disclosures from Seet that are not even supported by the Seet Provisional.

Petitioner is not permitted to mix-and-mingle portions of Seet that allegedly have support in the Seet Provisional with portions of Seet that have no support, forcing Patent Owner and the Board to play archeologist with the record to determine what is and is not adequately disclosed in the provisional. *See Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (“It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify with particularity the evidence that supports the grounds for the challenge to each claim.”) (quoting *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016)). It was Petitioner’s burden to demonstrate that the subject matter relied on from Seet is supported by the Seet Provisional. Petitioner failed to carry that burden by not clearly corresponding the

relied-on portions of Seet back to the Seet Provisional. *Dynamic Drinkware*, 800 F.3d at 1382 (affirming Board decision that petitioner failed to carry its burden of showing that an alleged prior art U.S. patent was entitled to its provisional priority date by failing to adequately show where the relied-on disclosures were present in and supported by its provisional).

IV. Petitioner Cannot Meet its Burden on Any Ground Because of Fundamental Defects with Herley682

All grounds rely exclusively on Herley682 for most limitations of the challenged independent claims. However, Petitioner fails to demonstrate that Herley682 discloses or renders obvious several of those limitations. On this basis alone, Petitioner fails to carry its burden of demonstrating a reasonable likelihood of unpatentability of any claim.

A. Overview of Herley682 and '768 Patent

Herley682 is directed to “a system and method for sampling one or more channels of a broadcast spectrum, such as a radio frequency spectrum, identifying and storing content information for each sampled channel, and providing a user interface for allowing interactive user queries and display of the stored content information.” Ex. 1005 ¶[0002]. In other words, the system of Herley682 is broadcast-channel-centric, meaning that it receives raw media directly from the broadcast source (e.g., radio station) so that it can analyze and identify the content

(e.g., songs) being transmitted over a specific broadcast channel (e.g., radio station).
Ex. 2001 ¶64. Herley682 is thus not concerned with—and is simply not capable of—
tracking the media consumption habit of audience members. *Id.* ¶65. Instead,
Herley682's broadcast-channel-centric system is limited to cataloging broadcast
content by directly tuning to the broadcast source, providing no insights whatsoever
into what content audience members are consuming but only providing insights into
what the content source is distributing. *Id.*

Figure 2 of Herley682 (reproduced below) depicts an exemplary architectural
diagram of an implementation of the broadcast-channel-centric system:

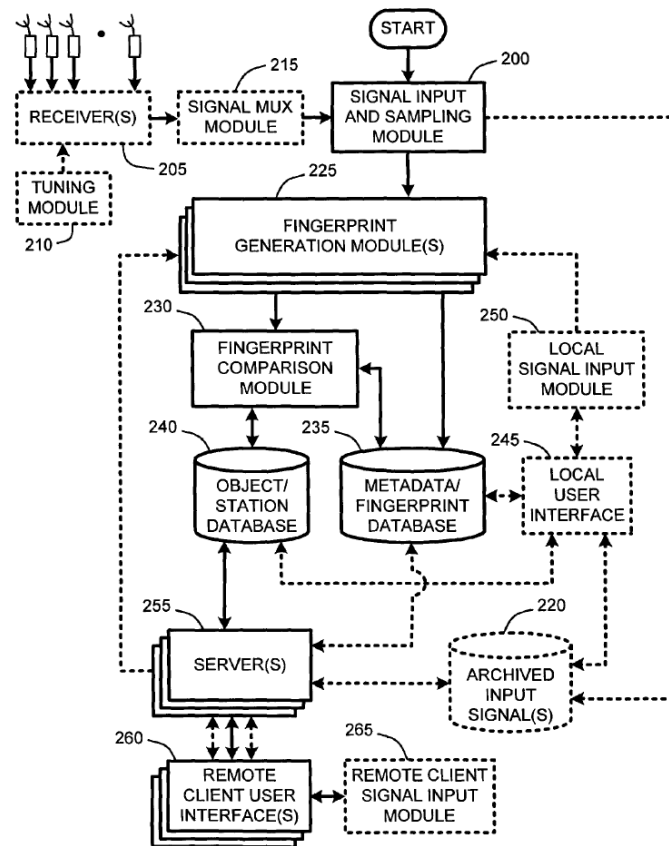


FIG. 2

Herley682 explains that “radio or television broadcasts are captured using one or more receivers 205.” Ex. 1005 ¶[0075]. Once the receiver 205 receives one or more radio or television broadcast signals, they are then passed to the signal input and sampling module 200 to generate samples. *Id.* ¶[0084].

Next, “signal samples are continuously provided [by sampling module 200] in real-time to one or more fingerprint generation modules 225.” *Id.* (alterations added). The fingerprints are generated using a “signal fingerprint extraction algorithm, i.e., a ‘fingerprint engine,’ for deriving traces from segments of one more signals.” *Id.* ¶[0067]. “These traces are referred to as ‘fingerprints’ since they are used to uniquely identify the signal segments from which they are derived.” *Id.* ¶[0063]. More specifically, the fingerprints are “derived” from the sample generated by module 200 by using the algorithm to “calculate” the trace fingerprint. *Id.* ¶[0077] (“[T]he stream might be sampled for a time great enough to calculate a trace fingerprint if one fingerprint is calculated per minute for a repetitive FM radio station....”). In other words, the fingerprints are generated based on (or “derived from”) the samples, but are not themselves part of the samples. Ex. 2001 ¶¶66-67.

The calculated fingerprints are then provided from fingerprint generation module 225 to fingerprint comparison module 230. Ex. 1005 ¶[0086]. Fingerprint comparison module 230 searches a metadata/fingerprint database 235 to determine if there is a match between the extracted fingerprint and pre-computed fingerprints

stored in database 235. *Id.* “If a match is identified ... then the sampled portion of the input signal from which the fingerprint was extracted is identified as belonging to an object of interest corresponding to the fingerprint and metadata in the metadata/fingerprint database 235.” *Id.* “This information, including the metadata, is stored in an object/station database 240.” *Id.* The database 240 can then be queried by a user of the system to pull statistics and other information regarding the content played on the particular broadcast channel. *Id.* ¶¶[0125]-[0167]; Ex. 2001 ¶68.

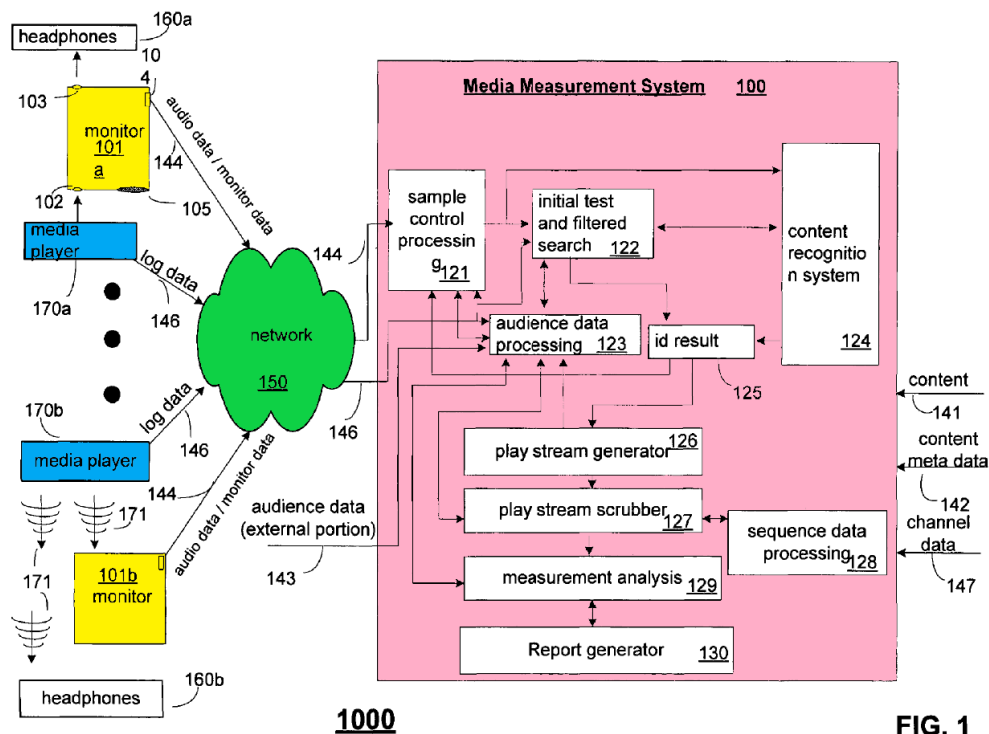
Herley682 is thus fundamentally different than the ’768 Patent, which is directed toward a media usage and monitoring system for tracking the *consumption of media*. As the “Background of the Invention” explains:

Traditional media measurement systems have focused on **directly monitoring** channels being utilized by audience members. However, as media consumption patterns have become more complex, channel-centric media measurement **is inadequate for many purposes**. It may be desirable to track usage of particular media content independent of channel. Furthermore, although “channel” identification in a traditional media measurement system may sometimes be limited to radio or television broadcast station, it 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.

