

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY GROUP CORPORATION, SONY CORPORATION, SONY
CORPORATION OF AMERICA, AND SONY ELECTRONICS, INC.,
Petitioner,

v.

INMUSIC BRANDS, INC.,
Patent Owner.

IPR2023-00294
Patent 7,567,498 B2

Before DANIEL J. GALLIGAN, CHRISTAP. ZADO, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

ZADO, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

Sony Group Corporation, Sony Corporation, Sony Corporation of America, and Sony Electronics, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.” or “Petition”) to institute an *inter partes* review of claims 1–6 (“the challenged claims”) of U.S. Patent No. 7,567,498 B2 (Ex. 1001, “the ’498 patent”). InMusic Brands, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization,¹ Petitioner filed a Reply (Paper 8, “Pet. Reply” or “Reply”) and Patent Owner filed a Sur-Reply (Paper 9, “PO Sur-Reply” or “Sur-Reply”).

An *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the entirety of the current record, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims, and we institute an *inter partes* review.

B. *Real Party-in-Interest*

Petitioner identifies itself as the only real party in interest. Pet. 7. Patent Owner identifies itself as the only real party in interest. Paper 5, 2.

C. *Related Matters*

The parties identify the following as related district court matters in which the ’498 patent was asserted:

¹ See our May 24, 2023 Order authorizing a Reply and Sur-Reply. Paper 7.

InMusic Brands, Inc. v. Sony Corporation of America, No. 1:22-cv-06602 (S.D.N.Y.) (filed Aug. 3, 2022) (dismissed);²

InMusic Brands, Inc. v. Innovative Technology Electronics, LLC, No. 2:22-cv-02670 (E.D.N.Y.) (filed May 9, 2022) (active);

InMusic Brands, Inc. v. Music Hall, LLC, No. 2:22-cv-02575 (E.D.N.Y.) (filed May 5, 2022) (dismissed);

InMusic Brands, Inc. v. Pyle Pro Audio Corp., No. 1:22-cv-02305 (E.D.N.Y.) (filed Apr. 22, 2022) (active);

InMusic Brands, Inc. v. Spectra Merchandising International, Inc., No. 1:21-cv-05882 (N.D.Ill.) (filed Nov. 3, 2021) (dismissed); and

InMusic Brands, Inc. v. Curtis International Ltd., No. 1:21-cv-00287 (D.R.I.) (filed July 12, 2021) (dismissed).

Pet. 7–8; Paper 5, 2–3.

D. The '498 Patent (Ex. 1001)

The '498 patent is titled “Phonographic Turntable with Built-In Audio to USB or Firewire Device” and relates generally to “a turntable [e.g., vinyl record player] which includes an internal analog to digital converter and a controller for a standard digital format.” Ex. 1001, code (54), Abstract. The '498 patent compares analog audio and digital audio, stating that “[t]he standard phonographic turntable, as an analog device, is diminishing in commercial popularity due to the ever increasing capabilities of digital music equipment.” Ex. 1001, 1:13–15. However, because the standard

² The parties Petitioner identify the proceeding as No. 1:22-cv-06609. Pet. 7; Paper 5, 2. In addition, Petitioner identifies the case as active. Pet. 7. However, the proceeding is No. 1:22-cv-06602, and after the filing of the Petition the case was dismissed. Ex. 2001 (district court dismissal order).

phonographic turntable “is embedded within the disk jockey culture at dance clubs and similar institutions,” efforts have been made to digitize analog audio signals generated by a turntable. *Id.* at 1:22–38. For example, some applications have connected the turntable’s line level output (which outputs an analog audio signal) to an analog input of a computer soundcard, or have used a device external to the turntable to perform analog to digital conversion between the turntable and the computer soundcard. *Id.* at 1:25–30. In another example, some turntables include a Sony/Phillips Digital Interface (SPDIF) to provide digital audio output. *Id.* at 1:35–38. However, according to the ’498 patent, the SPDIF “is not a standard protocol such as USB (universal serial bus) or firewire (IEEE 1394).” *Id.*

