

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LINKPLAY TECHNOLOGY INC.,
Petitioner,

v.

SONOS, INC.,
Patent Owner.

Case No. IPR2025-00511
U.S. Patent No. 9,213,357

PATENT OWNER SONOS, INC.'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	OVERVIEW OF THE '357 PATENT	4
	A. Overview of the Technology of the '357 Patent.....	4
	B. Overview of the Reexamination of the '357 Patent.....	11
	C. Level of Skill of a POSITA	13
III.	OVERVIEW OF THE PETITION'S FLAWS	14
IV.	THE RICHENSTEIN GROUNDS	18
	A. Overview of Richenstein.....	19
	B. Richenstein's Deficiencies Regarding [1.1.1]-[1.1.2]	26
	1. "Vehicle Infotainment Embodiments"	27
	2. "Home Entertainment Embodiment"	33
	C. Richenstein's Deficiencies Regarding [1.2.2]	36
	1. "Timing Information" of Richenstein [0066]-[0067]	38
	2. Calibration "Timing Data"	45
	3. MOST Standard "Time Stamp".....	46
	D. Richenstein's Deficiencies Regarding [1.2.3]	47
	1. "Vehicle Infotainment Embodiments"	48
	2. "Home Entertainment Embodiment".....	51
	3. The Petition's Sparse Treatment of Limitation [1.2.3].....	52
V.	THE CHATTERTON GROUNDS	55
	A. Overview of Chatterton.....	56
	B. Chatterton's Deficiencies Regarding [1.1.1]-[1.1.2]	58
	C. Chatterton's Deficiencies Regarding [1.2.2]	64
	D. Chatterton's Deficiencies Regarding [1.2.3]	68
VI.	CONCLUSION	70

TABLE OF AUTHORITIES

<i>Alacritech, Inc. v. Intel Corp.</i> , 966 F.3d 1367 (Fed. Cir. 2020).....	16, 32
<i>Apple Inc. v. Parus Holdings, Inc.</i> , No. IPR2022-00948, 2022 WL 17254066 (PTAB Nov. 28, 2022)	19
<i>Apple Inc. v. Samsung Elecs. Co.</i> , 839 F.3d 1034 (Fed. Cir. 2016)	13
<i>Belden Inc. v. Berk-Tek LLC</i> , 805 F.3d 1064 (Fed. Cir. 2015)	17, 62
<i>Black & Decker, Inc. v. Positec USA, Inc.</i> , 646 F. App'x 1019 (Fed. Cir. 2016)	17, 32
<i>Blast Motion, Inc. v. Newspin Sports, LLC</i> , No. IPR2019-00536, 2019 WL 2929978 (PTAB July 8, 2019).....	18
<i>Ex Parte Noel Wayne Anderson</i> , Appeal No. 2014-001139, 2016 WL 3569637 (PTAB June 28, 2016).....	42
<i>Finisar Corp. v. DirecTV Grp., Inc.</i> , 523 F.3d 1323 (Fed. Cir. 2008).....	15
<i>Homeland Housewares, LLC v. Whirlpool Corp.</i> , 865 F.3d 1372 (Fed. Cir. 2017)	68
<i>InTouch Techs., Inc. v. VGO Commc'ns, Inc.</i> , 751 F.3d 1327 (Fed. Cir. 2012)	17
<i>Net MoneyIN, Inc. v. VeriSign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008).....	15, 62
<i>Personal Web Techs., LLC v. Apple, Inc.</i> , 848 F.3d 987 (Fed. Cir. 2017).....	16
<i>Tableau Software, LLC v. iCharts, LLC</i> , No. IPR2024-01389, 2025 WL 1402790 (PTAB May 14, 2025).....	19, 46, 61
<i>Tiktok Inc. v. Ntech Props., Inc.</i> , No. IPR2024-01339, 2025 WL 607860 (PTAB Feb. 25, 2025).....	18
<i>Volkswagen Grp. of Am., Inc. v. Stratosaudio, Inc.</i> , No. IPR2021-00719, 2021 WL 5195263 (PTAB Oct. 22, 2021)	42

EXHIBIT LIST

Exhibit	Description
2001	<i>“An Audio Hub that Actually Works, Easily,”</i> PC Magazine (March 22, 2005)
2002	<i>“Tiny \$199 Sonos Play:1 speaker fills a room with wireless tunes,”</i> NBC News (October 14, 2013) (available at https://www.nbcnews.com/technolog/tiny-199-sonos-play-1-speaker-fills-room-wireless-tunes-8C11387714)
2003	Plaintiff Sonos, Inc.’s Objections and Responses to Linkplay’s First Set of Interrogatories (Nos. 1-17) (July 8, 2024) (excerpts)
2004	<i>Sonos, Inc. v. D&M Holdings Inc.</i> , Jury Trial Transcript from Dec. 11, 2017, Nicholas Millington Direct Testimony (excerpts)

I. INTRODUCTION

The Petition takes a scatter-shot approach: cramming in six grounds premised on two primary references, Richenstein and Chatterton, with numerous (often incomplete) theories of invalidity. But neither Richenstein nor Chatterton is related to the same problem that the '357 Patent addresses—namely, synchronizing playback of audio by independently-clocked playback devices that are communicatively coupled over a data network—and both fail to teach or suggest a vast majority of the elements of the independent claims (not to mention the dependent claims).

For example, neither Richenstein nor Chatterton teaches or even suggests the starting point of the independent claims: a “*first playback device*”¹ operable to “*receive, from a network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN), control information comprising an address identifying a location of audio information available at an audio information source, wherein the audio information source is outside of the LAN.*” The Petition’s first Richenstein theory fails to identify “*an audio information source... outside of the LAN,*” and the second Richenstein theory improperly relies on Petitioner’s expert manufacturing a scenario

¹ For clarity, claim language is in italics and within quotation marks throughout

not suggested by Richenstein itself. As to Chatterton, the Petition's first theory fails to identify "*a network device,*" and the second Chatterton theory improperly relies on speculation about what a POSITA could have done with Chatterton's disclosed devices.

As another example, neither Richenstein nor Chatterton teaches or suggests critical functionality of the independent claims: the "*first playback device*" operable to "*transmit, to a second playback device, [obtained] audio information [and] playback timing information associated with the audio information,*" where "*playback timing information*" refers to information indicating when the audio information is to be played back. None of the Petition's three Richenstein theories identifies anything resembling when audio information is to be **played back**. And by the Petition's own characterization of Chatterton's disclosure, the single Chatterton theory fails to identify anything that could be considered information indicating when audio information **is to be** played back.

As a final example, neither Richenstein nor Chatterton teaches or suggests the heart of the claims: the "*first playback device*" operable to "*play back... the audio information in synchrony with the second playback device....*" In both the Richenstein and Chatterton grounds, the purported "*first playback device[s]*" are effectively media servers that transmit audio to other devices, and those other devices play back the audio. But the plain language of the '357 claims is clear that

“transmitting... the audio information” is a separate and distinct function from *“playing back... the audio information.”*

Since its primary references are not even in the right ballpark, Petitioner and its expert take great artistic liberties in characterizing the actual disclosures of these references and invite the Board to speculate about aspects of Richenstein and Chatterton that are not described in any meaningful detail by those references and about what a POSITA might have done with Richenstein or Chatterton in combination with other references. But such an invitation does not evince a reasonable likelihood of prevailing.

Further, despite the PTAB previously confirming the patentability of several of the challenged claims in view of compelling objective evidence of non-obviousness, none of the Petition’s four obviousness grounds even attempts to address any of the evidence of non-obviousness previously before the PTAB or any of the additional evidence of non-obviousness disclosed to Petitioner in the parallel district court litigation. As such, the Petition’s four obviousness grounds are legally deficient on this basis alone.

At bottom, the Petition fails to establish a reasonable likelihood that Petitioner would prevail with respect to at least one claim of the ’357 Patent and should therefore be denied.

II. OVERVIEW OF THE '357 PATENT

A. Overview of the Technology of the '357 Patent

The '357 Patent stems from Sonos's foundational non-provisional patent filing on April 1, 2004. *See* Ex.1001, code (63). The '357 Patent discloses and claims core aspects of Sonos's acclaimed multiroom commercial products that were first released in January 2005, numerous years before the industry would eventually attempt to catch up to Sonos's innovative product offering. In particular, the '357 Patent discloses and claims aspects of Sonos's synchronous playback technology developed by inventor, Nicholas Millington.

As explained in the '357 Patent, Mr. Millington recognized that it is "desirable to maintain synchrony of operations among a plurality of independently-clocked digital data processing devices in relation to, for example, information that is provided thereto by a common source." *Id.*, 1:48-51. For example, in systems where audio information for the same audio program is provided to a plurality of independently-clocked "audio playback devices" that are distributed throughout a residence, an office, or the like, it is desirable for the playback devices to play back the same audio in synchrony. *Id.*, 1:51-2:11. However, Mr. Millington recognized that playing back the same audio on multiple, independently-clocked playback devices in synchrony presents several challenges.

One challenge is that “[s]mall differences” in the devices’ “start times and/or playback speeds can be perceived by a listener as an echo effect, and larger differences can be very annoying.” *Id.*, 2:12-14. Mr. Millington recognized that these “[d]ifferences can arise because [of] a number of reasons, including delays in the transfer of audio information over the network” and further that “[s]uch delays can differ as among the various audio playback devices for a variety of reasons, including where they are connected into the network, message traffic and other reasons....” *Id.*, 2:15-20.

Another challenge is that “[w]hen an audio playback device converts the digital audio information from digital to analog form, it does so using a clock that provides timing information,” and “[g]enerally, the audio playback devices that are being developed have independent clocks....” *Id.*, 2:21-28. In operation, such independently-clocked playback devices cannot be expected to “clock[] at precisely the same rate....” *Id.*, 2:25-26. And as a result, such independently-clocked playback devices could not play back audio in synchrony. *Id.*, 2:26-28.

To overcome these challenges, Mr. Millington developed technology “for synchronizing operations among a number of digital data processing devices that are regulated by independent clocking devices” with the invention being “described in connection with a plurality of audio playback devices that receive digital audio information that is to be played back in synchrony....” *Id.*, 2:32-40.

For instance, the '357 Patent discloses a “network audio system” comprising “digital data processing devices” that connect to a data network and are configured to process and output audio. *Id.*, 2:32-35, 3:41-48. The specification refers to these “digital data processing devices” as “zone players” or “playback devices.” *Id.*, 2:38-40, 3:43-48.

Figure 1 of the '357 Patent provides an illustration of an example of this “network audio system”:

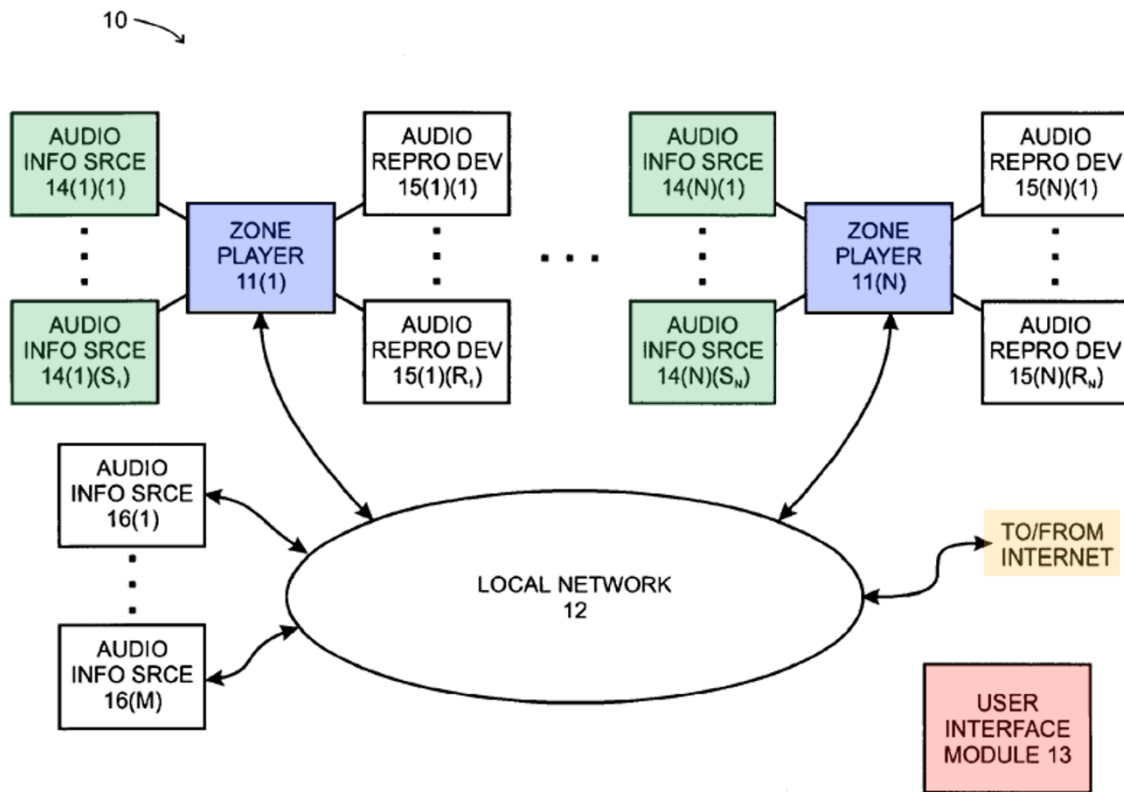


FIG. 1

Id., FIG. 1 (annotated).