Ex. 1001, 1:14-26. In other words, the inventors recognized that broadcast-channel-centric systems—like Herley682—were “inadequate for many purposes.” Ex. 2001

¶69. The inventors also recognized that existing media content recognition systems had drawbacks, such as reliance on embedded “tags” or on computationally intensive database searches. Ex. 1001, 1:32-56. In view of these drawbacks, the inventors determined that “an improved media measurement system and method is needed.” *Id.*, 1:50-55. To that end, they invented a media measurement system that monitors media consumption, while also increasing the accuracy of content identification and reducing computational overhead and data transmission requirements via “scrubbing.” Ex. 2001 ¶69.

In reference to Figure 1 (annotated below), the media measurement system 1000 comprises media monitoring devices 101a and 101b (blue) that each monitor a respective media player 170a and 170b (yellow). Ex. 1001, 2:66-3:25.



Each media monitoring device 101 monitors the media being “consumed” by the audience member(s) of a respective media player 170 and provides “audio data” associated with the media player, along with “monitor data” 144 (e.g., device ID), over network 150 (green). *Id.*, 3:6-10, 3:38-46. The audio data may be “raw audio data” that the monitor receives from the media player, which may further “undergo[] one of a variety of levels of processing” by the monitor, such as pre-calculating signatures (“sometimes referred to as audio fingerprints”). *Id.*, 3:43-54. In other words, the fingerprints or signatures may be generated by the media monitoring devices 101, avoiding the need for the monitoring devices 101 to send the raw audio signal over the network for matching, which reduces the amount of data transmitted over the network. Ex. 2001 ¶¶70-71.

In reference to Figure 4 (reproduced below), once the media measurement system 100 receives the audio data and monitor data from a media monitoring device 101, a raw play stream 410 is generated, which “itemizes a sequence of analyzed samples and relates that sequence to corresponding content identification results,” indicating a likely match with a particular piece of content (e.g., “song 51”) or the absence of a likely match (e.g., “none”):

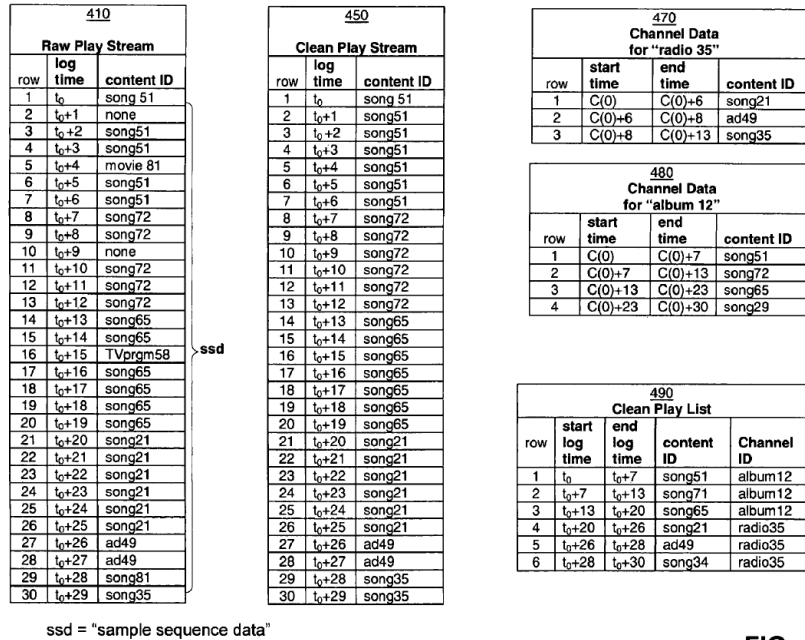


FIG. 4

Ex. 1001, 9:12-31. The raw play stream 410 is then “scrubbed” to generate clean play stream 450 by “[b]y analyzing the sequence of data on Raw Play Stream” such that “it is possible to locate and correct any identifications that are likely to be incorrect or to supply missing identifications where the system has not otherwise been able to provide an identification.” *Id.*, 9:32-37.

The invention of the '768 Patent thus overcomes the fundamental inadequacy of broadcast-channel-centric systems—like Herley682⁶—by observing the media consumption of audience members’ media players using media monitoring devices. Ex. 2001 ¶74. In so doing, the invention is able to track audience media consumption

⁶ Herley864 and Seet are both broadcast-channel-centric systems suffering from this same inadequacy, as later explained.

habits, as well as “scrub” results to improve content identification accuracy. *Id.* This is in stark contrast to the broadcast-channel-centric system of Herley682, which simply receives a raw broadcast channel signal and identifies the content being broadcast by that channel, which provides no insights into audience consumption and does not rely on “scrubbing” as claimed. *Id.*

B. Petitioner Fails to Demonstrate that Herley682 Teaches or Renders Obvious Several Claim Elements

Petitioner attempts to shoehorn the fundamentally different system of Herley682—a broadcast-channel-centric system that simply receives raw audio data from a broadcast channel to identify content being played on the channel—into the claims of the ’768 Patent. In so doing, Petitioner maps Herley682 to the claims in ways that are not only objectively wrong, but also illogical.

1. *the audio data samples comprising representations of audio data* (Claim [1.1] / [9.P])⁷

Petitioner alleges that the samples generated by sampling module 200 are *the audio data samples* and that the fingerprints generated by fingerprint generation module 225 are *representations of captured audio data*. See e.g., Pet., 38 (“Sampling module 200 receives and samples these broadcast signals, and sends **the samples**

⁷ Patent Owner uses the same claim element references from the Petition for consistency.

(*data for a sequence of audio data samples*)....”); *Id.*, 39 (“Herley682’s **fingerprints** are *representations of captured audio data* as claimed”); *Id.*, 40 (“a POSA would have further understood that Herley682’s broadcast signals, **samples** (*data for a sequence of audio data samples*), and **fingerprints** (*representations of audio data captured*) are provided respectively to signal input and sample module 200...”); Ex. 1003 ¶173 (“Herley682’s sampling module 200 receives and samples these broadcast signals, and sends the **samples** (*data for a sequence of audio data samples*) to fingerprint generation module(s) 225, which in turn extracts fingerprints from the samples In other words, Herley682’s **fingerprints** are *representations of captured audio data* as claimed.”). However, the plain claim language recites *audio data samples comprising representations of audio data*. Thus, by virtue of the language **comprising**, the *representations of audio data* must be **part of** the *audio data samples*. See *Cias, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007) (“In the patent claim context the term ‘comprising’ is well understood to mean ‘**including** but not limited to.’”). In other words, the *audio data samples* must include the *representations of audio data*. Ex. 2001 ¶76.

The fingerprints (alleged *representations of capture audio data*) generated by fingerprint generation module 225 are not—and cannot be—part of the audio samples (alleged *audio data samples*) generated by module 200. *Id.* ¶77. Rather, those fingerprints are generated **based on** (or “derived from”) the audio samples

received from module 200. *Id.* As shown below, the sampling module 200 (red) generates the audio samples from an audio signal, and the samples are then passed (as indicated by the red arrow) to the fingerprint generation module 225 (green):

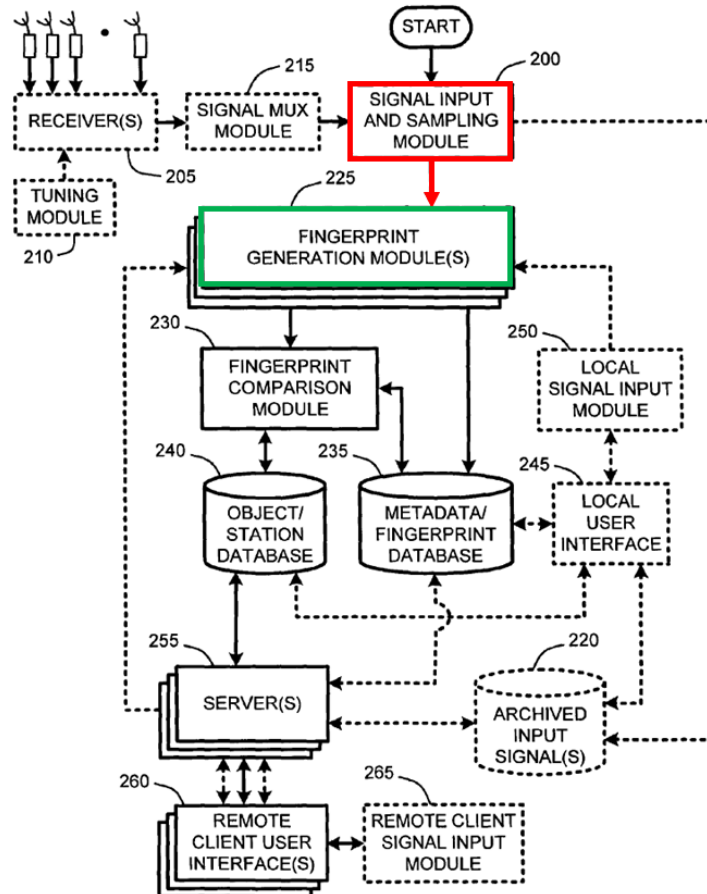


FIG. 2

Id. (citing Ex. 1005 ¶¶[0075], [0084]). Herley682 explains that:

One common method for automatically identifying such objects involves analyzing an input signal, or a predefined portion or segment of such a signal [e.g., an audio sample], **to produce a set of parameters or features that are derived from the signal**. These parameters or features are then stored as “fingerprints” that uniquely identify such

objects. These fingerprints may then be used to identify subsequent occurrences of objects in a similar signal.