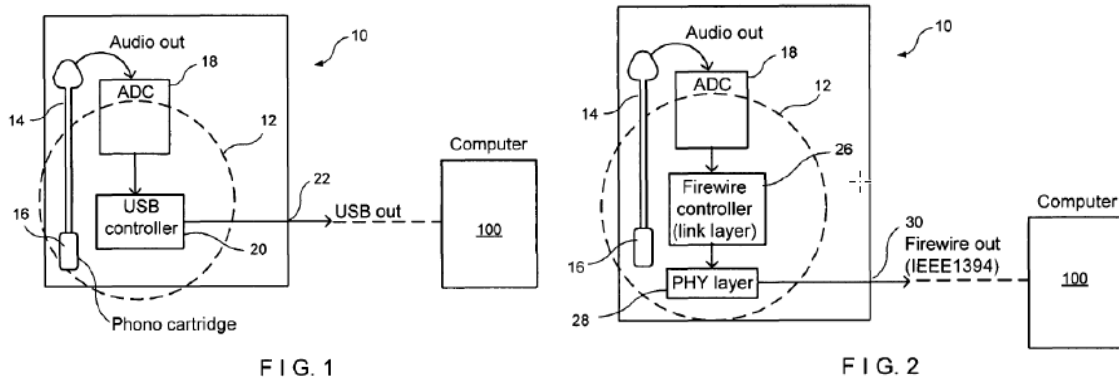
In light of the above-mentioned considerations, the ’498 patent states the objects of the invention are to provide a turntable that: (1) includes digital output in a standard protocol, such as USB or firewire; (2) eliminates the need for external audio conversion devices; and (3) maintains the familiar feel of a standard turntable to a disk jockey or similar operator. *Id.* at 1:43–51. According to the ’498 patent, the objects of the invention are “attained by providing a turntable with such conventional features as a revolving platter, a pivoting tonearm and an analog phono cartridge and further providing an audio conversion device to USB, firewire or other standard computer digital communication protocol internally within the turntable.” *Id.* at 1: 52–57.

The detailed description of the preferred embodiments consists of a single column, lines 7 to 58. The ’498 patent describes the turntable as having a conventional tonearm, conventional rotatable platter, and conventional phono cartridge for generating a conventional analog electrical

audio signal from a conventional long playing (LP) vinyl record. *Id.* at 2:10–18. The conventional audio signal is received by an analog to digital converter (ADC) that outputs a signal to a USB controller. *Id.* at 2:18–23. The alleged novelty is that the ADC and the USB controller are within the turntable. *Id.* The USB controller causes a USB signal to be generated and output via a USB jack to an external computer so that the USB signal (a digital audio signal) can be processed by a computer. *Id.* The detailed description of the USB embodiment is only 22 lines, roughly half of which describe conventional features of a turntable. *Id.* at 2:7–28. To the extent that the internal ADC and USB controller are described, the '498 patent simply states in a few sentences what these components do and where they are located. *Id.* at 2:18–28.

The remainder of the detailed description is of a firewire embodiment whose description is similar to that of the USB embodiment and consists of roughly 25 lines. *Id.* at 2:29–52.

Figures 1 and 2 of the '498 patent, reproduced below, illustrate the disclosed invention.



Figures 1 and 2 of the '498 patent each show a schematic diagram of a turntable that includes, respectively, a USB controller and firewire controller.

Figures 1 and 2 each show a schematic diagram of a turntable that is directed, respectively, to a USB embodiment and firewire embodiment. Each Figure shows turntable 10 having tonearm 14, phono cartridge 16, rotatable platter 12, and ADC 18. *Id.* at 2:9–19, 2:29–40. Figure 1 further includes USB controller 20, and Figure 2 further includes firewire controller 26. *Id.* at 2:19–22, 2:40–46.