In this “network audio system,” each “zone player” (in blue, above) is configured to communicate over a “local network” with various other devices,

including one or more other “zone players” and one or more “user interface modules” (in red, above). *Id.*, 3:41-48.

Each “user interface module” is configured to control the “zone players” in the “network audio system” over the “local network” and generally enables a user to interact with the “network audio system,” such as by allowing the user to select a particular “audio information source” from which one or more “zone players” are to playback audio. *Id.*, 3:46-48, 5:32-52, 7:42-45.

The ’357 Patent describes two general types of “audio information sources”:

- (1) an “audio information source” that is inside of the “local network,” such as an “audio information source 14(n)(s)” that is “directly connected” to a “zone player” (e.g., CD player, record player/turntable, etc.) (in green, above), and
- (2) an “audio information source” that is outside of the “local network” (not depicted in FIG. 1), such as an “audio information source” available over a wide area network like the Internet (in orange, above). *Id.*, 3:48-51, 4:2-13, 4:45-5:3, 5:6-19.

Another manner by which a “user interface module” enables a user to interact with the “network audio system” is by allowing the user to “establish[] and modif[y] dynamically” “synchrony groups” within the “network audio system.” *Id.*, 5:32-6:30. The ’357 Patent explains that two or more “zone players” can enter into a “synchrony group” for purposes of playing the same audio program synchronously.

Id., 5:53-6:9 (“[T]he term ‘synchrony group’ will be used to refer to a set of one or more zone players that are to play the same audio program synchronously.”).

The ’357 Patent describes different roles or responsibilities that are assigned to “zone players” in connection with a given “synchrony group.” *Id.*, 6:46-58, 7:55-60. In example embodiments, the ’357 Patent describes three roles in connection with a given “synchrony group”: (1) a “slave device” role, (2) a “master device” role, and (3) an “audio information channel device” (AICD) role.

A “zone player” of a “synchrony group” assigned the “slave device” role abides by the instructions provided by the “zone player” assigned the “master device” role of the “synchrony group.” *Id.*, 8:16-20, 13:1-28.

In general, the “zone player” assigned the “master device” role of the “synchrony group” is primarily responsible for interfacing with any controller (“user interface module 13”) on behalf of the “synchrony group” and facilitates control of the operations of the one or more “zone players” assigned the “slave device” role. *Id.*, 8:16-20, 8:56-9:19.

Further, in general, the “zone player” assigned the AICD role for a “synchrony group” is responsible for obtaining audio information from an audio information source and then providing to the “zone players” of the “synchrony group” assigned the “master” and “slave” roles the audio information and “playback timing information” that indicates when the audio information is to be played back. *Id.*,

2:63-3:14, 7:66-8:11, 11:14-20, 20:30-42. The “zone player” assigned the AICD role for the “synchrony group” is also responsible for providing “clock timing information” to the “zone players” of the “synchrony group” assigned the “master” and “slave” roles. *Id.*, 2:63-3:14, 8:5-11, 11:25-47. The “zone players” of the “synchrony group” are able to playback the same audio program synchronously based on the audio information, “playback timing information,” and “clock timing information” provided by the “zone player” assigned the AICD role. *Id.*, 8:5-11, 11:47-58, 22:65-25:25.

As noted above, each of the “slave device,” “master device,” and AICD roles is assigned to a “zone player.” *Id.*, 7:60-66. In many cases, a single “zone player” is assigned both the “master device” and AICD roles for a given synchrony group. *Id.*, 8:40-42, 8:45-47, 9:58-62, 12:19-21, 12:26-28, 21:52-54, 23:45-47. But in some cases, a first “zone player” is assigned the “master device” role of a given “synchrony group” and a second “zone player” (that may or may not be a member of the given “synchrony group”) is assigned the AICD role for the given “synchrony group.” *Id.*, 9:30-38, FIG. 2A. This latter situation may arise if, for example, the selected audio information source for the given “synchrony group” is an audio information source (e.g., a record player/turntable or the like) directly connected to the second “zone player” that was already a member (“master device” or “slave device”) of another “synchrony group.” *Id.*, 9:30-38, 9:58-10:13, 15:21-26.

The claims of the '357 Patent focus on embodiments where a single “zone player” (referred to in the claims as a “*first playback device*”) is assigned both the “master device” and AICD roles for a given “synchrony group” comprising itself and at least one other “zone player” (referred to in the claims as a “*second playback device*”). This is evident from the fact that, for example, limitation [1.2.1] recites the “*first playback device*” obtaining audio information after receiving “*control information*” from a “*network device configured to control the first playback device*” (e.g., “user interface module 13”), limitation [1.2.2] recites the “*first playback device*” transmitting to the “*second playback device*” the obtained audio information, associated “*playback timing information,*” and “*clock information*” and limitation [1.2.3] recites the “*first playback device*” playing back the audio information in synchrony with the “*second playback device.*”

Sonos’s synchronous playback technology at the core of the inventions claimed in the '357 Patent has been routinely and widely (and specifically) praised by the industry ever since Sonos’s products embodying this technology were first released in January 2005.

For example, in March 2005, PC Magazine extolled Sonos’s synchronization technology as follows:

But the ZonePlayer does the opposite as well: It can play *the same music* throughout the house, *perfectly synchronized*. Even though that may seem drop-dead simple, other hubs don’t do it.

Ex.2001.²

As another example, in October 2013, NBC News explained “[i]f you’re not familiar with Sonos, this company revolutionized the home audio world a decade ago” and went on to laud Sonos’s synchronization technology as follows:

If you wanted the *same song in every room*, no problem, the tracks would be *perfectly in sync*, but you could also play different tracks in different rooms, too. *At the time, this was mind blowing*. Never before could you get music in every room without drilling a bunch of holes for wires....

Ex.2002.

These are just some examples of the praise bestowed on the synchronous playback technology disclosed and claimed by the ’357 Patent. *See also, e.g.,*

Ex.2003.

B. Overview of the Reexamination of the ’357 Patent

As a result of Sonos’s patented technology, many would-be competitors (aside from Petitioner) have copied Sonos’s patented technology over the years, which has resulted in Sonos having to defend its patent rights.

As one example, Sonos asserted the ’357 Patent against D&M Holdings Inc. (“D&M”) in October 2014 in *Sonos, Inc. v. D&M Holdings Inc.*, No. 1:14-cv-1330 (D. Del.) (the “D&M Litigation”). In parallel with that district court litigation, D&M initiated *Ex Parte* Reexamination of the ’357 Patent in May 2017 (the “’357

² All emphasis herein has been added unless noted otherwise.

Reexamination”). Ex.1004, 4467-68. The PTAB ultimately confirmed the patentability of all challenged claims at issue in that reexamination (i.e., claims 9-12 and 19), issuing an *Ex Parte* Reexamination Certificate on October 4, 2019. See Ex.1001, 33-35.

The PTAB’s ’357 Reexamination decision rested on objective evidence of non-obviousness adduced by Sonos regarding “the synchronous playback feature” of the ’357 Patent—namely, evidence that Sonos’s “synchronous playback feature was praised, was copied, and was the subject of long-felt need and failure of others.” Ex.1004, 29.

Despite Petitioner discussing the ’357 Reexamination (*see* Pet., 8-9), none of Petitioner’s § 103 grounds (i.e., Grounds 2, 3, 5, and 6) even attempts to address any objective evidence of non-obviousness of the ’357 Patent.³ As such, Petitioner’s

³ Petitioner only refers back to objective evidence of non-obviousness in its section on discretionary denial (*see* Pet., 83-84). There, Petitioner essentially says the PTAB decision in the ’357 Reexamination was wrong because “‘the synchronous playback feature’... is disclosed in the prior art presented in this Petition” (*id.*, 84). But Petitioner is objectively wrong. As explained below, neither of Petitioner’s primary references has anything to do with the “synchronous *playback*” feature of Sonos’s ’357 Patent.

§ 103 grounds are deficient as a matter of law. *See, e.g., Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (*en banc*) (“A determination of whether a patent claim is invalid as obvious under § 103 requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered.”).

The objective evidence of non-obviousness before the PTAB during the ’357 Reexamination and the example industry praise quoted above are just some of the objective evidence of non-obviousness that exists for the inventions claimed in the ’357 Patent. In fact, in the parallel district court litigation, Sonos has provided Petitioner a comprehensive disclosure of such evidence for the ’357 Patent. *See* Ex.2003. The Petition’s § 103 grounds (i.e., Grounds 2, 3, 5, and 6) fail to even attempt to address any of this objective evidence of non-obviousness either.

C. Level of Skill of a POSITA

Linkplay contends a “[POSITA] at the time of the claimed invention would have had a Bachelor’s degree in electrical engineering, computer engineering, computer science, information technology, or a related field, along with at least two years of experience in the design or development of connected consumer electronics, networked engineering, or the equivalent.” Pet., 9. Sonos disagrees at least because it is unclear what Linkplay means by a degree in “information technology” and the

phrase “connected consumer electronics” (e.g., if this phrase intends to cover non-networked consumer electronics).

Instead, a POSITA would have had a Bachelor’s degree in computer science, computer engineering, electrical engineering, or an equivalent thereof, and 2-4 years of professional experience in the fields of networking and network-based systems or applications, such as consumer audio systems, or an equivalent level of skill, knowledge, and experience.

Regardless, the Petition fails under both Sonos’s and Linkplay’s definition of a POSITA.

III. OVERVIEW OF THE PETITION’S FLAWS

The Petition challenges the claims of the ’357 Patent across six grounds. Pet., 2-3. Grounds 1 and 4 allege that each of Petitioner’s primary references, Richenstein (Ex.1005) and Chatterton (Ex.1009), anticipates each claim of the ’357 Patent, and grounds 2-3 and 5-6 allege that each primary reference alone or combined with another reference renders obvious claims of the ’357 Patent. None of these grounds has merit.

In this regard, grounds 1 and 4 are “anticipation” grounds only by Linkplay’s labeling—neither Richenstein nor Chatterton could objectively be viewed as disclosing each and every element of the claims of the ’357 Patent, much less as disclosing each and every element arranged in the specific manner recited in the

claims. *See, e.g., Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) (“[D]isclosure of each element is not quite enough—this court has long held that anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention *arranged as in the claim.*”) (cleaned up; emphasis original); *see also Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (an “anticipatory reference” needs “to show all of the limitations of the claims arranged or combined in the same way as recited in the claims, not merely in a particular order.”). Indeed, as explained in detail below, Richenstein and Chatterton each fails to disclose at least limitations [1.1.1]-[1.1.2], [1.2.2], and [1.2.3] (and the analogous limitations of independent claims 8 and 9).

This is likely why Petitioner resorts to grounds 2 and 5 that allege that each primary reference (i.e., Richenstein and Chatterton) alone renders each claim of the ’357 Patent obvious. But, grounds 2 and 5 are legally deficient.

Petitioner’s grounds 2 and 5 (i.e., obviousness over Richenstein or Chatterton alone) are intermixed with grounds 1 and 4 (i.e., anticipation by Richenstein or Chatterton). Grounds 2 and 5 effectively amount to the Petitioner’s mere say-so that the given primary reference “discloses *or suggests*” a given claim element and the given primary reference “anticipates *or at least alone renders* obvious” a given claim. *See, e.g., Pet.*, 23 (after providing inherent anticipation argument for limitation [1.1.1], summarily concluding “[t]hus, Richenstein discloses or suggests

that the commands from the control devices... to audio device 34... indicates ‘address identifying a location of audio information available at’ cellular phone 805....”), 35, 36, 69, 72.

But aside from the Petitioner’s mere conclusory say-so that a primary reference alone renders a given claim element obvious, the Petition lacks *any explanation* of how the primary reference would have been modified to achieve the given claim element and fails to provide any supported explanation as to why a POSITA would have been motivated to modify the primary reference to achieve the given claim element in view of the primary reference itself. *See, e.g., Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (“[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a [POSITA] would have been motivated to make the combination and reasonably expect success in doing so.”); *Alacritech, Inc. v. Intel Corp.*, 966 F.3d 1367, 1372 n.5 (Fed. Cir. 2020) (conclusory statement that reference “suggests” a particular aspect is inadequate to support an obviousness determination); *Black & Decker, Inc. v. Positec USA, Inc.*, 646 F. App’x 1019, 1027 (Fed. Cir. 2016) (conclusory statement that reference “suggests” claim limitation coupled with assertions about what POSITA “would have known” or “could have” done was insufficient).

Grounds 3⁴ and 6 fare no better. These grounds are also conclusory and plagued with hindsight bias. Petitioner merely argues that a POSITA *could* have modified the primary reference in view of a standards prior art reference (MOST-2.0 or RFC1889) to achieve the claimed inventions. But what a POSITA *could* have done, without more, is insufficient to show what a POSITA *would* have been motivated to do. *See, e.g., Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (emphasis original); *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2012); (“[W]hat a skilled artisan could accomplish... is not the relevant inquiry” in an obviousness analysis).

While the Petition does cite to Petitioner’s expert’s testimony, the Petition fails to explain the content or pertinence of the testimony, and that testimony largely lacks supporting reasoning or evidence and is often contradicted by the documentary evidence. As such, it should be disregarded, even at this pre-Institution stage. *See, e.g., Tiktok Inc. v. Ntech Props., Inc.*, No. IPR2024-01339, 2025 WL 607860, at *7

⁴ Ground 3 only pertains to dependent claims 4-7 and 12-17, whereas Ground 4 pertains to claims 1-20. *See Pet.*, 3.