Ex. 1005 ¶[0005] (alterations added). Herley682 further explains that the “interactive signal analyzer uses a signal fingerprint extraction **algorithm**, i.e., a ‘fingerprint engine,’ for **deriving** traces from segments of one or more signals. These traces are often referred to as ‘fingerprints’ since they are used **to uniquely identify** the signal segments **from which they are derived**.” *Id.* ¶[0013]; *see also e.g., id.* ¶¶[0015], [0017], [0063]. In other words, Herley682 explicitly teaches that “fingerprints” are **derived from** a raw audio signal or audio samples based on the audio signal—the fingerprints are not part of the audio samples. Ex. 2001 ¶¶77-78. Indeed, Herley682 teaches that fingerprints are “calculated” (or “computed”) based on the samples using a “signal fingerprint extraction algorithm, i.e., a ‘fingerprint engine,’” which is how the fingerprints are derived from the samples. Ex. 1005 ¶¶[0063], [0077]; *see also id.* ¶[0007] (“Once **computed**, these fingerprints are typically stored in a database of known objects.”).

This is consistent with the knowledge of a POSA, who would readily understand that fingerprints (also referred to as “signatures”) are calculated **based on** (or **derived from**) samples—the fingerprints are not themselves part of, or included within, the samples. Ex. 2001 ¶79. In addition to the plain teachings from Herley682 discussed above, numerous other objective pieces of evidence prove this critical point. *Id.*

For example, the Specification of the '768 Patent discusses PCT International Publication WO 2004/030341 entitled "Fingerprint Extraction," which accurately states: "A fingerprint, also often referred to as signature or hash, is a sequence of bits that **is derived from** multimedia content, e.g. an audio song, an image, a video clip, etc.... Fingerprints are also used to identify media content." Ex. 2004, 1:6-14 (cited by Ex. 1001, 5:52-53). This is consistent with the meaning of "fingerprint" as described by other objective sources. Ex. 2001 ¶¶80-81 (citing *e.g.*, Ex. 2005, 1:6-12 (entitled "Fingerprinting Multimedia Contents" and explaining that "Fingerprints, in the literature sometimes referred to as hashes or signatures, are binary sequences extracted from multimedia contents, which can be used to identify said contents.") (cited by Ex. 1001, 5:49-52); Ex. 2006, 1:6-25 (entitled "Improvements in and relating to fingerprint searching," and explaining that "Hashes of multimedia content have been referred to as robust hashes ... but are now commonly referred to as multimedia fingerprints.")).

A "hash" or "signature" is a value generated based on underlying data, which in the context of "fingerprinting" acts as a shorthand representation of features of an audio/video signal or sample. *Id.* ¶82 (citing Ex. 2007, 4 (defining "hash")). Petitioner itself acknowledges that the fingerprints are "used to uniquely identify the signal segments **from which they are derived.**" Pet., 39 (citing Ex. 1005 ¶[0013]); *See also* Ex. 1008 ¶[0020] (explaining that "each fingerprint **represents a number of**

features of the media sample at each location”).

A POSA would understand that the fundamental purpose of fingerprinting is to calculate a value (e.g., a hash or signature) representative of features of the underlying sample, which can then be used for comparison rather than comparing the underlying sample itself. Ex. 2001 ¶83. Such fingerprints “can be seen as a summary or perceptual digest of the audio recording” (also called a “signature” or “hash”), which can be compared to other fingerprints. Ex. 2008, 10. Fingerprinting “eliminates the direct comparison of the (typically large) digitized audio waveform as an efficient and effective approach to audio identification.” *Id.* In other words, fingerprinting eliminates the need to compare samples directly to other audio samples, but instead allows for the comparison of fingerprints *representative of* features of samples. Ex. 2001 ¶83 (citing Ex. 1005 ¶¶[0005]-[0007] (explaining that fingerprinting involves “produc[ing] a set of parameters or features that are **derived from** the signal” and “[o]nce **computed**, these fingerprints are typically stored in a database of known objects”); Ex. 2009, 2:37-44 (“A fingerprint of a multimedia object/content/signal is a *representation of perceptual features* of the object/content/signal part in question. Such fingerprints are sometimes also known as ‘(robust) hashes.’”).

Petitioner and its proposed expert appear to have overlooked that the claims expressly require that the *audio data samples* include the *representations of audio*

data by virtue of the *comprising* language. Indeed, nowhere in Petitioner’s or its expert’s analysis do they account for or address the *comprising* language at issue here. Pet., 38-41. Instead, they simply gloss over this claim requirement as if it does not exist. It is also possible that they instead fundamentally misunderstand what Herley682 teaches. Petitioner cites to Herley682’s teaching that fingerprint generation module 225 “extracts fingerprints from the samples,” possibly misunderstanding this to mean that the fingerprints are part of the audio sample. Pet., 38.⁸ However, a POSA would understand that when Herley682 refers to “extracting” fingerprints from the audio samples, it is simply referring to how the fingerprints are “derived from” or “calculated” based on the audio samples, as evidenced by the numerous exhibits discussed and cited above. Ex. 2001 ¶84. Nothing in the Specification or Herley682 teaches, or even suggests, that a fingerprint is somehow part of the audio sample upon which it is based. *Id.* ¶85. Nor does the Specification or Herley682 refer to or describe fingerprints (or signatures) as being part of the audio sample from which a fingerprint was derived. *Id.*

Neither Petitioner nor its expert explain how the audio samples generated by

⁸ As discussed in Section II, Dr. Russ does not appear to have any real-world experience or educational background dealing with the technical concept of audio data sampling or audio “fingerprinting.” This may explain his misunderstanding here.

module 200 somehow include or comprise the fingerprints of module 225, which are created **after** the audio samples and only **based on** the samples. Instead, they simply gloss over the *comprising* language. Petitioner’s failure to adequately identify where, or explain how, Herley682 satisfies the *comprising* language is sufficient basis alone to deny institution. *Nearmap US, Inc. v. Eagle View Techs., Inc.*, IPR2024-00716, Paper 9, *13 (PTAB Oct. 9, 2024) (explaining that “Petitioner has the responsibility to make plain its challenge to the disputed claims” and “[i]t is not the Board’s responsibility to weave together Petitioner’s evidence into a cohesive case”) (citing 37 C.F.R. §§ 42.104, 42.22(a)(2)).

Even if it were not, Patent Owner has provided an abundance of objective evidence discussed above that demonstrates that the samples generated by sampling module 200 (alleged *audio data samples*) cannot plausibly *comprise* the alleged fingerprints generated by fingerprint module 225 (alleged *representation of audio data*). Indeed, the ’768 Patent itself explicitly teaches that fingerprints are calculated or derived. Ex. 2001 ¶85 (citing Ex. 1001, 3:46-47 (describing audio fingerprints or signatures as “calculated”), 4:21-24 (explaining that “signatures” and “fingerprints” are “derivable”)).

In short, Petitioner fails to carry its burden of showing unpatentability, because the alleged *audio data samples* (i.e., audio samples created by module 200) do not *compris[e]* the alleged *representations of audio data* (i.e., fingerprints

generated by module 225). Because Petitioner relies solely on its mappings to Herley682 for this limitation in all grounds, Petitioner cannot carry its burden with respect to any ground.

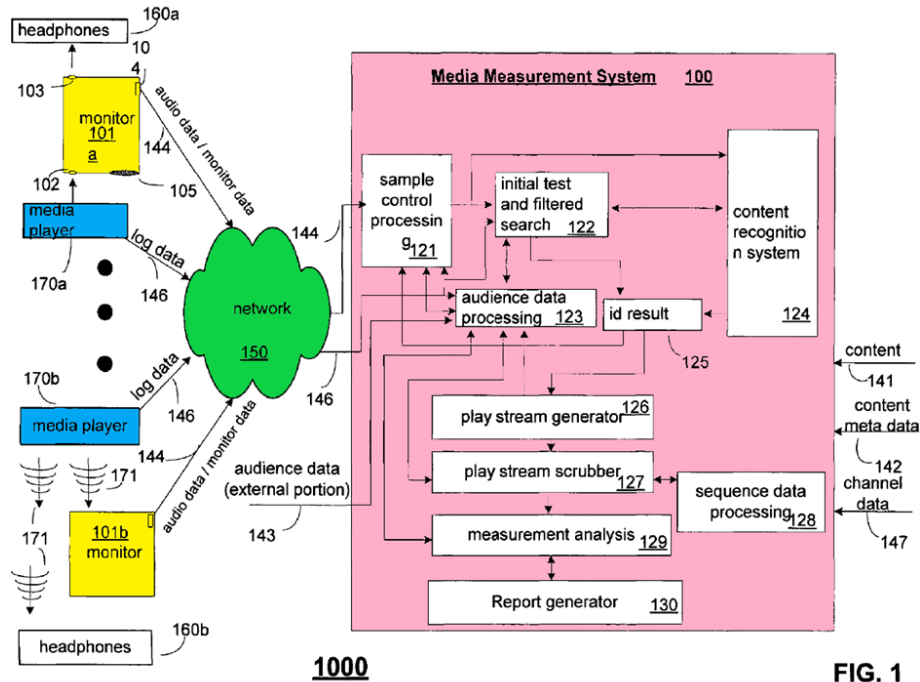
2. *media monitoring device* (Claim [1.1] / [9.P])

The claims recite *the audio data samples comprising representations of audio data captured at a media monitoring device*. Petitioner provides only a conclusory identification of receiver 205 in Herley682 as the alleged *media monitoring device*. Pet., 38. Tellingly, however, Petitioner does not explain how or why a POSA would understand a basic radio receiver 205 to qualify as such.⁹ Nor does Petitioner cite any intrinsic or extrinsic evidence demonstrating that a POSA has ever referred to or considered a simple radio receiver 205 as a *media monitoring device*. Indeed, Petitioner does not even cite its own expert to support the conclusory identification. *Id.* (citing only Ex. 1005). In fact, even in the portion of Dr. Russ’ declaration that appears to correspond to the Petition’s lone discussion of the *media monitoring device*, Dr. Russ does not offer that testimony. *Compare* Ex. 1003 ¶173 with Pet., 38. And while Dr. Russ states that he “consider[ed] the disclosure of the ’768 patent with respect to limitations recited in this claim element” to ascertain their meaning,

⁹ Although in this proceeding Petitioner proposes no construction for *media monitoring device* and does not address its meaning, in the co-pending litigation Petitioner proposes this term for construction, along with many others. Ex. 2011.

he provides no analysis or discussion demonstrating that he did so with respect to *media monitoring device*. See Ex. 1003 ¶¶162-174.