E. Challenged Claims

Petitioner challenges claims 1–6 of the '498 patent. Pet. 8. Claim 1 is the only independent claim of the '498 patent. Claim 1 is reproduced below with annotations in brackets as set forth in the Petition.

1. [1a] A turntable including:

[1b] a rotatable platter;

[1c] a tonearm for receiving a phono cartridge for generating an analog audio signal representative of an audio recording;

[1d] an analog to digital converter for receiving an analog audio signal from the phono cartridge; and

[1e] a controller responsive to said analog to digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal;

[1f] wherein said analog to digital converter and said controller are included within said turntable; and

[1g] wherein said output digital audio signal is output from said turntable and uses standard computer protocol.

Ex. 1001, 2:60–3:7; Pet. 17.

F. Asserted Prior Art References and Declarations

Reference or Declaration	Date	Exhibit No.
EP 0 999 553 A1 (“Cortellesi”)	May 10, 2000	Ex. 1004
U.S. Publication No. 2004/0089795 A1 (“Spencer”)	May 13, 2004	Ex. 1005
U.S. Publication No. 2003/0206506 A1 (“Cohen”)	Nov. 6, 2003	Ex. 1006
U.S. Publication No. 2003/0131715 A1 (“Georges”)	July 17, 2003	Ex. 1013
Declaration of Dr. Todd K. Moon (“Moon Dec.”)	Nov. 7, 2022	Ex. 1002

G. Asserted Grounds of Unpatentability

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1, 2, 4–6	103	Cortellesi
3	103	Cortellesi, Georges
1, 2, 4–6	103	Spencer, Cohen
3	103	Spencer, Cohen, Georges

II. ANALYSIS

A. Discretionary Denial of Institution under 35 U.S.C. § 314(a)

Patent Owner argues we should exercise our discretion under 35 U.S.C. § 314(a) to deny institution, applying the factors set forth in *Fintiv*.³ Prelim. Resp. 3–9. *Fintiv* articulates a set of nonexclusive factors the PTAB

³ *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”).

considers on a case-specific basis where there is parallel district court litigation. The factors are:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

Fintiv at 6. In determining whether to discretionarily deny institution under § 314(a), the Board applies the guidance set forth in the USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (“Guidance Memo”) (June 21, 2022).⁴

Here, the parallel district court proceeding—i.e., *InMusic Brands, Inc. v. Sony Corporation of America*, No. 1:22-cv-06609 (S.D.N.Y.) (“*inMusic Brands*”)—has been dismissed. Specifically, between the filing of the Petition and Preliminary Response, the district court held claims 1–6 of the ’498 patent invalid under § 101 and dismissed the case. *See* Ex. 2001

⁴ Available at Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

(district court order dismissing *inMusic Brands*). Furthermore, prior to filing the Preliminary Response, Patent Owner filed a notice of appeal to the Federal Circuit appealing the district court's dismissal order. Ex. 1027.

In light of the district court's invalidity determination and dismissal, Patent Owner maintains that we should discretionarily deny institution. Prelim. Resp. 3–9, Sur-Reply. Petitioner argues otherwise, in view of Patent Owner's appeal of the district court's dismissal. Pet. 74–76; Reply. For reasons discussed below, we decline to exercise discretionary denial of institution based on § 314(a).

In pertinent part, *Fintiv* is concerned with inefficiency and duplication of efforts when there are parallel proceedings before the PTAB and district court. *Fintiv* at 5–6 (explaining the factors “relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding”); *id.* at 6 (stating with regard to factor 1, “[a] district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.”). Here, as is discussed below in the context of the *Fintiv* factors, there is little concern of inefficiency and duplication of efforts if this IPR proceeds.

1. *Factor 1 (“whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted”)*

Patent Owner argues that the district court proceeding cannot be stayed, because it has been dismissed, and that this factor therefore weighs in favor of denial. Prelim. Resp. 4–5. Petitioner argues, on the other hand, that the filing of a notice of appeal of the district court dismissal has the same effect as a stay. Reply 3.