(PTAB Feb. 25, 2025) (according expert “testimony little or no weight” since it was conclusory and Petition did not explain its “content or pertinence”); *Blast Motion, Inc. v. Newspin Sports, LLC*, No. IPR2019-00536, 2019 WL 2929978, at *5 (PTAB July 8, 2019) (disregarding expert testimony that was conclusory and contradicted by documentary evidence).

At bottom, the Petition is riddled with invitations for the Board to speculate as to (a) respective aspects of Richenstein and Chatterton that are not described in any meaningful detail by these primary references and (b) what a POSITA *might* have done in view of Richenstein or Chatterton. Such a petition is insufficient to show a reasonable likelihood of prevailing. *See, e.g., Tableau Software, LLC v. iCharts, LLC*, No. IPR2024-01389, 2025 WL 1402790, at *4 (PTAB May 14, 2025); *Apple Inc. v. Parus Holdings, Inc.*, No. IPR2022-00948, 2022 WL 17254066, *7 (PTAB Nov. 28, 2022).

IV. THE RICHENSTEIN GROUNDS

For the Richenstein grounds, focusing just on the independent claims of the ’357, the Petition fails to show a reasonable likelihood of prevailing on at least limitations [1.1.1]-[1.1.2]/[8.1.1]-[8.1.2]/[9.3.1], [1.2.2]/[8.2.2]/[9.3.2(ii)], and [1.2.3]/[8.2.3]/[9.3.2(iii)], each of which serves as an independent basis to deny institution of the Richenstein grounds. Below, as in the Petition, Sonos will discuss

Richenstein’s deficiencies with respect to the independent claims using independent claim 1 as being representative.

A. Overview of Richenstein

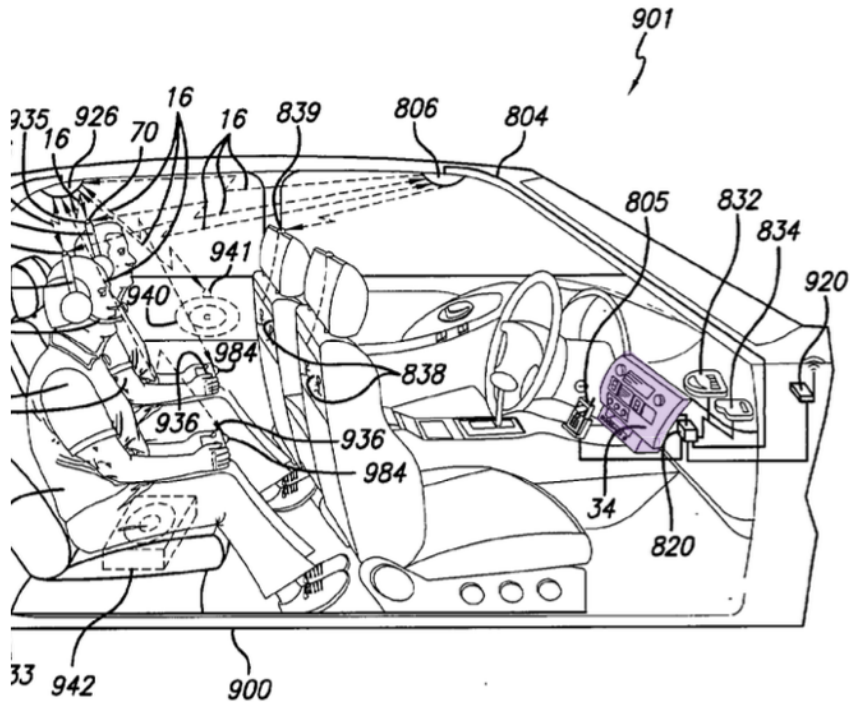
Richenstein was filed on July 3, 2002 and claims priority to several provisional applications with the earliest dated October 30, 2001. Ex.1005, codes (22), (60).

Richenstein generally relates to “wireless audio systems for providing a plurality of selectable audio signals from one or more sources to one or more listeners in an automobile, airplane, or building.” *Id.*, ¶2. More specifically, Richenstein describes a problem with existing “wireless audio systems” that include “an audio source such as a tuner transmitting a signal to one or more wireless headphones”—namely, that the transmitted “signal carries a single stereo channel of audio data” and “[t]o select a different channel of audio data, someone must operate the tuner to transmit the newly desired channel, at which point all wireless headphones receiving the signal will begin reproducing the new channel.” *Id.*, ¶3. Richenstein seeks to solve this problem and explains “[w]hat is needed is an improved wireless communication system including one or more wireless reception devices such as headphones, wherein the system offers multiple channels of audio and other data for individual selection therebetween by each respective reception device.” *Id.*, ¶4.

To this end, Richenstein discloses a “wireless headphone system 10” comprising (a) a “transmitter subsystem 12” with a “master controller 26” that may be included in an “audio device 34” and (b) a “headset unit 14,” which collectively can “serve as a base or entry level system suitable for use as a single channel wireless headphone system....” *Id.*, ¶36.

Richenstein describes “audio device 34” as a centralized aggregator of various “audio sources” from which audio signals can be transmitted to a reception device, such as “headset unit 14.” *Id.*, ¶33-40, FIG.1. In this respect, Richenstein explains that “audio device 34... represents any audio source,” such as radios, CD players, cassette players, and min-disc players, and “the audio portions of electronic devices” that themselves provide other types of audio signals, such as computers, TV sets, and DVD players. *Id.*, ¶36.

Reproduced here, Richenstein provides an illustration of an example “audio device 34” (in purple, below) in a vehicle (discussed in further detail below):



Id., FIG. 21 (annotated and cropped).

Multiple audio signals from the audio sources connected to “audio device 34” may be combined by “signal combiner/multiplexer 32” and then transmitted by an “[infrared] IR transmitter 20” via IR signals to “headset unit 14.” *Id.*, ¶34-37. A “decoder 74” of the “headset unit 14” processes the received IR signals to obtain separate stereo channels of audio, one pair of which can be selected by the user for output by “headset unit 14” for listening. *Id.*, ¶42-45.

Richenstein explains that the IR signals transmitted by “transmitter subsystem 12” to the recipient “headset unit 14” can be formatted in a manner to include a “gap 100” to synchronize the headset unit 14’s decoding to the “clock rate of the transmitter....” *Id.*, ¶53. More specifically, Richenstein explains “one important

task in maintaining proper operation of system 10 is to maintain synchronization between the operations, particularly the sampling and/or [analog-to-digital] A/D operations of transmitter subsystem 12 and the decoding and related operations of headset receiver unit 14.” *Id.*, ¶66; *see also id.*, ¶68, ¶119.

Richenstein discloses numerous, disparate embodiments involving “wireless headphone system 10” and its “audio device 34.” The Petition focuses on certain vehicle embodiments described by Richenstein in connection with FIGs. 20 and 21 (which Petitioner refers to as the “vehicle infotainment embodiments”) and a building embodiment described by Richenstein in connection with FIG. 23 (which Petitioner refers to as the “home entertainment embodiment”). Pet., 19.

While Richenstein describes FIG. 21 as depicting an “alternative embodiment” as compared to FIG. 20 (Ex.1005, ¶160), the so-called “vehicle infotainment embodiments” of FIGS. 20 and 21 are discussed collectively only for purposes of this POPR.

In connection with these “vehicle infotainment embodiments,” Richenstein describes a wireless audio system in a vehicle environment. Richenstein explains that “audio device 34 can provide a plurality of channels of audio data” (*id.*, ¶146), ostensibly from a built-in audio source like “a radio tuner, a cd player or a cassette tape player” of a “typical in-dash head unit” installed in a vehicle’s dashboard (*id.*, ¶139), to “transmitter/receiver 806” for distribution to reception devices, such as

“headset unit 14” (also referred to as “headphones 80”) or “loudspeaker 842.” *Id.*, ¶144, 146. Unlike a conventional configuration where a “typical in-dash head unit” is hardwired to a vehicle loudspeaker via analog audio wires, Richenstein contemplates “audio device 34” wirelessly transmitting audio data to “loudspeaker 842” via IR signals that “loudspeaker 842” can ultimately process for playback to the vehicle passengers. *Id.*, ¶144-45; *see also id.*, ¶153.

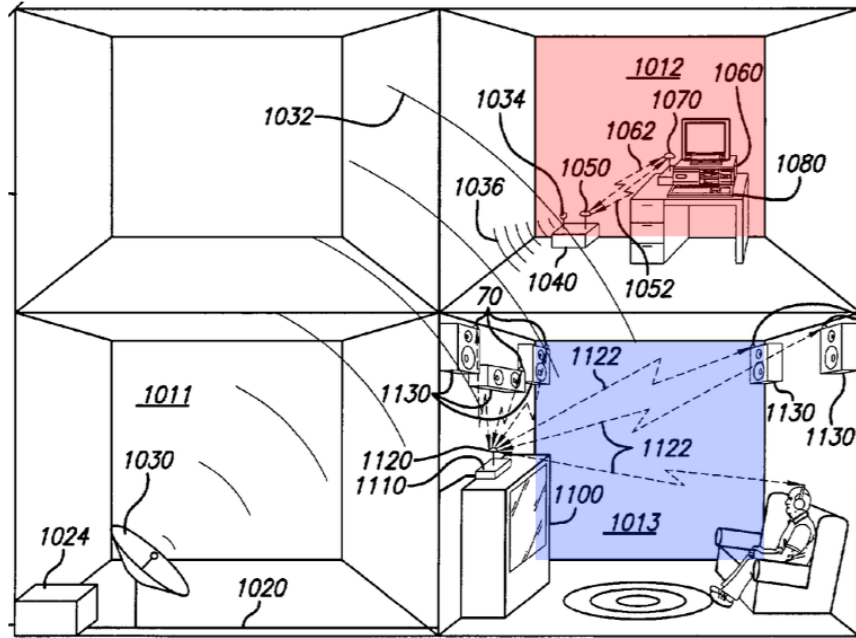
Richenstein also explains that “audio device 34” can provide “other types of data” than audio data, “including video data, cellular telephone voice data, and text data” for distribution within the vehicle. *Id.*, ¶146. In this respect, Richenstein explains that the vehicle might include a “cellular telephone 805” that is connected to “audio device 34” (among other local data sources), that in turn takes a “voice stream” from this local device and encodes “telephone voice data” for distribution within the vehicle via IR signals. *Id.*, ¶146. This could enable, for instance, a passenger within the vehicle wearing “headphones 80” to engage in a telephone conversation. *Id.*, ¶149.

Further in connection with the “vehicle infotainment embodiments,” Richenstein explains that another local source of audio in the vehicle may be a “video gaming console 837” that is connected to “audio device 34.” *Id.*, ¶152. In this regard, “passengers may wear headphones 80 to listen to the soundtrack of a game software executed by video gaming console 837 to generate audio and video

signals for transmission by audio device 34” and “the passengers may interact with the game software being executed on the gaming console via inputs through game control device (e.g. a joystick, touch pad, mouse, etc.) 836.” *Id.* Richenstein goes on to explain that a “game control device” could be used for other purposes, such as for “accessing and controlling cellular telephone 805....” *Id.*, ¶166.

Turning to FIG. 23, Richenstein provides “yet another embodiment” of a wireless audio system, but this time in a building environment. *Id.*, ¶174. Richenstein provides four total paragraphs describing the embodiment of FIG. 23. *See id.*, ¶174-77.

At a high level, Richenstein’s FIG. 23 embodiment contemplates an “interface encoder/decoder 1040” installed in “each room of the building” that bridges wired or wireless “network 1020” to devices equipped with “one-way” or “two-way” IR “encoder/decoder” units (1110, 1040). *Id.*, ¶177.



Ex.1005, FIG. 23 (annotated and cropped).

In particular, Richenstein explains that room 1012 (in red, above) may include a “PC 1060” that is “equipped with IR transmitter/receiver 1070” that generally allows “PC 1060” to “encode data from the PC and transmit it as IR signal 1062” to two-way “encoder/decoder 1040,” which can pass data from the IR signal to “RF antenna 1034” that in turn transmits the data to “transceiver 1030” for communication to “network 1020.” *Id.*, ¶175.

Richenstein also explains that room 1013 (in blue, above) may include “home theatre system 1100” connected to one-way “decoder 1110” that can receive one or more channels of audio from “home theatre system 1100” and “drive IR transmitter 1120 to transmit the channels of audio as IR signals 1122” to “wireless headphones 1120” and “remote speakers 1130.” *Id.*, ¶176.

B. Richenstein's Deficiencies Regarding [1.1.1]-[1.1.2]

Limitations [1.1.1]-[1.1.2] of the '357 Patent require a “*first playback device*” [1.1.1] “*receiving... from a network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN), control information comprising an address identifying a location of audio information available at an audio information source, [1.1.2] wherein the audio information source is outside of the LAN.*”⁵

For limitation [1.1.1], in the Richenstein grounds, the Petition is ambiguous as to whether it is advancing only an anticipation theory or both an anticipation and single-reference obviousness theory. In this respect, the Petition starts off by contending “Richenstein *discloses* element [1.1.1] in multiple embodiments” (Pet., 19) but later concludes (a) with respect to the so-called “vehicle infotainment embodiments,” “[t]hus, Richenstein *discloses or suggests*” limitation [1.1.1] and (b) “Richenstein also *discloses or suggests* element [1.1.1] in its home embodiment of Fig. 23.” Pet., 23. For limitation [1.1.2], in the Richenstein grounds, the Petition only advances an anticipation theory. See Pet., 25-26.