Petitioner glosses over this limitation without any explanation, and without any supporting expert testimony, in an effort to pigeon-hole the broadcast-channel-centric content identification system of Herley682 into the claims. Indeed, Herley682 teaches that the receiver 205 is directly tuned to a radio or television broadcast, because Herley682's system is identifying audio content being played on one or more broadcast station channels. Ex. 2001 ¶88. The '768 Patent criticizes such channel-centric measurement as "inadequate for many purposes," and explains "it 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." Ex. 1001, 1:14-32. To that end, in reference to Figure 1 (annotated below) the '768 Patent discloses media monitoring devices 101a and 101b (yellow) to track the media consumption habits of individual audience members' media players 170a, 170b:



Id., 3:4-25. The media monitoring devices 101 not only upload over the network 150 audio data (e.g., fingerprints) associated with audio consumption at the media players 170 of audience members, but also “monitor data” such as device ID. *Id.*, 3:38-46, 4:49-55. By using media monitoring devices 101, the media consumption habits of audience members are tracked, which overcomes a fundamental inadequacy of broadcast-channel-centric systems like that of Herley682. Ex. 2001 ¶¶88-89.

Petitioner and its expert view *media monitoring device* in a vacuum, divorced from the teachings of the Specification. However, the “claims, of course, do not stand alone.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). The claims must be read in view of the specification, which “is always highly relevant to

the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Id.* (internal quotations and citations omitted).

The term *media monitoring device* is not an industry-recognized term. Ex. 2001 ¶90. Consequently, the specification here takes heightened importance in understanding its plain and ordinary meaning. As discussed above, the ’768 Patent expressly criticizes channel-centric measurement systems as “inadequate” and explicitly addresses this inadequacy via the use of media monitoring devices 101. *Id.* The specification repeatedly and uniformly teaches that media monitoring devices 101 are associated with media players so that the media consumption habits of individual audience members can be observed, thereby overcoming the problem with broadcast-channel-centric systems like Herley682. *Id.* Each and every embodiment in the patent involves tracking media consumption of a media player via a media monitoring device, and there is no teaching or suggestion that a media monitoring device is simply a receiver tuned to a broadcast station. *Id.*

Moreover, the ’768 Patent consistently describes the media monitoring devices 101 as providing not only audio data (whether raw audio or audio fingerprints) but monitor data (e.g., device ID). *Id.* ¶91 (citing Ex. 1001, 3:39-49, 4:49-51). Device ID, for example, is used to identify the particular media monitoring device among a plurality of media monitoring devices. *Id.* In light of these exclusive and repeated teachings, a POSA would understand that a *media monitoring device*

monitors media consumed by a media player. *Id.*; *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1371 (Fed. Cir. 2016) (explaining that “[w]e have recognized that when a patent ‘repeatedly and consistently’ characterizes a claim term in a particular way, it is proper to construe the claim term in accordance with that characterization”); *See e.g., M2M Sols. LLC v. Sierra Wireless Am., Inc.*, 2013 U.S. Dist. LEXIS 160816, 2013 WL 5981336, *17 (D. Del. Nov. 12, 2013) (construing “monitoring device” in light of the specification to mean “A device configured to remotely monitor a programmable communicator device and/or a monitored technical device,” not simply any device that monitors); *Cisco Systems, Inc. v. Centripetal Networks, Inc.*, IPR2018-01512, Paper 32, *11-12 (PTAB Mar. 19, 2020) (explaining that “[w]e construe the recited ‘monitoring device’ **in view of the Specification**,” and construing it “consistent with the Specification” to mean “a device configured to copy (or store) packets or data contained within them,” not merely any device that monitors).

Moreover, it is indisputable that the ’768 Patent is exclusively directed towards a “media measurement system.” Ex. 2001 ¶92. That is an established, known term in the industry that refers to the monitoring of audience media consumption. *Id.* (citing Ex. 2010, 11 (“If you are familiar with the Nielsen Ratings, you are familiar with media measurement. This type of research is the primary tool of media planners, who use the information to device on the placement of their

advertising campaigns. Media measurement provides the subscriber with estimates of the number of people **who consume various types of media** (radio, TV, print, online, outdoor, etc.) and **the characteristics of those people.”**)). Consistent with that fact, claim 1 recites a *media monitoring device* and a *media measurement method*. In stark contrast, Herley682 never mentions or discusses “media measurement,” but rather is broadcast-channel-centric. Consequently, a POSA would understand and interpret the claimed “media monitoring device” to refer a device that monitors media consumption. Ex. 2001 ¶92.

The receiver 205 of Herley682 is not a *media monitoring device*. *Id.* ¶93. For one, the receiver does not monitor media consumed by a media player but rather is tuned directly to one or more broadcast channels, thereby presenting a broadcast-channel-centric system that is inadequate for tracking audience media consumption. *Id.* Moreover, the receiver 205 of Herley682 is not capable of, for example, providing monitor data, but rather only provides raw audio broadcast by a station. *Id.* Indeed, Petitioner fails to identify anything in the specification that teaches or suggests that a *media monitoring device* could be a basic radio receiver. Nor would a POSA ever refer to a radio receiver standing-alone as a “media monitoring device.” *Id.*

To further illustrate how unreasonably broad Petitioner’s interpretation of *media monitoring device* is, under that interpretation the media measurement system

100 (of Figure 1) would also necessarily have an alleged “media monitoring device” (e.g., a receiver) that receives the media content from the monitoring devices 101 over the network 150. *Id.* ¶ 94. However, the Specification never refers to or suggests that the system 100 has such a device—the only *media monitoring device* disclosed or referenced by the Specification is a device that monitors media consumed by media players, which provides a fundamental advantage over prior art like Herley682. *Id.*

Because Herley682 fails to teach or suggest the claimed *media monitoring device*, and because Herley682 is the only reference relied on by Petitioner for this limitation, Petitioner cannot carry its burden as to any challenged claims.

3. *representations of audio data captured at a media monitoring device* (Claim [1.1] / [9.P])

Claim [1.1] recites “receiving over a network, at one or more computers, data for a sequence of audio data samples, the audio data samples comprising *representations of audio data captured at a media monitoring device.*” Claim [9.P] similarly recites “the one or more computers being coupled to a network to receive, over the network, data for a sequence of audio data samples, the audio data samples comprising *representations of audio data captured at a media monitoring device.*”

Petitioner alleges, in reference to Figure 5 of Herley682 (annotated below), that receiver 205 (red) is the *media monitoring device* and that fingerprints generated

by fingerprint generation module 225 (green) constitute *representations of captured audio data*:

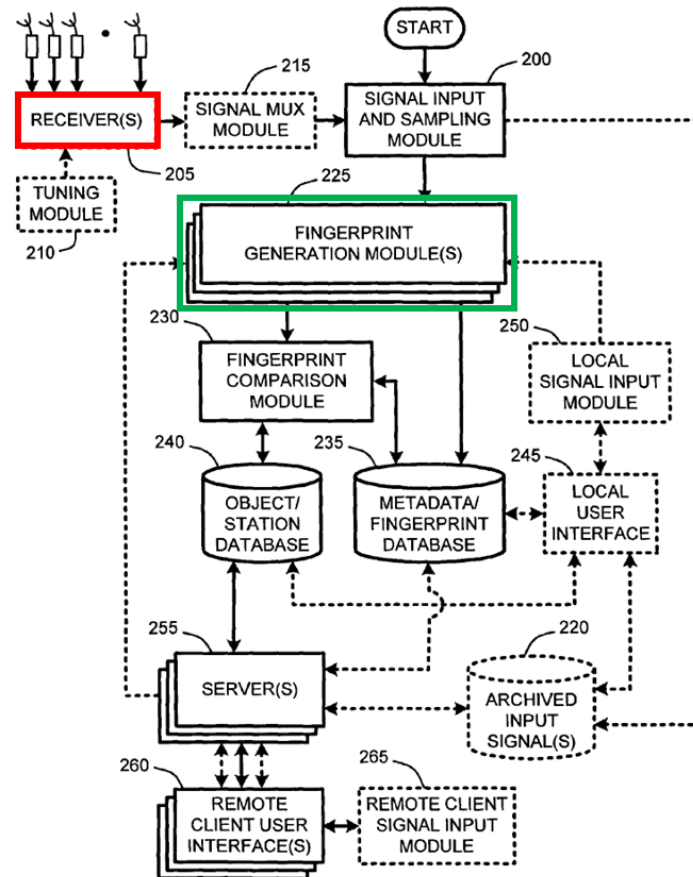


FIG. 2

Pet., 39 (“Herley682’s fingerprints are *representations of captured audio data* as claimed”); Ex. 1003 ¶170 (“Thus, the generated fingerprints are ‘representations of audio data captured at a media monitoring device as claimed.’”), ¶171 (“a POSA would have further understood that Herley682’s fingerprints (the representations of audio data captured) are provided to fingerprint comparison module 230....”).