The purpose of factor 1 is to allay concerns of inefficiency and duplication of efforts. *Fintiv* at 6 (stating with regard to factor 1, “[a] district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.”). The circumstances presented here alleviate concerns of inefficiency and duplication of efforts between the PTAB and the district court. The district court has dismissed the proceeding and Patent Owner has filed a notice of appeal, thereby allaying concerns that the district court might duplicate efforts occurring elsewhere. We agree with Petitioner that under the present circumstances, “if the petition [in this case] is granted the parties are unlikely to be forced to simultaneously undertake both the IPR and an expensive [district court] trial” and an appeal has the same effect as a stay. Reply 3.

For the foregoing reasons, factor 1 weighs against exercising our discretion to deny institution.

2. *Factor 2 (“proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision”)*

Patent Owner argues that the district court has already reached final judgment—obviating the need for a trial date—and this factor therefore weighs in favor of denial because the Board cannot reach a decision on the merits prior to a trial that never will occur. Prelim. Resp. 5. In view of Patent Owner’s filing of a notice of appeal, Patent Owner’s argument that “there will be no trial date” (*id.*) is premature. We view this factor bearing in mind the purpose of *Fintiv*, which as we discussed above is to avoid inefficiencies and duplication of efforts. Consistent with that articulated purpose, we consider whether there is a trial date that raises concerns of

inefficiencies and duplication of efforts. At this stage, there is no projected trial date. Moreover, it seems unlikely that the district court proceeding, if remanded to the district court by the Federal Circuit, will have a trial date prior to the statutory deadline for rendering a decision in this IPR. For these reasons, we find there is little chance of inefficiency or duplicative efforts between this IPR and the district court proceeding.

For the foregoing reasons, factor 2 weighs against exercising our discretion to deny institution.

3. *Factor 3 (“investment in the parallel proceeding by the court and the parties”)*

Petitioner argues that little investment has been made in the district court proceeding (Pet. 75), whereas Patent Owner argues the district court’s dismissal upon determining the Challenged Claims invalid is a “substantive order” that weighs in favor of denying institution (Prelim. Resp. 5–6).

Despite the district court’s dismissal order, we find no evidence that the court or the parties have invested much in the district court case. The district court complaint was filed on August 3, 2022. Ex. 3001 (docket entry 1). Aside from housekeeping, the only activity in the case involved the filing of a motion to dismiss (Ex. 3001, docket entry 23) on October 31, 2022 (within 3 months of the filing of the complaint) on the grounds that the claims are patent ineligible under § 101, a related opposition (Ex. 3001, docket entry 32), reply (Ex. 3001, docket entry 37), and order granting dismissal (Ex. 3001, docket entry 39; Ex. 2001). As to the investment by the court and parties with regard to litigating the issue of patent eligibility under § 101, there is no evidence in the record of much investment by the parties. In addition, to the extent the parties have invested in litigating § 101 related

issues, there is little overlap between such issues and investments that will be made in this proceeding in determining patentability under § 103. Therefore, this factor does not implicate duplication of efforts or inconsistent results that *Fintiv* seeks to avoid.

Also weighing in favor of not exercising discretionary denial, the Petition was filed expeditiously. Petitioner filed this IPR on December 1, 2022, only four months after the filing of the district court case on August 3, 2022. As stated in *Fintiv*, where a petitioner “filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution.” *Fintiv* at 11.

For the foregoing reasons, factor 3 weighs against exercising our discretion to deny institution.

4. *Factor 4 (“overlap between issues raised in the petition and in the parallel proceeding”)*

Patent Owner argues that because both § 101 (raised in district court) and § 103 (raised in this proceeding) relate to patentability, we should treat them as overlapping issues for the purposes of evaluating this factor. Prelim. Resp. 6. Patent Owner misinterprets the meaning of the term overlap.