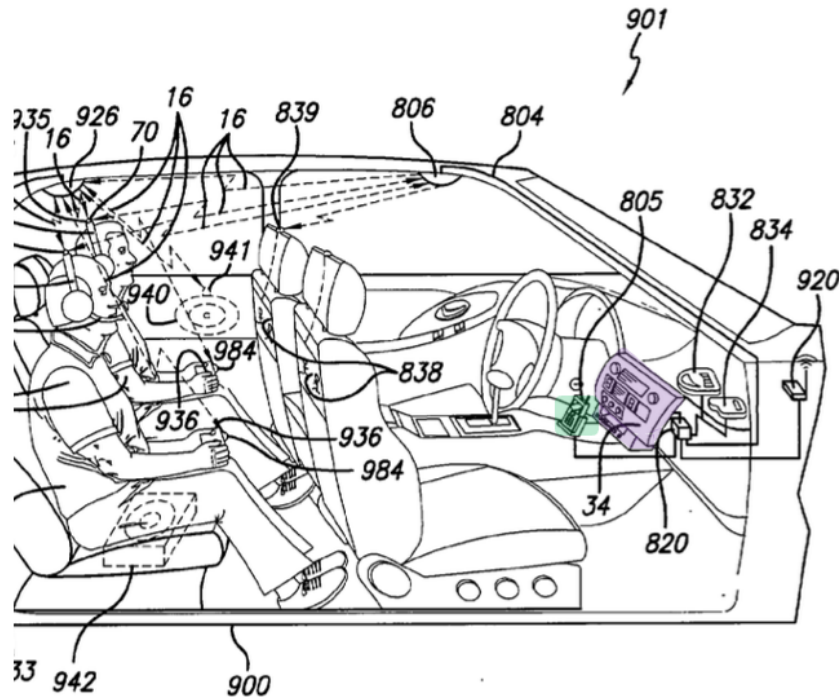
⁵ Limitations [8.1.1]-[8.1.2]/[9.3.1] are substantially similar. See Pet., 38, 41.

Regardless, the Petition fails to show a reasonable likelihood of prevailing on establishing Richenstein discloses or suggests limitations [1.1.1]-[1.1.2] in any embodiment.

1. “Vehicle Infotainment Embodiments”

According to the Petition, in the so-called “vehicle infotainment embodiments,” the claimed “*first playback device*” is Richenstein’s “audio device 34” (Pet., 19; in purple, below), the claimed “*network device*” is any one of Richenstein’s “game controllers 836/936, microphone 832/984, and headphones 80/980” (Pet., 22), and the claimed “*audio information source*” is “cellular telephone 805” (Pet., 22; in green, below).

For limitation [1.1.1], the Petition concludes with an assertion that “Richenstein discloses or suggests that the commands from the control devices... to audio device 34... indicates ‘*address identifying a location of audio information available at*’ cellular phone 805....” Pet., 22-23.



Ex.1005, FIG. 21 (annotated and cropped).

As to the claimed “local area network (LAN),” the Petition does not specifically identify what in FIG. 20 or 21 purportedly amounts to this claim element. Instead, the Petition refers to a “networked audio system 10” as purportedly mapping to this claim element. Pet., 21. But neither FIG. 20 nor FIG. 21 makes any reference to a “networked audio system 10.” Based on the Petition’s citation to Richenstein paragraphs 33-41, it appears what Petitioner labels “networked audio system 10” is Richenstein’s “wireless headphone system 10” of FIG. 1. *See also* Pet., 12 (referring to “system 10” as “a local network”). The closest analog in FIGs. 20-21 to “wireless headphone system 10” is the “communication system” 801/901.

With this as background, the Petition fails to show that Richenstein’s so-called “vehicle infotainment embodiments” suggest, much less disclose, limitations [1.1.1]-[1.1.2] for multiple reasons.

First, “cellular telephone 805” is not an audio information source that is *outside* of the purported “*local area network (LAN)*”—it is an audio information source that is *inside* of the purported “*local area network (LAN)*.” “Cellular telephone 805” is plainly depicted inside the vehicle comprising “communication system” 801/901 and is described as being directly “connected” to “audio device 34” (the purported “*first playback device*”). *See, e.g.*, Ex.1005, ¶146, 149. In this way, Richenstein’s “cellular telephone 805” vis-à-vis “audio device 34” is no different than any “audio information source 14(n)(s)” that is “directly connected” to a “zone player” in the ’357 Patent, which the ’357 Patent discloses as being a different type of audio information source than what limitations [1.1.1]-[1.1.2] cover. *See, e.g.*, Ex.1001, 3:48-51, 4:2-13, 4:45-5:3, 5:6-19.

Petitioner argues “cellular phone 805 itself is on a cellular network outside the local network carrying signals 16 (*‘outside of the LAN’*).” Pet., 25. But, “cellular telephone 805” being communicatively coupled to a cellular network and possibly engaging in a conversation with another telephone that is outside of the purported “*local area network (LAN)*” is beside the point. The source of the “voice stream” that is to be distributed within “communication system” 801/901 is “cellular

telephone 805,” which is indisputably *inside* of the purported “*local area network (LAN)*,” regardless of whether “cellular telephone 805 is or is not also communicatively coupled to a cellular network. Indeed, under Petitioner’s logic, all of the ’357 Patent’s “zone players”/“playback devices” in a given residence containing “local network 12” would nonsensically be considered “*outside of the LAN*” because all of them are communicatively coupled to a wide-area network (e.g., the Internet). *See, e.g.,* Ex.1001, 4:2-13, 4:54-5:3, 5:11-14, 18:30-37, FIG. 1. This is illogical and cannot be correct.

Second, none of Richenstein’s purported “*network device[s]*” (i.e., game controllers 836/936, microphone 832/984, or headphones 80/980) is described as sending “audio device 34” “*an address identifying a location of audio information available at an audio information source.*” According to Petitioner’s theory, such an “*address*” would have to be in connection with “cellular telephone 805” (the purported “*audio information source*” that is “*outside of the LAN*”).

Yet, other than generic disclosure of Richenstein’s purported “*network device[s]*” “accessing and controlling cellular telephone 805,” such as to “place a call and conduct a two-way conversation” (Ex.1005, ¶165-66), Petitioner points to nothing in Richenstein that amounts one of the purported “*network device[s]*” sending “audio device 34” any “*address*” in connection with “cellular telephone 805.”

Conceding Richenstein's deficiency in this regard, the Petition resorts to alleged inherent disclosure from Richenstein. *See* Pet., 22-23. In particular, Petitioner attempts to gap fill and baldly asserts:

A POSITA would understand that for audio device 34 to access and retrieve audio information of a call (either answered or initiated) on cellular phone 805, the command from controllers 836/936 to audio device 34 *must identify* an address of the location of such audio information on phone 805, such as the location specifically related to phone call functions.

Id., 22-23. But this is incorrect.

Richenstein's "audio device 34" can "access and retrieve [purported] audio information of a call... on cellular phone 805" without requiring a command from a purported "*network device*" to "identify an address of the location of such audio information on phone 805, such as the location specifically related to phone call functions."

For example, Richenstein explains that "audio device 34 may include voice recognition capabilities" that would allow a passenger "using headphones 980" to "operate cellular telephone 805 by speaking commands into microphone 984." Ex.1005, ¶165. In such a case, at least because "audio device 34" is described as the device with "voice recognition capabilities," the purported "*network device*" ("headphones 980"/"microphone 984") would not need to send "*an address of*... the location specifically related to phone call functions" "on phone 805." Instead, if a

passenger wanted to “call Mom,” “headphones 980”/“microphone 984” would send voice data captured by “microphone 984” to “audio device 34” to process and determine that the passenger spoke the command “call Mom.”

Setting aside the Petitioner has failed to show inherent disclosure of the claimed “*address*,” even if Petitioner was correct that a purported “*network device*” in Richenstein would need to send to “audio device 34” “an address of... the location specifically related to phone call functions” “on phone 805,” that would still not satisfy all of the elements of limitations [1.1.1]-[1.1.2]. This is because, as explained before, “cellular telephone 805” is not an “*audio information source*” that is “*outside of the LAN*” and so, “an address of... the *location* specifically *related to phone call functions*” “*on* phone 805” does not satisfy limitations [1.1.1]-[1.1.2].

* * *

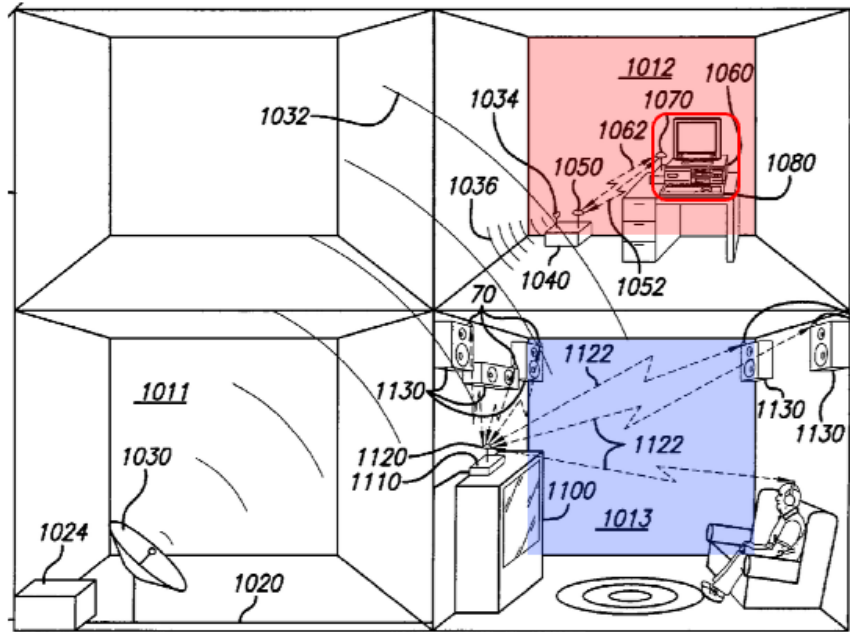
Each of the above is an independent basis for why the Petition fails to show that Richenstein’s so-called “vehicle infotainment embodiments” disclose limitations [1.1.1]-[1.1.2]. In parallel with its assertions regarding Richenstein’s disclosures, Petitioner summarily states Richenstein alternatively “suggests” limitation [1.1.1] (*see* Pet., 22-23), but such a bald assertion is legally insufficient to establish single-reference obviousness for a claim limitation. *See, e.g., Alacritech*, 966 F.3d at 1372 n.5; *Black & Decker*, 646 F. App’x at 1027.

Accordingly, the Petition fails to show a reasonable likelihood of prevailing under the “vehicle infotainment embodiments” theory.

2. “Home Entertainment Embodiment”

According to the Petition, in the so-called “home entertainment embodiment,” the claimed “*first playback device*” is Richenstein’s “home theatre system 1100” (Pet., 23), the claimed “*network device*” is Richenstein’s “PC 1060” (Pet., 23), and the claimed “*audio information source*” is either of “cable television network 1022 or a media source on the Internet” (Pet., 25). The Petition fails to show that Richenstein suggests, much less discloses, limitation [1.1.1] under this theory for multiple reasons.

First, Richenstein’s disclosure with respect to “PC 1060” is sparse and never suggests, much less discloses, that “PC 1060” (outlined in red, below) would be used to select the “television and audio programming” for “home theatre system 1100” that is in a separate room (in blue, below) on a separate floor of a building than “PC 1060.” See Ex.1005, ¶175-77.



Ex.1005, FIG. 23 (annotated and cropped). As such, Richenstein’s disclosure does not suggest, much less disclose, “PC 1060” sending “home theatre system 1100” “*an address identifying a location of audio information available at an audio information source.*”

While Petitioner baldly asserts “a POSITA would understand home theater device 1100 is controllable by PC 1060, e.g., in ways similar to other controller devices disclosed by Richenstein” (Pet., 24), that assertion lacks objective support. Indeed, “PC 1060” is a fundamentally different type of device as compared to the purported “*network device[s]*” of FIGs. 20-21 (i.e., game controllers 836/936, microphone 832/984, or headphones 80/980), and Richenstein never analogizes, much less equates, “PC 1060” with any of these other devices. “PC 1060” is also fundamentally different than the purported “*network device[s]*” of FIGs 20-21 at

least because “PC 1060” is not even on the same floor, much less in the same room, as the device that Petitioner contends “PC 1060” is controlling (i.e., “home theater system 1100”). In contrast, the purported “*network device[s]*” of FIGs. 20-21 are all proximate to the device that Petitioner contends they are controlling (i.e., “audio device 34”). Thus, Petitioner fails to justify its assertion that “home theater device 1100 is controllable by PC 1060” “in ways similar to other controller devices disclosed by Richenstein,” which undermines Petitioner’s entire “home entertainment embodiment” theory for limitation [1.1.1].

Second, other than conjuring from thin air a scenario of “PC 1060” controlling the “television and audio programming” for “home theatre system 1100,” Petitioner baldly alleges another inherent anticipation argument:

For home theatre system 1100 to access and retrieve “television and audio programming” (“*audio information*”) from cable television network 1022 or a media source on the Internet (“*audio information sources*”), the control information **must indicate** the content storage locations and/or URLs (“*addresses identifying a location of audio information*”).

Pet., 25. But this again is easily disproven.