However, the claim language clearly recites “the audio data samples comprising *representations of audio data captured at a media monitoring device.*”

The identified fingerprints cannot satisfy the claimed *representations of audio data*, because those fingerprints were not *captured at* receiver 205 (alleged *media monitoring device*, red). Ex. 2001 ¶97. Petitioner attempts to artificially broaden this limitation by characterizing it as *representations of captured data*, which omits the plain language requirement that those representations are *captured at a media monitoring device*. This fundamentally distinguishes the claims from Herley682.

Herley682 tunes receiver 205 to a broadcast radio or television channel, and the raw audio received is passed along to signal mux module 215, then signal input and sampling module 200, and then fingerprint generation module 225. Ex. 1005 ¶¶[0075], [0084], [0086]. Consequently, the fingerprints (alleged *representations of audio data*) are not *captured at the alleged media monitoring device* (receiver 205), but rather they are captured at fingerprint generation module 225. Ex. 2001 ¶98. In stark contrast, the '768 Patent teaches that the media monitoring devices 101 may generate the signatures or fingerprints¹⁰ and then transmit them over the network 150. *Id.* (citing Ex. 1001, 3:38-51 (explaining that the audio data provided by

¹⁰ The '768 Patent explains that “signatures” and “fingerprints” have the same meaning. Ex. 1001, 3:46-48 (“audio signatures (sometimes referred to as audio fingerprints)”).

monitoring devices 101 may “comprise pre-calculated signatures...”; Ex. 1001, 4:48-57 (explaining that audio data may be “divided into samples ... at monitor 101”); Ex. 1001, 4:65-67 (explaining that audio samples are “captured”)).

In short, the alleged *representations of audio data* (fingerprints generated at module 225) are not *captured at* the alleged **media monitoring device** (receiver 205). *Id.* ¶99. Because Petitioner fails to demonstrate that Herley682 teaches this limitation, and because Herley682 is the only reference relied on by Petitioner for this limitation, Petitioner fails to carry its burden of showing a likelihood of unpatentability with respect to any challenged claim.

4. *the raw play stream comprising a sequence of content identification results corresponding to the sequence of audio data samples* (Claim [1.3] / [9.2])

Petitioner corresponds “the collection of data stored in Herley682’s object database 240” to the *raw play stream* but concedes that the collection of data is not in chronological order. Pet., 43-44; *See also id.*, 47 (arguing that “the data in Herley682’s object databases 240 corresponds to the claimed *raw play stream*”). Petitioner instead argues “it would have been obvious ... at a minimum, to sort the data in **Herley682’s object database 240** based on the time data to put it in sequential, chronological order.” *Id.*, 44. But this is nothing more than a conclusory statement that the claim limitation would have been obvious. Petitioner does not explain **why** a POSA would want to put the data in sequential order, nor explain why

there would be any desire or need for the objects **in the objects database 240** to be sequentially ordered.

To the contrary, there is no reason for Herley682 to store the objects in object database 240 sequentially because the system user can simply query the database to generate reports in the desired format. *See* Ex. 2001 ¶101 (citing Ex. 1005 ¶¶[00125]-[00158], [0179]-[0186] (describing comprehensive nature of database query tools and report generation)). The fact that the object entries may have time stamps does not change this (Pet., 43)—the stamps are simply for the user to know when the content was played as part of the query, not for sequentially ordering content within the database. Ex. 2001 ¶102. In fact, although Herley682 teaches that its object database 240 captures “each new occurrence,” where there are identical occurrences it “increments a counter for that object **rather than creating a new entry** for the already played object.” Ex. 1005 ¶[0029]. In other words, Herley682’s object database is specifically designed such that it does not even store every occurrence of an identified object, never mind storing them all in sequential order as part of a *raw play stream* as Petitioner alleges. Ex. 2001 ¶102.

The reason the claimed invention requires a *raw play stream* comprising a **sequence** of content identification results corresponding to the **sequence** of audio data samples, is because the sequence is used to perform the *scrubbing*. *Id.* ¶103. In contrast, Herley682 has no need for sequentially ordering its objects because the user

can query the database for object information, regardless of whether the objects are stored sequentially. *Id.*

Petitioner further argues that “it would have been obvious to store the data in sequential order as the data in the stream is processed.” Pet., 44. Again, Petitioner provides no articulated rational as to why it would have been obvious to do so. But even if it was obvious to store the data in sequential order as the data in the stream is processed, Petitioner fails to explain how this temporary processing data stream could somehow be used for the *scrubbing* required later by the claim. For example, how would this so-called obvious sequential data stream later be used by Herley682 to *scrub*? Where would the so-called obvious sequential data stream be stored in Herley682? Petitioner does not say or explain because, again, Herley682 has no reason to store a sequential order of objects for later use. Ex. 2001 ¶104.

Apparently recognizing this flaw in Herley682, Petitioner argues that “Seet provides an express teaching of maintaining the temporal integrity, i.e., chronological order, of the sample data, confirming that a POSA would have been motivated to do so.” Pet., 44. But Seet teaches “maintaining the temporal integrity” because it is relying on the sequence to infer matches for unmatched content. Ex. 2001 ¶105 (citing Ex. 1019, 4-5). Herley682 simply has no reason to similarly maintain temporal integrity in its object database because it is not inferring results like Seet. In other words, the mere fact that Seet may maintain its results in

chronological order for its own distinct purpose, does not mean that Herley682 has any motivation to do the same with its object database, which is for a different purpose. *Id.*

Petitioner thus fails to demonstrate that the use of a *raw play stream* as claimed is disclosed by Herley682 or rendered obvious by the combination of Herley682 and Seet. And although in Ground 3 Petitioner also relies on Herley864—in addition to Herley682 and Seet as proposed in Ground 2—Petitioner relies on Herley864 only “[t]o the extent Patent Owner argues that *generating a clean play stream* ... requires generation of a new data set.” Pet., 68. Thus, Herley864 is not being relied on to address the lack of a *raw play stream* as claimed in Herley682-Seet as discussed above. Thus, Herley864’s inclusion in Ground 3 does not address this deficiency.

5. *an indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database* (Claim [1.5] / [9.4])

Petitioner contends that the *scrubbing* recited in Claim [1.7] / [9.6] would be obvious based on the combination of Herley682 and Seet, where Seet is relied on “to identify and correct **missing data** in order to obtain a complete and accurate data set in the object/station database 240” of Herley682. Pet., 52-54. In other words, Petitioner does not propose that it would be obvious to correct inaccurate matches, but only that it would be obvious to infer matches for “unmatched objects.” *Id.*, 53.

Consequently, despite the conjunctive “or” in Claim [1.5] and [9.4], Petitioner must show that Herley682 discloses an *indication of the absence of a respectively likely match* to be consistent with its obviousness theory regarding Herley682-Seet as applied to *scrubbing*.

In reference to Figure 2 of Herley682, Petitioner argues that the metadata/fingerprint database 235 of Herley682 is the *electronic database*. Pet., 46.

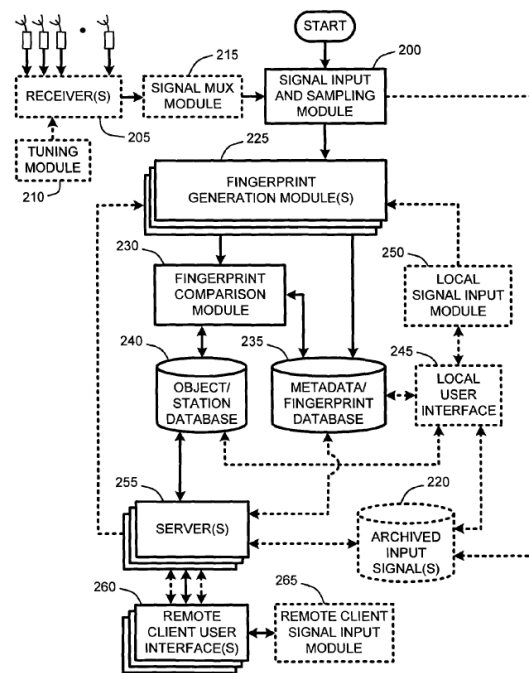


FIG. 2

Petitioner then argues that a “POSA would also have understood that these teachings indicate that Herley682’s **object database 240** would include multiple entries therein, e.g., one for each song played on the station,” and further that a “POSA would have understood or at minimum found it obvious that, at least most of the time ... these multiple entries would ... include *at least one content identifier* and

an indication of the absence of a respective likely match, e.g., an ‘unknown object’ as discussed above for element [1.5] part (ii).” *Id.*, 48. In other words, Petitioner argues that Herley682 discloses or renders obvious that its object database 240 would include *an indication of the absence of a respective likely match* as claimed.