In the context of this *Fintiv* factor, overlap refers to whether the claims, grounds, arguments, and evidence are the same or substantially the same. *Fintiv* at 12–13 (explaining where a petition includes “the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial,” whereas “if the petition includes materially different grounds, arguments, and/or

evidence than those presented in district court, this fact has tended to weigh against exercising discretion to deny institution.”).

Here, there is no overlap because the ground raised in district court—i.e., patent eligibility under § 101—is not raised in the Petition, and indeed, cannot be raised in an IPR to challenge issued patent claims. Conversely, the grounds raised in the Petition, under § 103, have not been raised in the district court proceeding, and cannot be prior to any potential future remand from the Federal Circuit should the § 101 determination be reversed.

For the foregoing reasons, factor 4 weighs against exercising our discretion to deny institution.

5. *Factor 5 (“whether the petitioner and the defendant in the parallel proceeding are the same party”)*

Sony Corporation of America is both a named defendant in the district court litigation and a named party in the instant Petition. Accordingly, Petitioner and the defendant in the parallel proceeding are, for purposes of this factor, sufficiently related such that we should not decline to exercise our discretion based on dissimilarity of parties.

For the foregoing reasons, factor 5 weighs in favor of exercising our discretion to deny institution.

6. *Factor 6 (“other circumstances that impact the Board’s exercise of discretion, including the merits”)*

With regard to this factor, *Fintiv* states “the factors considered in the exercise of discretion are part of a balanced assessment of all the relevant circumstances in the case, including the merits.” *Fintiv* at 14. The Guidance Memo elaborates upon the merits consideration, stating

Fintiv factor six reflects that the PTAB considers the merits of a petitioner's challenge when determining whether to institute a post-grant proceeding in view of parallel district court litigation. Where the information presented at the institution stage is merely sufficient to meet the statutory institution threshold, the PTAB has the authority, where warranted, to exercise discretion to deny institution in view of the other *Fintiv* factors. In contrast, where the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.

Guidance Memo at 4–5 (citations omitted).

In a precedential decision on Director review, the Director clarifies that “in circumstances where the Board determines that the other *Fintiv* factors 1–5 do not favor discretionary denial, the Board shall decline to discretionarily deny under *Fintiv* without reaching the compelling merits analysis. In circumstances where, however, the Board’s analysis of *Fintiv* factors 1–5 favors denial of institution, the Board shall then assess compelling merits.” *Commscope Technologies LLC, v. Dali Wireless, Inc.*, IPR2012-01242, Paper 23 at 4–5 (Feb. 27, 2023) (precedential) (“*Commscope*”).

We determine that factors 1–5 do not favor discretionary denial. As discussed above, factors 1–4 weigh against exercising our discretion to deny institution. Although factor 5 weighs in favor of denial due to similarity of parties, when balanced with factors 1–4, there is no indication of inefficiencies or duplication of efforts between the PTAB and the district court, as discussed above, and factors 1–5 taken together weigh against discretionary denial.

Therefore, consistent with *Commscope*, because *Fintiv* factors 1–5 do not favor discretionary denial, we decline to discretionarily deny institution under *Fintiv*, without reaching the compelling merits analysis.

B. Statutory Authority to Institute

Patent Owner contends that the Board lacks statutory authority to institute *inter partes* review as a result of the district court’s determination that the challenged claims are invalid under 35 U.S.C. § 101. Prelim. Resp. 1–2. Specifically, Patent Owner asserts that under 35 U.S.C. § 311(b), Board review is confined to “*existing* patent claims,” and claims (such as those challenged here) that have been “finally adjudicated to be invalid by a district court prior to the Board’s decision on institution of an IPR cannot subsequently be ‘cancel[ed] as unpatentable’ under § 311(b) as they no longer exist.” *Id.* at 2. Patent Owner argues further that it is irrelevant whether a district court judgement of invalidity is under appeal.⁵ *Id.* (citing *Pharmacia & Upjohn Co. v. Mylan Pharma., Inc.*, 170 F.3d 1373, 1381 (Fed. Cir. 1999); *Uniloc USA Inc. v. Motorola Mobility LLC*, 52 F.4th 1340, 1347-48 (Fed. Cir. 2022)). In support of its arguments, Patent Owner cites to *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, IPR2022-01368,