Even assuming *arguendo* that Richenstein’s “PC 1060” could possibly be used to control the “television and audio programming” for “home theatre system 1100,” it simply does not follow that “PC 1060” would need to send to “home theatre system 1100” an indication of “the content storage locations and/or URLs” at “cable

television network 1022 or a media source on the Internet” for the “television and audio programming.”” For example, if the user wanted to watch a specific cable TV channel, “PC 1060” could simply send a command with no “address” at all to “home theatre system 1100,” and in turn, the “home theatre system 1100” could independently ascertain how to tune to the desired TV channel.

* * *

Each of the above is an independent basis for why the Petition fails to show that Richenstein’s so-called “home entertainment embodiment” discloses limitations [1.1.1]-[1.1.2]. In parallel with its assertions regarding Richenstein’s disclosures, Petitioner summarily states Richenstein alternatively “suggests” limitation [1.1.1] (*see* Pet., 23), but as explained above, such a bald assertion is insufficient to establish single-reference obviousness for a claim limitation. *Supra* §IV.B.1. Accordingly, the Petition fails to show a reasonable likelihood of prevailing under the “home entertainment embodiment” theory.

C. Richenstein’s Deficiencies Regarding [1.2.2]

Limitation [1.2.2] of the ’357 Patent requires a “*first playback device*” “*transmitting... to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of*

the first playback device.”⁶ In other words, relevant here, limitation [1.2.2] requires the “*first playback device*” to transmit to a “*second playback device*” two different, specific forms of information other than obtained audio information: (1) “*playback timing information associated with the audio information,*” which the Petition acknowledges in the ’357 Patent means “information indicating when the audio information is to be played back” (Pet., 10-11), and (2) “*device clock information of the first playback device.*”

For “*playback timing information*” and “*device clock information,*” the Petition addresses Richenstein’s so-called “vehicle infotainment embodiments” and “home entertainment embodiment” collectively. See Pet., 30-34. For both embodiments, the Petition only advances an anticipation theory for these elements of limitation [1.2.2]. See Pet., 27, 33, 34.

At a minimum, the Petition fails to identify anything resembling the ’357 Patent’s “*playback timing information*” (i.e., information indicating when the audio information is to be played back). In this regard, the Petition points to three purported aspects of Richenstein as allegedly satisfying “*playback timing information*” (Pet., 33), but none of them is on point.

⁶ Limitations [8.2.2]/[9.3.2(ii)] are substantially similar. See Pet., 38, 41.

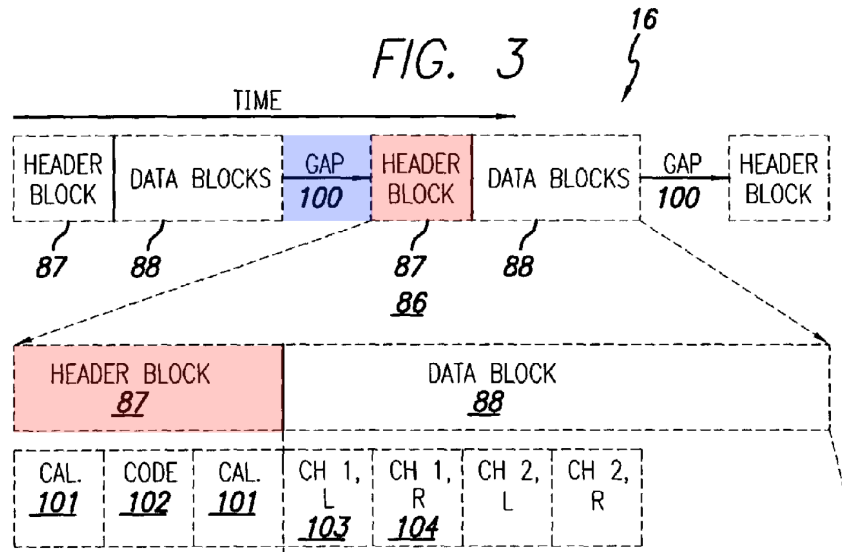
1. “Timing Information” of Richenstein [0066]-[0067]

Although it does so in a confusing manner, the Petition refers to “timing information” disclosed at Richenstein paragraphs 66-67 as purportedly amounting to the ’357 Patent’s “*playback timing information*” (i.e., information indicating when the audio information is to be played back). *See* Pet., 33. Specifically, the Petition asserts (a) paragraph 66 discloses “‘timing information’ included within IR signals 16 to ‘synchronize the timing of the [playback] operations of’ a receiver to a transmitter” (*id.* (bracketed insertion Petitioner’s)) and (b) paragraph 67 “also discloses ‘sync signals’ in the IR data that is detected by synch detector 112, including, e.g., ‘trailing edge of data section 88.’” *Id.* Petitioner’s assertions are flawed for several reasons.

To start, Richenstein never suggests, much less discloses, any desire to “synchronize the timing of the *playback operations* of a receiver to a transmitter,” as Petitioner asserts. Pet., 33 (cleaned up). Instead, Richenstein clearly states at paragraph 66 that there is a desire to “maintain synchronization” between “the sampling and/or A/D operations of transmitter subsystem 12” and “the decoding and related operations of headset receiver unit 14,” which is distinctly different from synchronizing *playback* between devices. *Accord* Ex.1005, ¶68, ¶119. Indeed, as explained below in connection with limitation [1.2.3], Richenstein does not

contemplate synchronizing *playback* of audio between a transmitting device and a receiving device whatsoever.

Moreover, Petitioner is wrong to say Richenstein's paragraph 67 refers to "sync signals" and wrong to imply paragraph 66 refers to a concept that is different than paragraph 67. *See* Pet., 33. Instead, Richenstein's paragraph 67 describes how the "synch detector 112" of "headset unit 14" performs "sync signal detection" on the "timing information provided by transmitter subsystem 12 and included within IR signals 16" mentioned in paragraph 66. Namely, Richenstein's paragraph 67 explains that "synch detector 112" performs "sync signal detection" by "detect[ing] gap 100 by, for example, detecting the trailing edge of data section 88 in a particular transmitted packet 86 and, after an appropriate pre-selected delay or gap, detect[ing] the leading edge of header section 87 of a subsequent transmitted packet 86." In this way, paragraphs 66-67 make clear that the "timing information provided by transmitter subsystem 12" is "gap 100" of FIG. 3 (in blue, below). In turn, Richenstein's paragraph 68 concludes the discussion of paragraphs 66-67 by explaining "[u]pon detection of appropriate synchronization data, sync detector 112 may then maintain appropriate clocking information for headset receiver unit 14... for synchronizing the decoding and/or sampling of the IR data" transmitted by "transmitter subsystem 12."



Ex.1005, FIG. 3 (annotated).

That the “timing information” disclosed at Richenstein’s paragraphs 66-67 is not the ’357 Patent’s “*playback timing information*” (i.e., information indicating when the audio information is to be played back) is highlighted by the fact that the Petition refers to this same “timing information” of Richenstein as allegedly satisfying the ’357 Patent’s separately claimed “*device clock information of the first playback device.*” In this respect, the Petition cites to Richenstein’s paragraphs 53, 109, and 118-121 as allegedly disclosing “*device clock information of the first playback device.*” See Pet., 34. But Richenstein’s paragraph 53 makes clear that it refers to the same “timing information” of paragraphs 66-68.

Richenstein’s paragraph 53 (reproduced in full below) explains that it is previewing additional details provided later in connection with FIG. 4:

As shown in FIG. 3, IR signals 16 include a plurality of transmitted signals (or packets, as described elsewhere herein) 86 separated from each other by **gap 100** that may conveniently simply be a 16 bit word formed of all zeros. **Gap 100** is useful to convey clocking information for **synchronizing the receiver decoding** to the clock rate of the transmitter, *as described below in greater detail with respect to FIG. 4.*

Ex.1005, ¶53 (accenting added).

Then, paragraph 66 starts by stating “[r]eferring again to FIGS. 1 and 4” and goes on to describe “timing information” useful for “maintain[ing] synchronization” between “the sampling and/or A/D operations of transmitter subsystem 12” and “the **decoding and related operations of headset receiver unit 14....**” In turn, paragraph 67 starts by stating “[a]s shown in FIG. 4” and goes on to explain that “synch detector 112” of “headset unit 14” can “detect **gap 100.**” As noted above, paragraph 68 concludes the discussion of paragraphs 66-67 by explaining that “sync detector 112 may then maintain appropriate clocking information for **headset receiver unit 14...** for **synchronizing the decoding and/or sampling** of the IR data” transmitted by “transmitter subsystem 12.”

In sum, paragraph 67 explains that the “timing information” useful for “maintain[ing] synchronization” mentioned in paragraph 66 is “**gap 100,**” which paragraph 53 states is “useful to convey clocking information for **synchronizing the receiver decoding** to the clock rate of the transmitter....” Thus, the Petition

impermissibly points to the same information in Richenstein as satisfying both the claimed (1) “*playback timing information associated with the audio information,*” and (2) “*device clock information of the first playback device.*” See, e.g., *Volkswagen Grp. of Am., Inc. v. Stratosaudio, Inc.*, No. IPR2021-00719, 2021 WL 5195263, at *7 (PTAB Oct. 22, 2021) (denying institution in part because petition insufficiently mapped prior art’s single type of data on two separately claimed types of data); *Ex Parte Noel Wayne Anderson*, Appeal No. 2014-001139, 2016 WL 3569637, at *4 (PTAB June 28, 2016) (declining to sustain rejection that relied on “impermissible double counting”). As such, this theory fails.

The following table illustrates how Richenstein’s teachings at paragraphs 109 and 118-121 (the additional passages the Petition cites for “*device clock information of the first playback device*”) refer to the same subject matter of Richenstein’s teachings at paragraphs 66-68 (the passages the Petition relies on for “*playback timing information*”):

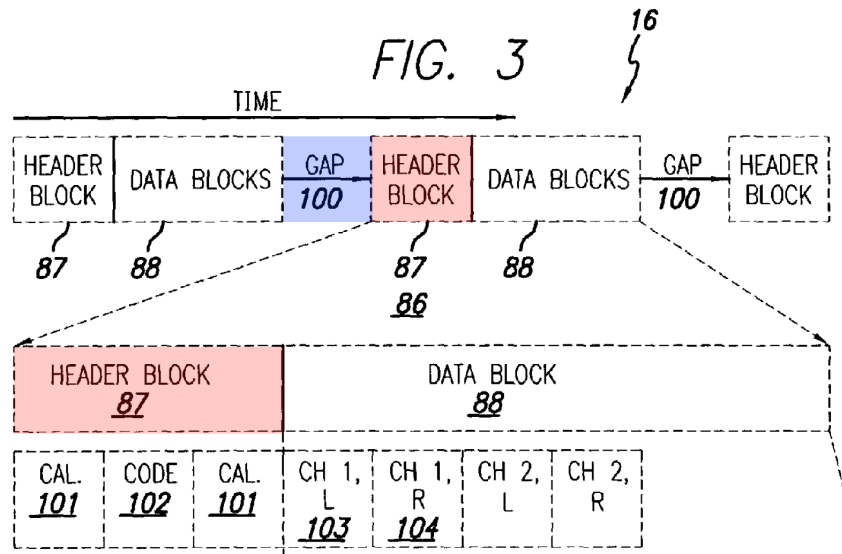
Purported “playback timing information”	Purported “device clock information”
[0066] Referring again to FIGS. 1 and 4, one important task in maintaining proper operation of system 10 is to maintain synchronization between the operations, particularly the sampling and/or A/D operations of transmitter subsystem 12 and the decoding and related operations of headset receiver unit 14. Although synchronization may be maintained in several different ways,	[0118] Data clock recovery circuit 716 is used to reproduce the data clock used by transmitter 500 . In one embodiment of receiver 700 of the invention, the data clock recovery circuit contains an edge detector and a PLL (Phase Lock Loop). The data clock recovery circuit 716 utilizes the PLL to generate and synchronize the data clock with the incoming IR data 720....