Petitioner is wrong. Herley682 teaches that if the fingerprint extracted from a sample does not match any entries in the metadata/fingerprint database 235, that “fingerprint is stored **to the metadata/fingerprint database** as an ‘unknown object entry.’” Ex. 1005 ¶[0088]; *see also id.* ¶[0164]. Herley682 then explains that “[i]f any subsequent occurrences of an object having a matching fingerprint are identified, **then both the first instance of the unknown object, and each subsequent instance, will then** be added to the object/station database 240 along with any statistical information that is available for that object.” *Id.* ¶[0088]. Thus, the “unknown object” is only stored in the object database 204 *after* it has been matched to a subsequent or prior fingerprint in the metadata/fingerprint database 235. *Id.* In other words, under Petitioner’s mapping, the fact that the “unknown object” is stored in object/station database 240 is *an indication of a match between a respective audio data sample and an audio data representation in the electronic database*. Ex. 2001 ¶¶108-109. This is because the “unknown object” is only sent to the object database 240 if it **does match** a fingerprint in the fingerprint database 235 (the alleged *electronic database*). *Id.* ¶110.

This is the exact opposite of what the claim limitation requires—*an indication of the absence of a respective likely match between a respective audio data sample and an audio data representation in the electronic database*. This makes perfect sense in the context of Herley682, which wants to avoid including in its object database 240 unknown objects that are associated with “noise” that will never recur (e.g., a radio disc jockey talking in between songs). *Id.* To avoid including “noise,” Herley682 instead ensures that there are multiple matched fingerprints indicating the identification of an object of interest within the fingerprint database 235 before sending the “unknown object” to the object database 240. *Id.*

Petitioner is thus wrong that the “unknown objects” within object database 240 meet this claim limitation. *Id.* ¶ 111. And while Petitioner argues that a POSA would have “found it obvious,” Petitioner’s obviousness argument is conclusory and unexplained, and further ignores the fact that Herley682 is purposefully designed to originally store its “unknown objects” in the separate and distinct fingerprint database 235 and only send them to the object database 240 after they match a fingerprint in database 235. Petitioner does not provide any explanation or reason it would be obvious to modify Herley682 to initially store its “unknown objects” in the object database 240 in the absence of a match in the fingerprint database 235 as expressly taught. Indeed, as discussed above, Herley682 purposefully does not initially store such “unknown objects” in the object database 240 because it wants

its object database to be associated with repeating content (e.g., radio songs, not radio disc jockey chatter). *Id.*

Apparently appreciating this flaw in Herley682, Petitioner argues that “this feature would have been obvious in view of Seet” because “Seet expressly teaches a database of samples that include multiple entries, both identified samples and unidentified samples.” Pet., 48-49. Petitioner again fails to explain why a POSA would have been motivated to modify Herley682’s object database 240 to include the “unmatched samples” of Seet when Herley682 purposefully only stores its “unknown objects” in the object database 240 after matches are made to fingerprints in fingerprint database 235. It simply makes no sense for Herley682 to store such “unknown objects” in object database 240 without first matching them to fingerprints in fingerprint database 235, as expressly taught. Ex. 2001 ¶112.

V. PETITIONER FAILS TO DEMONSTRATE THAT THE COMBINATION OF HERLEY682 AND SEET WAS OBVIOUS.

In addition to Petitioner’s failure to show that Herley682 discloses or renders obvious several claim limitations, Petitioner’s proposed combination of Herley682 and Seet is also flawed. In attempting to combine Herley682 and Seet, Petitioner ignores fundamental differences in their operation that makes the proposed combination illogical. Because it was not obvious to combine Herley682 and Seet as proposed, Petitioner cannot carry its burden under any ground.

A. Herley682 and Seet are Fundamentally Different

Turning first to Herley682, in reference to Figure 2 the system captures radio or television broadcasts by directly tuning receiver 205 to a broadcast station. Ex. 1005 ¶¶[0075], [0084]. Once the receiver 205 receives one or more radio or television broadcast signals, they are then passed to the signal input and sampling module 200 to generate samples, which are then passed to fingerprint generation module(s) 225 to create fingerprints. *Id.* ¶¶[0067], [0084].

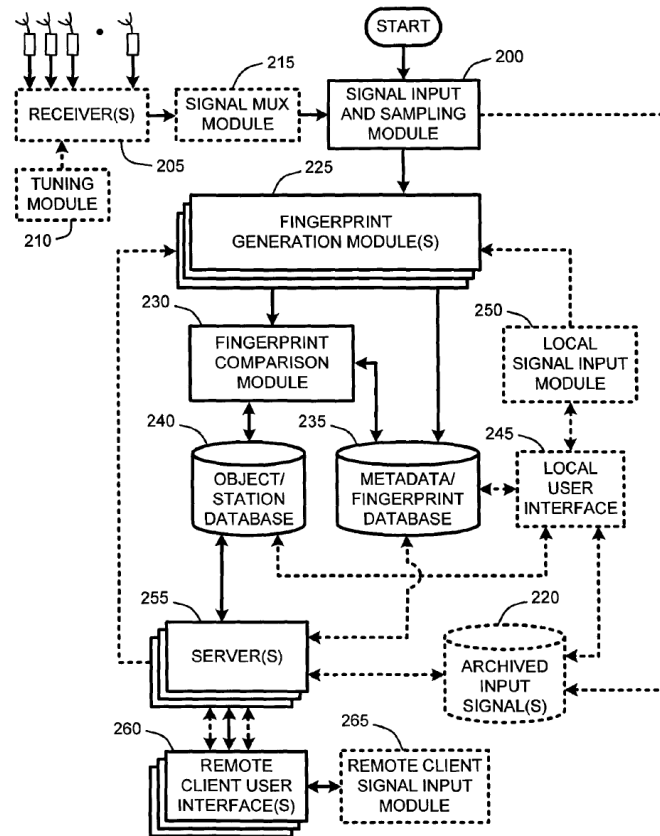


FIG. 2

The calculated fingerprints are then provided from fingerprint generation module 225 to fingerprint comparison module 230. Ex. 1005 ¶[0086]. Fingerprint

comparison module 230 searches a metadata/fingerprint database 235 to determine if there is a match between the extracted fingerprint and pre-computed fingerprints stored in database 235. *Id.* “If a match is identified ... then the sampled portion of the input signal from which the fingerprint was extracted is identified as belonging to an **object of interest** corresponding to the fingerprint and metadata in the metadata/fingerprint database 235.” *Id.* “This information, including the metadata, is stored in an **object/station database 240.**” *Id.* Herley682 explains, “for example, in the context of an audio signal, such objects include, songs, jingles, advertisements, station identifiers, program ‘signature tunes’, emergency broadcast signals, speech from one or more known speakers, etc.” *Id.* ¶[0012]; *see also id.* ¶[0004].

Herley682 further teaches that “where trace fingerprints generated from samples do not match any fingerprints in the database, those trace fingerprints are added as fingerprints to the fingerprint database as ‘unknown objects.’” *Id.* ¶[0016]; *see also id.* ¶[0088]. The boundaries of the “unknown object” (e.g., song) are then determined (*Id.* ¶[0016]), and when two or more occurrences of the “unknown object” are identified based on a fingerprint match in database 235, that object is then stored in the object database 240 as an “unknown object.” *Id.* ¶[0088]-[0089]. Thus, each “object” in the object database (whether known or unknown) corresponds to an object of interest (e.g., a complete song, jingle, or ad). Ex. 2001 ¶116.

Herley682 explains that the “unknown objects can be manually identified by

a user via a local user interface 245, or alternately, via a remote client user interface 260” or a “more authoritative and up-to-date fingerprint database” can be queried. Ex. 1005 ¶¶[0089], [0017]. Herley682 is thus premised on having a database of known objects from which to match its fingerprints. Ex. 2001 ¶¶114-117. To the extent its matching results in unknown objects, either a human reviewer simply reviews those objects for manual identification or a more robust fingerprint database is queried. *Id.* ¶117.

In stark contrast to Herley672, Seet does not rely on a database of fingerprints associated with known content. *Id.* ¶118. Instead, the sole purpose of Seet is to create its own database of known audio content to avoid the need to “[g]ain[] access to the source audio and then fingerprinting it and inserting it into a database,” which is described as “a complex process from a licensing and update management process.” Ex. 1019, 4.

To accomplish this, Seet teaches using the same audio signal that is to be identified, but from a previous period. *Id.* For example, for television or radio monitoring, Seet proposes “that the previous period (i.e. day or day-period) for that particular station (or genre, or group of similar stations), be fingerprinted, and inserted into a fingerprint database.” *Id.* During the subsequent period, “matches are then performed against this database of previous samples, and if matched, then the identifier (or identifiers if multiple-matches are found) and a time-stamp are

recorded.” *Id.*

An additional process follows where Seet “attempts to group audio together by examining relative alignment of identified sequential samples against the previous day samples in the database.” *Id.*, 5. Seet teaches that this establishes a relationship between the previous period’s database and the current period’s database such that it can be assumed that “the portions of the previous period database that were matched are repeated content like advertisements, promotions, songs or the like.” *Id.* This allows a human reviewer to “manually listen to just the series of identified samples to add meta-data (like ad name, or artist, and title information) to the series of samples. *Id.*; Ex. 2010 ¶¶119-120.