Purported “playback timing information”	Purported “device clock information”
<p>it has been found to be advantageous particularly for use in a system (such as system 10) including a possible plurality of battery powered remote or receiver units (such as headset units 14) to synchronize the timing of the operations of headset receiver units 14 to timing information provided by transmitter subsystem 12 and included within IR signals 16 to assure that the synchronization was accurately achieved for multiple receiver units that may be replaced or moved between automobiles from time to time.</p>	<p>[0119] The PLL is used to generate a synchronized clock, which is used by DSP 710 to sample the IR data signal 712.... Receiver DSP 710 uses the recovered data clock to synchronize with transmitter DSP 600 such that the data encoded and transmitted by transmitter 500 is received and decoded by receiver 500 at the same rate. The PLL also contains a lock detect, which can be used to signal DSP 710 when the PLL is locked (synchronized with the incoming data).</p> <p>[0120] With reference to FIG. 16, in an alternative embodiment of receiver 700 of the invention includes data clock recovery circuit 716 that does not utilize a PLL but rather employs edge detector 775,... to synchronize the data clock with incoming IR data 712.</p>
<p>[0067] As shown in FIG. 4, IR data is applied from IR received signal processor 72 to synch detector 112 that may conveniently detect gap 100 by, for example, detecting the trailing edge of data section 88 in a particular transmitted packet 86 and, after an appropriate pre-selected delay or gap, detect the leading edge of header section 87 of a subsequent transmitted packet 86....</p>	<p>[0118] In one embodiment of receiver 700 of the invention, the data clock recovery circuit contains an edge detector and a PLL (Phase Lock Loop).</p> <p>[0120] With reference to FIG. 16, in an alternative embodiment of receiver 700 of the invention includes data clock recovery circuit 716 that does not utilize a PLL but rather employs edge detector 775, crystal oscillator 776 tuned to the frequency of the audio transmission device 500 master clock, and buffers 777, 778 to synchronize the data clock with incoming IR data 712.</p>

Purported “playback timing information”	Purported “device clock information”
<p>[0068] Upon detection of appropriate synchronization data, sync detector 112 may then maintain appropriate clocking information for headset receiver unit 14 by adjusting a clock or, preferably, maintaining synchronization updating a phase lock loop circuit (or PLL), such as PLL 114. The output of PLL 114 may then be applied to DSP 76 for synchronizing the decoding and/or sampling of the IR data, for example, by controlling the clock rate of the D/A conversion functions of DSP 76....</p>	<p>[0109] Referring to FIG. 14,... DSP 710 serves as the central control for the receiver 700 circuitry and controls all of the inputs and outputs of the receiver. The IR data packet is received by DSP 710 in single serial stream 712 from IR receiver 714. The start of IR data stream 712 creates the frame synchronization for the incoming data packet. Clock recovery circuit 716 develops the IR data clock used to sample the IR data.</p> <p>[0118] In one embodiment of receiver 700 of the invention, the data clock recovery circuit contains an edge detector and a PLL (Phase Lock Loop). The data clock recovery circuit 716 utilizes the PLL to generate and synchronize the data clock with the incoming IR data 720....</p> <p>[0119] The PLL is used to generate a synchronized clock, which is used by DSP 710 to sample the IR data signal 712....</p> <p>[0120] With reference to FIG. 16, in an alternative embodiment of receiver 700 of the invention includes data clock recovery circuit 716 that does not utilize a PLL but rather employs edge detector 775,... to synchronize the data clock with incoming IR data 712.</p> <p>[0121] Crystal oscillator 776 and buffer stages 777, 778 provide a bi-level clock for sampling the IR data 712.</p>

2. Calibration “Timing Data”

Next up as purported “*playback timing information*” (i.e., information indicating when the audio information is to be played back), the Petition returns to FIG. 3 but now refers to information that might be contained in a different part of a “transmitted packet 86”—namely, “header section 87” (in red, below).



Ex.1005, FIG. 3 (annotated).

In particular, the Petition latches onto a cryptic, passing mention of “timing data” amongst a laundry list of other types of data that might be included in a “calibration section 101” of “header section 87.” Pet., 33; Ex.1005, ¶57 (“Each header section 87 may include one or more calibration sections 101 and control code sections 102. In general, calibration sections 101 may provide *timing data*, signal magnitude data, volume and/or frequency data as well as control data related, for example, to audio format or other acoustic information.”).

But Richenstein never again refers to this calibration “timing data,” much less suggests it refers to something that amounts to the ’357 Patent’s “*playback timing information*” (i.e., information indicating when the audio information is to be played back). Thus, Petitioner’s assertion that Richenstein’s calibration “timing data” “indicat[es] when the audio information in data section 88 is to be played back” (Pet., 33) finds no support in Richenstein. As such, this theory fails as well. *See, e.g., Tableau Software*, 2025 WL 1402790, at *4 (an invitation for the Board to speculate as to aspects of a reference not described in meaningful detail by the reference is insufficient to show a reasonable likelihood of prevailing).

3. MOST Standard “Time Stamp”

Lastly, despite not attempting to advance any obviousness-type argument, the Petition veers into the purported teachings of “the MOST standard.” Pet., 33. Setting aside Richenstein only makes a passing reference to MOST in a single “alternative” embodiment (*see* Ex.1005, ¶171), the Petition fails to identify anything in MOST amounting to the ’357 Patent’s “*playback timing information*” (i.e., information indicating when the audio information is to be played back).

Instead, the Petition merely identifies MOST’s generic reference to a “time stamp” that is collected at the occurrence of “bus events, such as control messages, lock, unlock, light, or error conditions”:

This function block collects bus events, such as control messages, lock, unlock, light, or error conditions. All events are provided with a time stamp

and collected in a central message buffer. Bus analysis provides several functions with a uniform interface to the visualization software, including filtering functions, functions for recording events, and functions for generating trigger conditions.

Ex.1008, 177. But nothing here suggests, much less discloses, MOST having a “time stamp” that indicates “when [] audio information is to be played back.” Thus, this theory also fails.

* * *

None of the Petition’s attempts to manufacture “*playback timing information*” from Richenstein’s disclosure have merit, and thus, for at least this reason, the Petition fails to show a reasonable likelihood of prevailing on Richenstein disclosing limitation [1.2.2].

D. Richenstein’s Deficiencies Regarding [1.2.3]

Limitation [1.2.3] of the ’357 Patent requires a “*first playback device*” “*playing back... the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the device clock information of the first playback device to play back the audio information.*”⁷ For this limitation, once again, the Petition addresses Richenstein’s

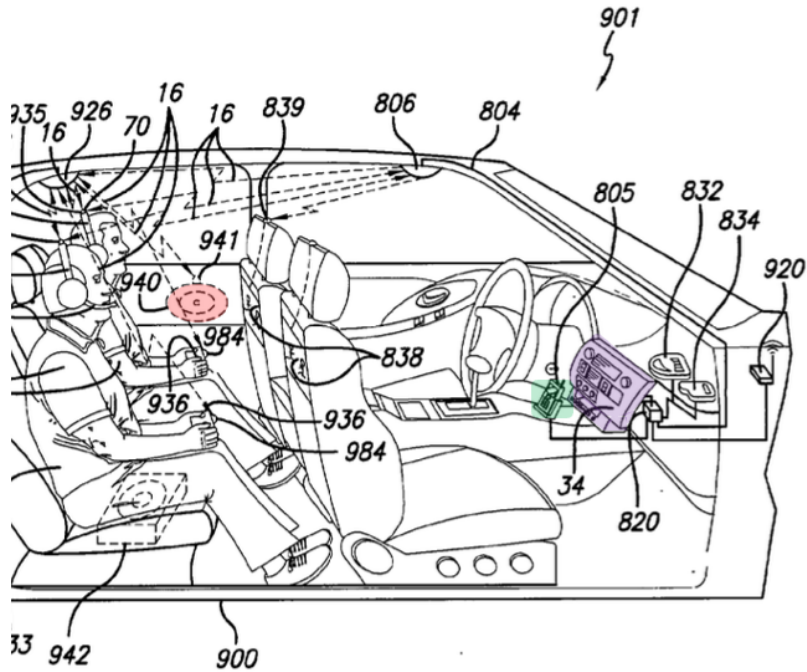
⁷ Limitations [8.2.3]/[9.3.2(iii)] are substantially similar. See Pet., 38, 41.

so-called “vehicle infotainment embodiments” and “home entertainment embodiment” collectively. *See* Pet., 35.

The Petition attempts to dispatch limitation [1.2.3] in a single paragraph that relies heavily on the word of Petitioner’s expert, as opposed to actual disclosure from Richenstein. *See id.* But there is nothing in Richenstein that suggests, much less discloses, any purported “*first playback device*” playing back audio in synchrony with any purported “*second playback device*,” let alone doing so as recited in the ’357 Patent.

1. “Vehicle Infotainment Embodiments”

To achieve limitation [1.2.3] in the so-called “vehicle infotainment embodiments,” Richenstein’s “audio device 34” (purported “*first playback device*”; in purple, below) would have to playback in synchrony a “voice stream” from “telephone 805” (purported “*audio information*” from “*the audio information source outside of the LAN*”; in green, below) with vehicle loudspeakers 842/940 (purported “*second playback device*”; in red, below). But Richenstein neither discloses nor suggests anything of this sort.



There is no teaching or suggestion in Richenstein of “audio device 34” playing back any audio or voice information that it transmits to another device within the vehicle. Nor would this make any conceivable sense for Richenstein’s “audio device 34” in the vehicle setting. This is because, in such a setting, “audio device 34” is an “in-dash head unit” that traditionally would only ever playback audio in the first instance via a vehicle loudspeaker that was hardwired back to the “in-dash head unit.” See Ex.1005, ¶139, ¶153. Richenstein’s twist on this conventional arrangement is that “audio device 34” is able to wirelessly transmit IR signals via “transmitter/receiver 806” to a vehicle loudspeaker (e.g., loudspeaker 842/940) that in turn processes the IR signals to decode audio for the vehicle loudspeaker to

playback. In short, “audio device 34” transmits, and a vehicle loudspeaker (e.g., loudspeaker 842/940) plays back.

But mere transmission of audio information is not the same thing as playing back audio information. The claim language of the ’357 Patent makes it clear that no POSITA would conflate the two: limitation [1.2.2] recites the “*first playback device*” “*transmitting... the audio information*” and limitation [1.2.3] separately recites the “*first playback device*” “*playing back... the audio information....*”

Additionally, the United States District Court for the District of Delaware’s *Markman* order and additional commentary from the D&M Litigation regarding the term “*playback device*” is instructive as to why a device transmitting audio information over a network to another device does not constitute playing back the audio information in synchrony with the other device; the proceedings in that litigation plainly established that a device merely sending audio would not be outputting (i.e., playing) audio.

In this respect, at *Markman*, Judge Andrews construed the phrases “playback device” and “zone player” as claimed and disclosed in the ’357 Patent as a “data network device configured to process and output audio.” Ex.1006, 9. Judge Andrews further explained “the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker.” *Id.*, 16-17. Later, prior to the D&M jury trial, Judge Bryson sitting by designation

ruled on a *Daubert* motion in which D&M tried to prevent Sonos’s expert from opining that a device like a media server that merely transmits audio data over a network does not amount to a “playback device”/“zone player” since transmitting audio data over a network is not outputting (i.e., rendering/playing) audio. *See* Ex.2119, 25-27. Judge Bryson denied D&M’s motion and explained that the expert opinions were consistent with Judge Andrews’ *Markman* order since “[a] device that only sends and receives network data packets would not be processing and outputting audio.” *Id.*, 26-27.

Thus, since a device transmitting audio data over a network does not amount to outputting (i.e., playing) audio, it then follows that a device transmitting audio data over a network to another device cannot amount to it playing back audio in synchrony with the other device. If the Board agrees with this conclusion (i.e., that transmitting audio over a network is not playing back audio), then the Petition unequivocally fails.

2. “Home Entertainment Embodiment”

To achieve limitation [1.2.3] in the so-called “home entertainment embodiment,” Richenstein’s “home theatre system 1100” (purported “*first playback device*”) would have to playback in synchrony “audio programming” with “wireless headphones 14” or “remote speakers 1130” (purported “*second playback device*”;

see Pet., 28). But, again, Richenstein neither discloses nor suggests anything of this sort.

Indeed, there is no teaching or suggestion in Richenstein of “home theatre system 1100” itself playing back any “audio programming” that it transmits to “wireless headphones 14” or “remote speakers 1130.” *See* Ex.1005, ¶176. Much like the so-called “vehicle infotainment embodiments,” the purported “*first playback device*” in the home setting transmits, and “wireless headphones 14” or “remote speakers 1130” play back. But mere transmission of audio is not the same thing as playing back audio.

3. The Petition’s Sparse Treatment of Limitation [1.2.3]

As noted, the Petition attempts to dispatch limitation [1.2.3] in a single paragraph that relies heavily on the Petitioner’s expert. *See* Pet., 35. In fact, the Petition is virtually devoid of any quotation to actual disclosure from Richenstein for this limitation. *Id.* This is because Richenstein itself is devoid of disclosure relevant to this limitation.

The only disclosed synchronization between Richenstein’s “audio device 34” and a purported “*second playback device*” is synchronizing “the decoding and related operations” of the purported “*second playback device*” to the “sampling and/or A/D operations” of the audio device 34. *See* Ex.1005, ¶66; *accord* Ex.1005:

- ¶53 (“Gap 100 is useful to convey clocking information for synchronizing the [purported ‘*second playback device*’] decoding to the clock rate of [‘audio device 34’]”);
- ¶68 (“[F]or synchronizing the decoding and/or sampling of the IR data, for example, by controlling the clock rate of the D/A conversion functions of DSP 76 [of purported ‘*second playback device*’]”);
- ¶119 (“The PLL [of purported ‘*second playback device*’] is used to generate a synchronized clock, which is used by DSP 710 [of purported ‘*second playback device*’] to sample the IR data signal 712.... Receiver DSP 710 uses the recovered data clock to synchronize with transmitter DSP 600 [of ‘audio device 34’] such that the data encoded and transmitted by transmitter 500 [sic] is received and decoded by receiver 500 at the same rate.”).

In other words, the purported “*second playback device*” attempts to synchronize its rate of decoding received infrared (IR) data that was transmitted by the “audio device 34” to the rate at which “audio device 34” encoded an analog signal to generate the IR data in the first instance. *See id.*

But no POSITA would confuse (a) a second device synchronizing its rate of **decoding** received data to the rate that a first device **encoded** the data with (b) first and second devices **playing back** audio in synchrony. Encoding enables audio to be transmitted over a data network, whereas decoding allows the recipient to recover the audio from its encoded form. *See, e.g.,* Ex.1001, 19:65-67, 31:65-32:2; Ex.2120, 3 (“Encoding is the final step in converting an analog signal into a data representation.”); Ex.2121, 4 (“Encoders are used to create versions of data that can

be easily and safely stored and transmitted.”); Ex.2122, 4 (“In the audio world, a codec is a software application that encodes a digitized audio signal into a different format, often for the purpose of reducing its size.... The encoded file must be decoded to recover the original audio file....”). In turn, playing back audio occurs well after any encoding and decoding occurs. More to the point: encoding and decoding audio are distinct functions from playing back audio.