Figure 1 of the Seet Provisional is reproduced below:

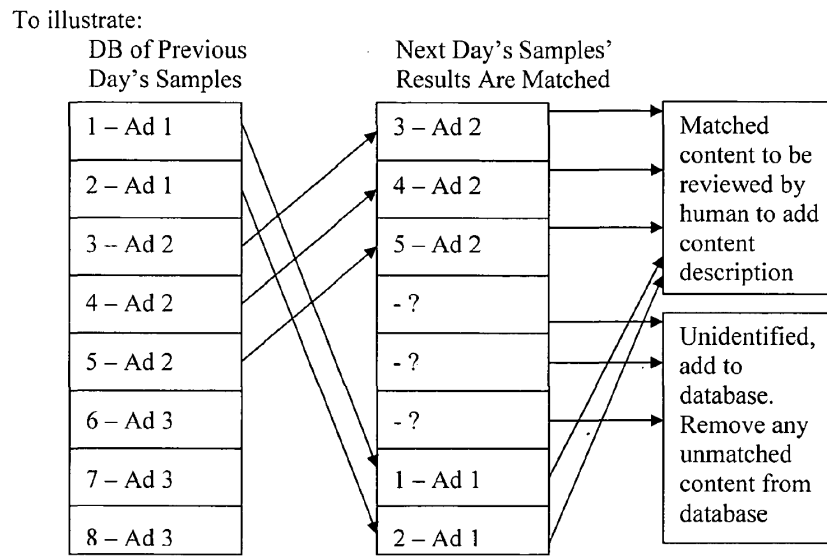


Figure 1. Auto-correlation Example

Importantly, the Seet Provisional makes clear that there is no database of known

content, but rather that the content for the samples is identified by a human reviewer after the relationship of matching samples (without content identifiers) has been established. Ex. 1019, 4-5; *see also* Ex. 1006 ¶[0029] (“Although the system does not initially know the identity of each sample, the identity is shown in the figure for explanation purposes.”). In other words, the labels (Ad #1, Ad #2, Ad #3) in Figure 1, and the associations that they imply, are unknown to Seet’s system. Ex. 2001 ¶121. Seet instead matches samples without knowing their content identity, groups them based on their time-aligned relationship, and then a user manually identifies the content of the samples (e.g., by adding metadata to the database). *Id.* While Seet does refer to “identifiers” when discussing Figure 1, that is simply a reference to the “unique identifiers” assigned to the samples (e.g., the numbers “1-”, “2-”, etc.) not the identifiers of the content of those samples, which is only added later via manual review by a human. *Id.* ¶122 (citing Ex. 1019, 4-5 (“This could be accomplished by dividing up the recorded audio for the day into small (~4 second) increments and storing each increment with a unique identifier.”)). Thus, the purpose of Seet’s system is to enable the creation of a database of known content by manual review, and to make it easier to do so by grouping matched samples (with unknown content), which makes it easier and quicker for the human reviewer to manually identify content. *Id.*

Although Seet does teach “inferring” matches, it does not do so in the manner

described by Petition. Figure 2 (reproduced below) may, at first glance, appear to depict inferring content identifiers. However, it is actually only inferring sample matches without knowing the identity of the content, as explained above.

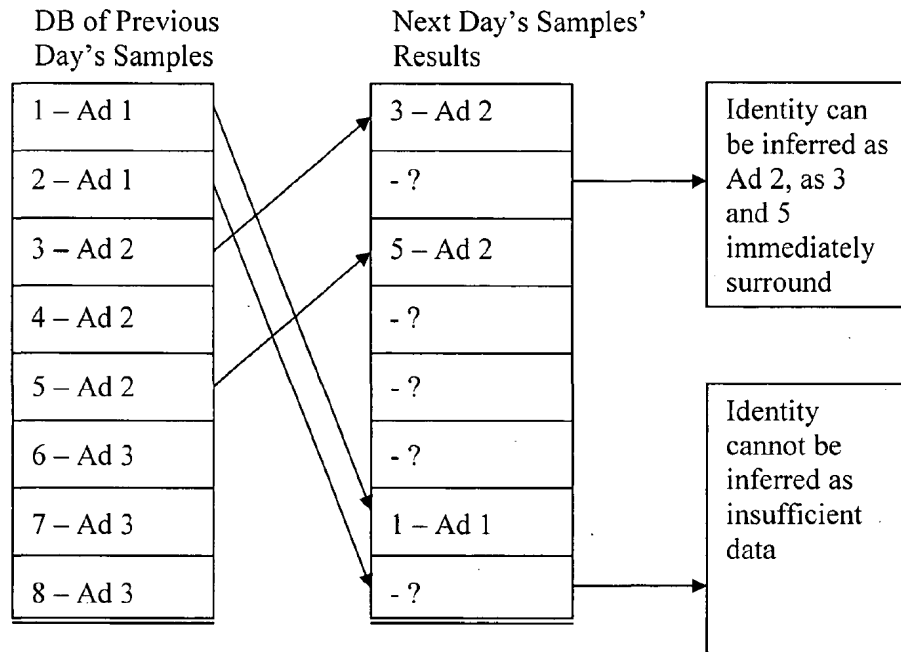


Figure 2. Auto-correlation Identity Inference Example

In other words, in the example shown, Seet is merely inferring that the sample for “?” between the sample for “3 –” and the sample for “5 –” is fingerprint “4 –” from the previous day. *Id.* ¶123. It is not inferring the *identity* of the content for intervening sample “?” because, as explicitly taught by Seet, it does not know the identity until after a human user manually adds it to the database. *Id.* Seet thus does not rely on a database of known content and, even though it does “infer” matches, it does not infer the identity of those matches. *Id.*

Nor does Seet operate at the “object” level, as in Herley682. Instead, Seet

operates at the “sample” level and relies on the sampling of repeating signals to manually create a database of known content. *Id.*

B. The Proposed Combination is Unworkable

Petitioner proposes modifying Herley682 to rely on Seet’s inferential sample matching, arguing that it would be obvious to infer the identity of “unknown objects” in Herley682’s object database 240. Pet., 52-53 (“A POSA would have thus been motivated to identify and correct missing data in order to obtain a complete and accurate data set **in the object/station database 240**—a teaching that is explicitly taught by Seet.”).

Petitioner disregards the fact that Herley682 is operating at the “object” level, whereas Seet is operating at the “sample” level, instead falsely suggesting that the objects of Herley682 are analogous or interchangeable with the samples of Seet. Pet., 32-33. As previously discussed, an “unknown object” in object database 240 of Herley682 corresponds to an object of interest (e.g., an entire, unknown song), not merely a sample portion associated with part of an object of interest. Ex. 2001 ¶125 (citing Ex. 1005 ¶[0016] (explaining that the boundaries of the object are determined before storing it in the object database)). Consequently, when Herley682’s “unknown objects” are stored in object database 240, there is no expectation or reason for there to be temporal consistency for those objects in the database. *Id.* Moreover, given that the “objects” correspond to complete pieces of content, not

individual samples associated with a piece of content, the sample inference methodology of Seet would not work for identifying Herley682's "unknown objects." *Id.*

Seet is premised on having temporal consistency for its individual, repeating audio samples so that it can infer a sample match based on surrounding sample matches. *Id.* ¶126. Seet relies on the fact that a repeating song will have a series of fingerprints within it that can be relied upon to repeat in the same sequential order. *Id.*

Even if one were to accept that the objects in Herley682's object database are sequentially ordered,¹¹ there would be no expectation that the sequence of objects (e.g., songs) would repeat. *Id.* ¶127. Seet is premised on not only having temporal alignment and consistency between the signal being analyzed and the previous day's signal, but also analyzing those signals at the **more specific sample-level** to inferentially match fingerprints. *Id.* In other words, while the sequence of the surrounding samples in Seet is expected to be the same (because it is analyzing individual samples associated with a single song, for example), the sequence of the surrounding objects (e.g., songs) in Herley682 is not expected to be the same. *Id.* Indeed, radio stations do not play the same songs, ads, etc. in the same sequence day-

¹¹ As explained *supra* IV.B.4, there was no reason or motivation to rely on a play stream of sequentially ordered content identifiers in Herley682.

by-day, making it impossible to somehow infer “unknown objects” in Herley682 based on Seet. *Id.* Thus, because the “objects” in Herley682’s object database are not stored at the sample level, Seet’s inferential sample matching methodology would not work. *Id.*

Further, a POSA would not have been motivated to rely on Seet’s inferential matching with Herley682, because Seet’s methodology is premised on the signal being time-aligned with the signal from the previous day. *Id.* ¶128. Petitioner simply assumes that Seet’s inferential matching method would have been recognized as workable with Herley682’s system with virtually no modification. However, Petitioner identifies nothing in Herley682 that indicates or suggests that it is analyzing repeating signals or that, even if it was, those signals are time-aligned as required pursuant to the teachings of Seet. Seet’s inferential method is premised on this time-alignment, which is simply not taught or suggested by Herley682. *Id.*

Petitioner ignores this fact so that it can justify combining Herley682 and Seet as if their systems are similar. However, a POSA would have recognized that Seet is premised on time-alignment of a repeating signal, and that modifying Herley682 to inferentially match as taught by Seet would require a fundamental redesign of Herley682’s system. *Id.* Petitioner does not address or discuss this redesign, but instead improperly assumes that such a modification would be simple without explanation.