Notably, the Petition contains a single quotation for limitation [1.2.3], which is suspiciously cropped:

To the extent playing in synchrony requires simultaneous play, Richenstein discloses or suggests simultaneous playback between audio device 34 or home theater system 1100 and other IR playback devices. *See e.g.*, EX1005, [0146] (“*passengers to converse on the telephone via audio device 34 and other IR devices*”), Figs. 19-23 (showing various vehicle infotainment and home entertainment settings for simultaneous and synchronous playback between audio devices 34/1100 and respective receiving speakers 842/940, headsets 14, or speakers 1130); EX1003, ¶¶180-83.

Pet., 35. But this token quotation does not say anything about “audio device 34” playing back in synchrony with another device. In full, that sentence unremarkably states, “[a]s described below, equipment may be provided for two-way communication by passengers to converse on the telephone via audio device 34 and other IR devices according to the invention.” Ex.1005, ¶146. Richenstein goes on

to explain how “two-way communications” enable “audio device 34” to “accept data received by transmitter/receiver 806 from other IR devices in vehicle 900 and channel the data to such devices as... cellular telephone 805.” *Id.*, ¶161. This enables “[t]wo-way headphones 980... to access cellular telephone 805 through audio device 34 to place a call and conduct a two-way conversation.” *Id.*, ¶165. But, again, this disclosure is merely about “audio device 34” transmitting data to a reception device like “headphones 980”; there is nothing about “audio device 34” itself playing back audio, much less in synchrony with another device.

* * *

Thus, for at least these reasons, the Petition fails to show a reasonable likelihood of prevailing on Richenstein disclosing or suggesting limitation [1.2.3].

V. THE CHATTERTON GROUNDS

For the Chatterton grounds, focusing just on the independent claims of the ’357, the Petition fails to show a reasonable likelihood of prevailing on at least limitations [1.1.1]-[1.1.2]/[8.1.1]-[8.1.2]/[9.3.1], [1.2.2]/[8.2.2]/[9.3.2(ii)] and [1.2.3]/[8.2.3]/[9.3.2(iii)], each of which serves as an independent basis to deny institution of the Chatterton grounds. As with Richenstein’s deficiencies, Sonos will discuss Chatterton’s deficiencies with respect to the independent claims using independent claim 1 as being representative.

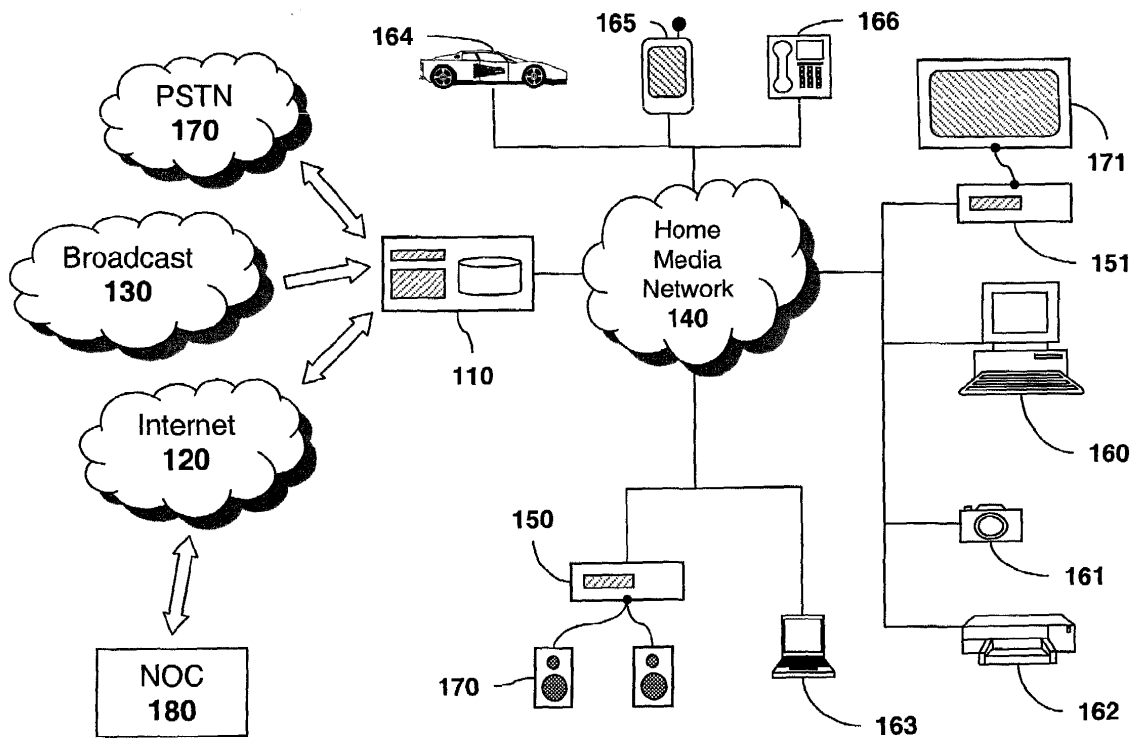
A. Overview of Chatterton

Chatterton was filed on May 24, 2002. Ex.1009, code (22). Chatterton generally relates to “a system and method for converting digital multimedia streams from a first format playable on a first type of system to a second format playable on a second type of system.” *Id.*, 1:8-11.

More specifically, Chatterton explains that “[t]he MPEG-2 standard is one of the most popular audio/video compression standards and is used in a wide range of multimedia applications,” such as for DVDs, but a problem exists in that, “[a]lthough the underlying MPEG-2 compression algorithm is similar for each application, the manner in which the compressed audio/video content is packetized, transmitted, stored and otherwise processed varies considerably from one application to the next.” *Id.*, 1:13-27. In view of this problem, Chatterton states the following desire: “[g]iven the increasing popularity of DVDs and the fact that most users already subscribe to cable and/or satellite services, it would be practical to develop a multimedia system which would allow DVDs and (potentially) other media types to be properly decoded and rendered using a standard transport stream decoder.” *Id.*, 1:62-67.

To that end, Chatterton provides “a digital media server 110” (also referred to as “home media server 110”) that “acts as a central repository for decoding, storing and distributing multimedia content and data.” *Id.*, 3:60-64. With reference to FIG.

1, Chatterton more specifically explains “digital media server [110] coordinates multimedia content from Internet communication channels 120 (e.g., DSL, cable Internet), broadcast communication channels 130 (e.g., digital/analog cable, satellite), and/or Public Switched Telephone Network... communication channels 170 (i.e., standard telephone) to provide a stable, real-time home media network 140 for a plurality of network devices 150-151, 160-166.” *Id.*, 3:59-4:3.



In this respect, “home media server 110” transmits multimedia data to “network devices 150-151, 160-166” in accordance with a streaming protocol, such as “the realtime transport protocol (‘RTP’) and the realtime streaming protocol (‘RTSP’),” among other possibilities. *Id.*, 5:38-62.

Chatterton explains “numerous digital and analog devices may be configured to communicate with the home media server 110 over the home media network 140,” such as “personal computers 160, cameras or digital camcorders 161, printers 162, notebook computers 163, automotive audio/video systems 164, cell phones or personal digital assistants 165, [and] standard telephones 165 (including fax machines),” among other possibilities. *Id.*, 6:20-29.

Chatterton also explains “multimedia nodes 150 and 151... provide an interface to the home media network 140 for audio systems 170 (e.g., audio amplifiers and speakers) and/or video systems 171....” *Id.*, 6:64-7:3. “[M]ultimedia nodes 150, 151 may be equipped with just enough processing power and memory to receive and play back a multimedia signal, with storage and control (e.g., tuning) functions offloaded to the home media server 110.” *Id.*, 6:30-41. Chatterton’s “multimedia node” can include a “local infrared interface 670” by which the node can receive “control commands from a remote control unit (e.g., unit 532 in FIG. 5) operated by a user.” *Id.*, 7:29-31.

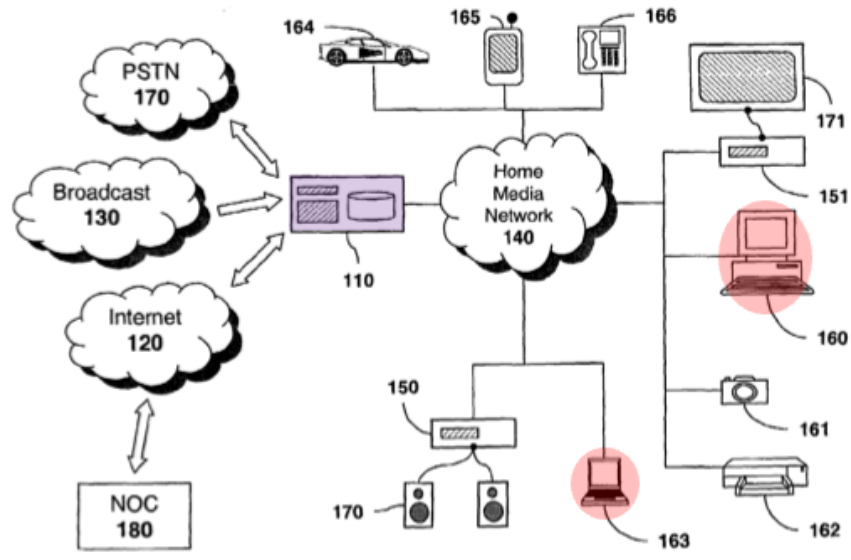
B. Chatterton’s Deficiencies Regarding [1.1.1]-[1.1.2]

Limitations [1.1.1]-[1.1.2] of the ’357 Patent require a “*first playback device*” “*receiving... from a network device configured to control the first playback device and communicatively coupled to the first playback device over a [LAN], control information comprising an address identifying a location of audio information*

available at an audio information source, wherein the audio information source is outside of the LAN.”

For limitation [1.1.1], in the Chatterton grounds, the Petition advances an anticipation and single-reference obviousness theory. *See* Pet., 61. For limitation [1.1.2], in the Chatterton grounds, the Petition only advances an anticipation theory. *See* Pet., 64.

According to the Petition, the claimed “*first playback device*” is Chatterton’s “home media server 110” (Pet., 61; in purple, below), the claimed “*network device*” is any of Chatterton’s “remote control unit 532” or “computers 160/163” (Pet., 61; in red, below), the claimed “*audio information source*” is “broadcast or internet channels” (Pet., 62), and the claimed “*control information comprising an address identifying a location of audio information*” is “information such as broadcast channel or URLs” (Pet., 61-62). But Petitioner’s theories for limitations [1.1.1]-[1.1.2] have numerous flaws.



Ex.1009, FIG. 1 (annotated).

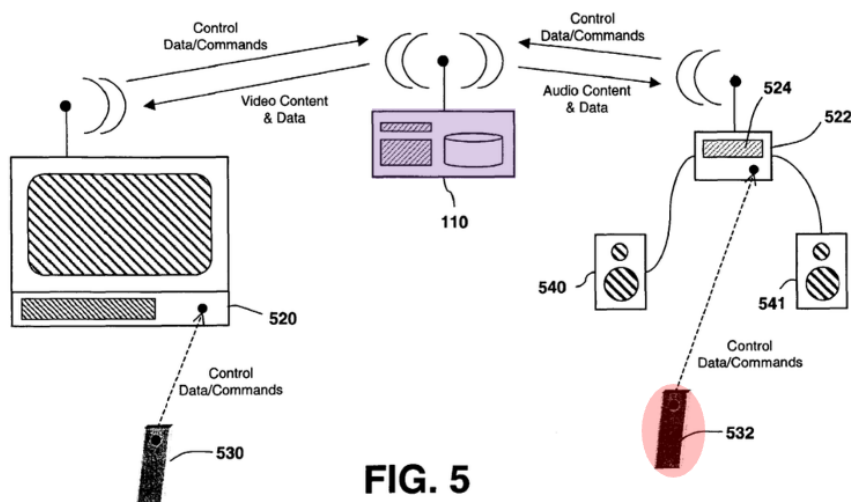


FIG. 5

Id., FIG. 5 (annotated).

Starting with Petitioner’s theory about “remote control unit 532,” that device is not a “network device” and instead is a *conventional infrared* remote control. See Ex.1009, 7:29-31. In fact, Chatterton itself labels certain devices “network devices”

(i.e., “a plurality of network devices 150-151, 160-166” (*id.*, 4:2-3)), but Chatterton never labels “remote control unit 532” a “network device.”

Further, “remote control unit 532” is not described anywhere as sending “control information comprising an address identifying a location of audio information available at an audio information source” to Chatterton’s “home media server 110” (the purported “*first playback device*”); the Petition cites to nothing suggesting otherwise. *See* Pet., 64 (*citing* 14:19-22, 12:55-59, and 6:30-41 as allegedly disclosing “commands [that] identify the audio location by a broadcast channel or a website URL” but none of the cited passages refers to “remote control unit 532”). Thus, this theory fails.