Petitioner also fails to explain why a POSA would rely on Seet’s inferential matching when it relies on a repeating signal and time-alignment of samples based on the signal. In other words, why would a POSA believe that the inferential matching of Seet—which assumes this time-alignment between individual sequential samples—would help to identify “unknown objects” in Herley682’s object database given that those objects are not stored in a time-aligned or sequential fashion? Petitioner does not address this fundamental question. Pet., 32-34; Ex. 2001 ¶129.

Petitioner further argues that “[a] POSA would have been motivated to use Seet’s teachings of inferring matches to identify Herley682’s unmatched objects at least because a POSA would have been motivated to automate that which is done manually because it would be faster, a stated goal of Herley682.” Pet., 32, 53. However, Seet also relies on **manual** review of unknown content just like Herley682 does for objects that it is unable to identify content for. Ex. 2001 ¶130. While Seet is able to infer fingerprint matches (assuming time-aligned sample matching), as discussed above, the identity of the content associated with those fingerprints is still not known. *Id.* Seet merely infers that an unmatched fingerprint does in fact match a prior day’s fingerprint, but it does not infer or know the content identity for that fingerprint. *Id.* Instead, a human reviewer must manually review those matching fingerprints to identify their content. *Id.* Consequently, a POSA would not have been

motivated to rely on Seet’s inferential matching with Herley682 to “automate” the identification of unknown content, because Seet itself also relies on manual review to identify unknown content. *Id.* Even if Seet’s inferential sample matching could be combined with Herley682, it would not solve the purported problem proposed by Petitioner of having to manually review to identify unknown content. *Id.*

VI. Petitioner’s Challenges Against Specific Dependent Claims Lack Merit.

The Board need not analyze the challenges to the dependent claims given that Petitioner fails to carry its burden with respect to any independent claim. Nevertheless, Patent Owner briefly addresses arguments proffered by Petitioner and its expert regarding certain dependent claims.

A. Dependent claims 4 and 12 are patentable.

Claims 4 and 12 recite wherein *scrubbing the raw play stream further comprises using audience data as part of determining whether to change a result of the sequence of content of identification results*. In Ground 2, Petitioner contends that this limitation is taught by the combination of Herley682, Seet and Herley684. Pet., 71.

Petitioner begins by acknowledging that the Specification teaches that “audience data” may include “age, gender, and other demographic information **about the audience member,**” “media consumption patterns **of the audience**

member,” or “**location of the audience member.”** *Id.* Thus, Petitioner appears to acknowledge that “audience data” is, at a minimum, data about an audience member or an audience member’s consumption habits. Ex. 2001 ¶131.

Despite this acknowledgement, Petitioner and its expert turn around and argue that information about the genre of music being played by a broadcast station somehow constitutes *audience data*. Pet., 72. However, there is a fundamental difference between knowing the genre of music *a particular audience member typically listens to* (i.e., an example of *audience data*) and simply knowing the genre of a song being played on the radio. Ex. 2001 ¶132. The former is information ***about an audience member***, where the latter is simply information about the type of song being broadcast on a channel, which provides no insights about the audience members listening to that song. *Id.*

None of Herley682, Seet, or Herley864 can plausibly teach using *audience data* to perform *scrubbing*, because all three of those references are broadcast-channel-centric measurement systems. *Id.* ¶133. All three focus on identifying content being played by a broadcast channel (e.g., a radio station)—those systems have no insights whatsoever into the audience listening to that content. While Petitioner cites to portions of Herley682, Seet and Herley684 for using *audience data* to *scrub*, those citations do no support that assertion.

Petitioner first discusses Herley682, arguing that it: (1) describes identifying

its “unknown objects” is by “automatically querying a more authoritative and up-to-date fingerprint database”; (2) teaches that “when listening to a particular channel, the fingerprints of previously identified objects from that channel are searched first in the database, thereby speeding the search;” and (3) describes that “when listening to a station that plays pop hits from the 1980’s repetitively it makes sense to search the fingerprints of songs previously identified on that station, before searching the larger database.” Petition, 71-72. Petitioner fails to explain how this is somehow using *audience data* to scrub—it clearly is not. At most, these statements merely teach using fingerprints for songs previously played on a station to identify future songs on that same station. Ex. 2001 ¶134.

Petitioner next argues:

Herley864 similarly teaches limiting searches to results of a particular music genre (as opposed to results from a particular station) as a way to reduce search and comparison times. With this teaching in mind, and in order to “speed[] the search” when querying the additional database for identifying “unknown objects” in Herley682, it would have been obvious to likewise use Herley682’s teaching of first searching previously identified objects from the channel, as modified by Herley864 to first search objects of a user’s preferred or typical genre (*using audience data*), when querying this additional database.

Pet., 72-73. However, neither Petitioner nor its expert cite any evidence from Herley682 or Herley864 showing that either is capable of relying on an *audience*

member's “preferred or typical genre” to perform the claimed *scrubbing*. Indeed, the “user” referenced by Petitioner would simply be the person operating the media measurement system that is identifying media content—not the audience member consuming the content. Ex. 2001 ¶135. Even if a user was selecting “genre” as a search feature or filter, that selection is not based on the media consumption habits of the user. *Id.* Consequently, Petitioner fails to identify any teaching in the asserted prior art where *audience data* is used to perform *scrubbing*.

B. Dependent claims 7 and 15 are patentable.

Claims 7 and 15 recite *wherein an audio data representation of the plurality of audio data representations includes a plurality of signal landmarks*. Petitioner acknowledges that Herley682-Herley864-Seet fail to teach this limitation, arguing in Ground 3 that it would have been obvious to include landmarks based on Wang060. Pet., 73-74.

In reference to Figure 2 of Herley682 (reproduced below), Petitioner identifies *the plurality of audio data representations* as Herley682's trace fingerprints calculated by fingerprint generation module 225 (green). Petition, 41.

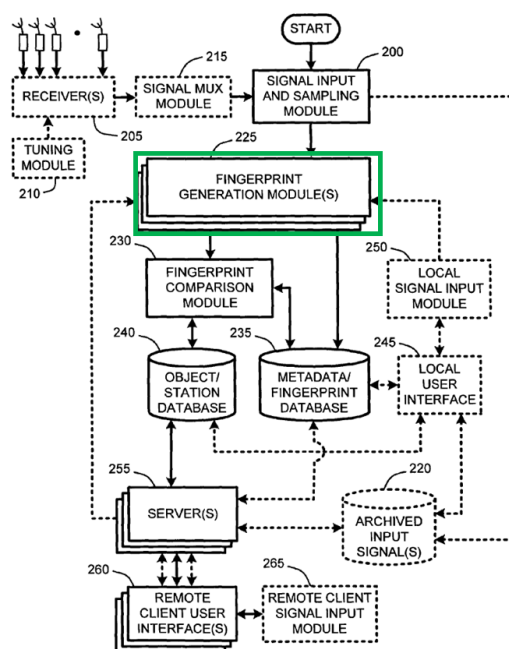


FIG. 2

Petitioner is thus corresponding *an audio data representation* recited in this claim to one of those fingerprints. Petitioner then argues that it would have been obvious to modify Herley682 to include landmarks as claimed. Pet., 74-75.

An inescapable problem with Petitioner's theory is that Wang060 does not teach or disclose including landmarks *in* fingerprints. Ex. 2001 ¶¶138-139. The claim recites *an audio data representation ... includes a plurality of signal landmarks*. Because Petitioner contends that the *audio data representation* is Herley682's fingerprint, Petitioner must thus show that, under its proposed theory of invalidity, the prior art discloses a fingerprint that *includes* landmarks. *Id.* ¶139. Petitioner fails to do so.

Even accepting that Wang060 teaches signal landmarks, those signal

landmarks are not included in, or part of, fingerprints. *Id.* ¶140. As Petitioner acknowledges, Wang060 teaches that “Landmarks occur at specific timepoints *of the sound* and have values in time units offset from the beginning of the file, while fingerprints characterize the sound *at or near* a particular landmark.” Pet. 74 (citing Ex. 1008, ¶[0049], Fig. 4). Wang060 further explains that “landmarks are first computed, and then fingerprints are computed *at or near* the landmarks.” Ex. 1008, ¶[0048], Fig. 3. Thus, the landmarks are not included in, or part of, the fingerprints. Ex. 2001 ¶140. Rather, a landmark is data that is associated with, but external to, the fingerprints. *Id.* Indeed, Wang060 further explains that “An index set for a given sound recording is a list of pairs of values (fingerprint, landmark)” —the index set is thus what associates the fingerprint with the landmark. Ex. 1008 ¶[0074]. In other words, the fingerprint and landmark are two separate, distinct things. Ex. 2001 ¶140. Consequently, Wang060 does not disclose including landmarks in fingerprints (the alleged *an audio data representation*) as required to show unpatentability under Petitioner’s invalidity theory. Because the combination of art does not disclose this limitation even if combined as proposed, Petitioner cannot carry its burden with respect to claims 7 and 15. *Id.* ¶141.

VII. CONCLUSION

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

Dated: November 14, 2024

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 13,995 words as calculated by the “Word Count” feature of Microsoft Word for Office 365, the program used in creating it.

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Stephen D. Zinda