Moving to Petitioner’s theory about “computers 160/163,” those devices are generically described as examples of “digital and analog devices... configured to communicate with the home media server 110 over the home media network 140” (Ex.1009, 6:20-29) and as examples of “destination multimedia devices” to which “home media server 110” transmits multimedia data (*id.*, 18:3-17). While the Petition contends “Chatterton further discloses that home media server 110 may be controlled by... PCs 160/163” (Pet., p.63), none of the Petition’s citations (7:29-32, 8:18-25, 8:49-54, 13:49-55) say anything about computers/PCs 160/163 controlling “home media server 110.” As such, this theory also fails. *See, e.g., Tableau Software*, 2025 WL 1402790, at *4 (an invitation for the Board to speculate as to

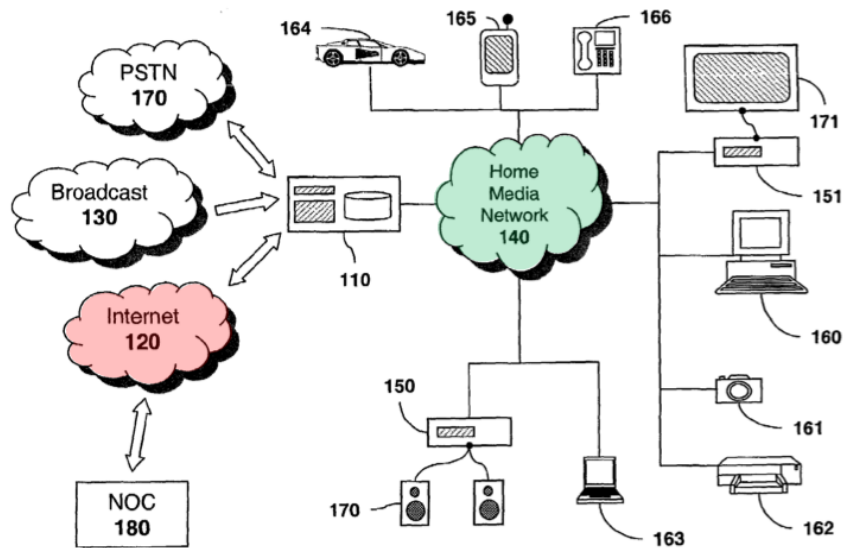
aspects of a reference not described in meaningful detail by the reference is insufficient to show a reasonable likelihood of prevailing).

As a tacit concession of the weaknesses in both the “*network device*” theories, the Petition resorts to asserting “Chatterton additionally discloses home media server 110 can be controlled remotely through a web browser to ‘select broadcast listings and direct the home media server 110 to make recordings,’ or by a monitoring device 180” with citation to 12:3-5 and 15:5-12. Pet., 63. The Petition then baldly concludes that “a POSITA would recognize that these control functions *can* all be performed by computers 160/163.” Pet., 63-64. But this does not save either of the Petition’s “*network device*” theories for several reasons.

To start, what a POSITA might recognize that Chatterton’s computers 160/163 *can* or *could* do is legally insufficient even for an obviousness ground, much less for an anticipation ground. *See, e.g., Net MoneyIN*, 545 F.3d at 1371 (“[I]t is not enough [for anticipation] that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.”); *Belden*, 805 F.3d at 1073 (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (emphasis original).

Further, even assuming computers 160/163 could have performed the functions described at 12:3-5 and 15:5-12 of Chatterton, the Petition fails to explain why that would have made any sense. In this respect, computers 160/163 are on “home media network 140” and local to “home media server 110.” In contrast, both 12:3-5 and 15:5-12 describe functionality that is performed from a “remote location” vis-à-vis the “home media server 110.”

For instance, Chatterton’s passage at 12:3-5 states: “In one embodiment, the [network operation center] NOC 180 may be used as a gateway to access to [sic] the home media server 110 from *a remote location.*” And Chatterton’s FIG. 1 clearly illustrates that “NOC 180” is communicatively coupled with “home media server 110” over a wide area network (i.e., “Internet 120”; in red, below) as opposed to a local area network (i.e., “home media network 140”; in green, below):



Ex.1009, FIG. 1 (annotated).

Similarly, Chatterton's passage at 15:5-12 explains how "a user may publish a home Web page containing up-to-date information on each home appliance or other network device" which enables users "to monitor and control home appliances and systems *from anywhere in the world*," such as "to select broadcast listings and direct the home media server 110 to make recordings (e.g., based on date/time or broadcast ID code)."

The Petition provides no explanation of why this functionality described as being performed at remote locations from the "home media server 110" would instead be performed at a location local to the "home media server 110," much less why they would be performed by "computers 160/163" instead of "remote control unit 532," given that, as explained before, "computers 160/163" are not described as controlling "home media server 110" in the first place (even indirectly).

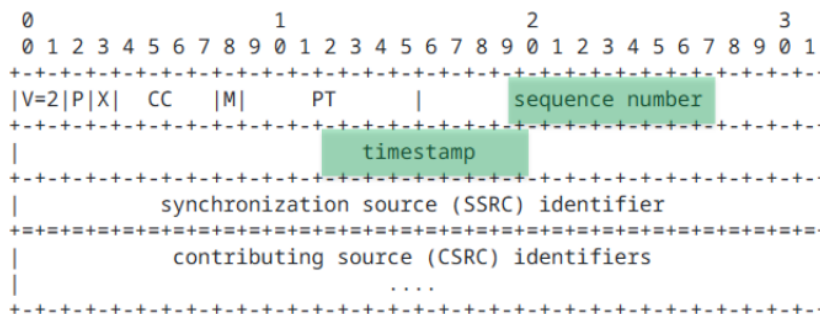
For at least these reasons, the Petition fails to show a reasonable likelihood of prevailing on Chatterton disclosing or suggesting limitations [1.1.1]-[1.1.2].

C. Chatterton's Deficiencies Regarding [1.2.2]

Limitation [1.2.2] of the '357 Patent requires a "*first playback device*" "*transmitting... to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of the first playback device.*"

For “*playback timing information*” (i.e., information indicating when the audio information is to be played back), the Petition only advances an anticipation theory. See Pet., 66-67. At a minimum, the Petition fails to identify anything in Chatterton (or RFC1889) resembling the ’357 Patent’s “*playback timing information*.”

The Petition asserts that Chatterton’s described “timestamping and synchronization information in [the] header” of each “RTP packet” amounts to the ’357 Patent’s “*playback timing information*.” Pet., 66-67. The Petition further asserts that Chatterton’s described “timestamping and synchronization information” refers to the “packet sequence number and sampling timestamps” illustrated in “the RTP standards specified by RFC1889,” and it provides the following annotated figure from RFC1189:



Pet., 67 (annotations Linkplay’s).

The Petition itself, Chatterton’s own words, and RFC1889’s express teachings confirm that this “timestamping and synchronization information” is not “*playback timing information*” since it is not information indicating when the audio information

is to be played back. Instead, Chatterton’s “timestamping and synchronization information” and RFC1889’s standard “packet sequence number and sampling timestamps” are merely information that enable a receiving device to reassemble packets received from a transmitter over a network in the proper order.

[T]he home media server 110 is configured with support for the realtime transport protocol (“RTP”) and the realtime streaming protocol (“RTSP”).... Briefly, RTP is an IP protocol which supports real time transmission of voice and video. An RTP packet... includes timestamping and synchronization information in its header *for proper reassembly at the receiving end.*

Ex.1009, 5:38-46; Pet., 58, 66 (quoting the same).

Indeed, according to the Petition, RFC1889’s “sampling timestamp” “identif[ies] when [the packet] *was created*” and RFC1889’s “sequence number” “identif[ies] *[the packet’s] order* amongst other packets in the stream.” Pet., 59. Similarly, RFC1189 states “[t]he timestamp reflects *the sampling instant* of the first octet in the RTP data packet.” Ex.1010, 10. RFC1189 continues by explaining “[s]everal consecutive RTP packets may have equal timestamps if they are (logically) *generated* at once” and “[c]onsecutive RTP packets may contain timestamps that are not monotonic if the data is not transmitted in the order it *was sampled....*” *Id.*, 11. As for the “sequence number,” RFC1189 explains that “[t]he sequence number increments by one for each RTP data packet sent, and may be used by the receiver to detect packet loss and to *restore* packet *sequence....*” *Id.*, 10.

None of this information provides any indication of something that is to occur in the future, much less specifically provides an indication of when audio is to be played back, as the claimed “*playback timing information*” requires. The “sequence number” by itself provides no indication of when something is to occur and is used for purposes of proper ordering. And the “sampling timestamp” indicates when the RTP packet *was* sampled/created/generated *in the past*.

During the jury trial against D&M, Mr. Millington described how the past-nature of standard RTP timestamps made them unsuitable for his synchronization invention:

Q. Now, you’re referencing RTP here in your write up about synchronization. Was RTP in your [final] synchronization invention?

A. It wasn’t, because it turned out it was basically doing the opposite of what we wanted it to do. RTP was assigning timestamps to things that had happened in the past. Namely, somebody talking into a phone receiver, for example, while synchronization is about several players planning activity in the future, and so RTP wasn’t suitable for what it was that we wanted to do.

Ex.2004, 7 (220:6-15).

Despite the Petition’s own words, Chatterton’s clear disclosure at column 5 lines 38-46, and RFC1189’s clear teachings at page 10, the Petition baldly asserts “a POSITA would recognize the ‘timestamping and synchronization information in its header’ specifically refer to the packet sequence number and sampling timestamps

used to calculate a time to play a packet based on the intervals between the packets and the sampling frequency (*“playback timing information”*)..., as shown in the RTP standards specified by RFC1889.” Pet., 67. But as demonstrated above, Petitioner’s assertion is contradicted by the relied-upon art. *Cf. Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1378 (Fed. Cir. 2017) (concluding “unrebutted” expert testimony must be disregarded when it is “plainly inconsistent with the record.”).

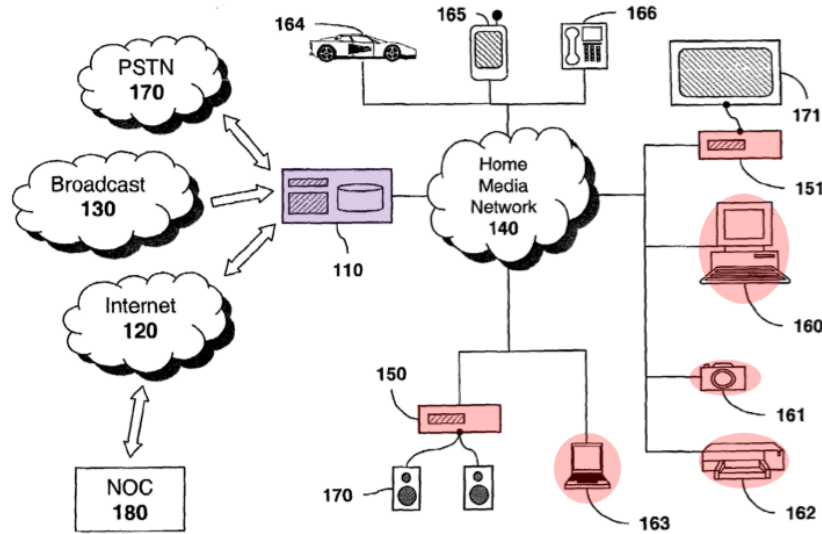
For at least this reason, the Petition fails to show a reasonable likelihood of prevailing on Chatterton disclosing limitation [1.2.2].

D. Chatterton’s Deficiencies Regarding [1.2.3]

Limitation [1.2.3] of the ’357 Patent requires a *“first playback device” “playing back... the audio information in synchrony with the second playback device ...”* The Petition only advances an anticipation theory for this limitation in the Chatterton grounds. *See* Pet., 70-71.

To achieve limitation [1.2.3], Chatterton’s “home media server 110” (purported *“first playback device”*; in purple, below) would have to playback in synchrony “audio content... on broadcast or internet channels” (purported *“audio information”* from *“the audio information source outside of the LAN”*) with any of “devices 160-163” or “multimedia nodes 150 and 151” (purported *“second playback*

device”; in red, below). But Chatterton fails to suggest, much less disclose, anything of this sort.



Ex.1009, FIG. 1 (annotated).

Indeed, there is no teaching or suggestion in Chatterton of “home media server 110” playing back any audio information that it transmits to another device. Simply put, much like the relationship between Richenstein’s “audio device 34” and Richenstein’s purported “*second playback device[s]*,” Chatterton’s “home media server 110” transmits and (some of) Chatterton’s purported “*second playback device[s]*” play back. But as the claim language of the ’357 Patent makes clear, mere transmission of audio information is not the same thing as playing back audio information.

As such, the Petition’s contentions about “home media server 110” providing “real time transmission of voice and video,” “simultaneous streams at once,” and

“simultaneous distribution of realtime streams of the same content” (Pet., 70-71) fail to amount to “home media server 110” *playing back* any audio information it provides to another device, much less doing so in synchrony with another device.

And as with Richenstein, the Petition’s heavy reliance on expert testimony to gap fill for this limitation and the Petition’s inability to quote actual disclosure from Chatterton of “home media server 110” playing back audio (that it transmits to a purported “*second playback device*”) in synchrony with a purported “*second playback device*” speaks volumes. *See* Pet., 70-71.

Thus, for at least these reasons, the Petition fails to establish a reasonable likelihood of success that Chatterton satisfies limitation [1.2.3].

VI. CONCLUSION

Given its weak merits, this Petition should be denied. Each of the six grounds is premised on Richenstein or Chatterton supplying the limitations of the challenged independent claims. But because Richenstein and Chatterton are not concerned with the problems faced by Mr. Millington, both fail to disclose numerous limitations of the independent claims, including limitations [1.1.1]-[1.1.2], [1.2.2], and [1.2.3] of the representative independent claim. Richenstein and Chatterton each failing to supply any one of these limitations warrants denial of institution. Both failing to supply each of these limitations compels denial.

Respectfully submitted,

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Dated: July 11, 2025

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