⁵ We note that Patent Owner failed to inform the Board of its Notice of Appeal to the Federal Circuit of the district court’s invalidity determination. It was Petitioner who first informed the Board. Pet. Reply 2; Ex. 1027. In pertinent part, the Notice of Appeal was filed April 10, 2023—17 days before the filing of the Preliminary Response—and therefore should have been mentioned in the Preliminary Response. Despite Patent Owner’s argument that it is irrelevant whether an appeal has been filed, it is for the adjudicating body to determine relevance. Patent Owner is reminded of its duty of candor before the Board.

Paper 12 at 9–13 (PTAB Feb. 8, 2023) (“*Volvo Penta*”), in which the panel determined the Board lacked statutory authority to institute *inter partes* review in light of a district court judgement of invalidity under § 101. *Id.* at 1. Patent Owner relies on the analysis set forth in the panel decision in *Volva Penta*.⁶

We determine that we do not, as a result of the district court’s invalidity determination, lack statutory authority to institute *inter partes* review.

Section 311(b) of title 35 of the United States Code provides that a petitioner may request to cancel one or more claims as unpatentable pursuant to 35 U.S.C. § 311(b). 35 U.S.C. § 311(b) (“A petitioner in an *inter partes* review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patent or printed publications”). Upon a final written decision of unpatentability and after the end of the appeal period, 35 U.S.C. § 318(b) provides that the Director shall issue a certificate canceling any claim finally determined to be unpatentable. 35 U.S.C. § 318(b) (“If the Patent Trial and Appeal Board issues a final written decision under subsection (a) and the time for appeal has expired or any appeal has terminated, the Director shall publish a certificate canceling any claim of the patent finally determined to be unpatentable.”). Significantly, a

⁶ The panel decision in *Volva Penta* upon which Patent Owner relies has since been vacated in a Decision on Director Review. *Volvo Penta of the Americas, LLC. v. Brunswick Corp.*, IPR2022-01368, Paper 15 (May 2, 2023) (“*Volvo Penta* Decision on Director Review”).

certificate of cancelation issues only after the time for appeal has expired or any appeal has terminated. *Id.*

In contrast with the explicit statutory provisions discussed above, no similar provision provides explicitly for cancelation of claims as a result of an invalidity judgment in district court. In the absence of such statutory provision, Patent Owner argues the claims nonetheless should be treated as canceled, asserting that the claims have been “finally adjudicated” and therefore “cannot subsequently be ‘cancel[ed] as unpatentable’ under § 311(b) as they no longer exist.” Prelim. Resp. 2. First, we disagree that the challenged claims have been finally adjudicated. Although the district court has found the challenged claims invalid under § 101, the invalidity determination is not fully adjudicated because it is subject to further judicial review before the Federal Circuit. *See Volvo Penta* Decision on Director Review at 5–6 (arriving at the same conclusion). Indeed, Patent Owner has filed a Notice of Appeal to the Federal Circuit. Ex. 1027. In arguing that the claims here have been “finally adjudicated,” Patent Owner, as the panel did in *Volvo Penta*, appears to have borrowed from collateral estoppel principles. Prelim. Resp. 2 (citing *Pharmacia & Upjohn Co. v. Mylan Pharma., Inc.*, 170 F.3d 1373, 1381 (Fed. Cir. 1999) (quoting *SSIH Equip. S.A. v. U.S. Int’l Trade Comm’n*, 718 F.2d 365, 370 (Fed. Cir. 1983) and *Uniloc USA Inc. v. Motorola Mobility LLC*, 52 F.4th 1340, 1347-48 (Fed. Cir. 2022)). As articulated in the *Volvo Penta* Decision on Director Review, these principles “do[] not speak to the appropriate interpretation of § 311(b).” *Volvo Penta* Decision on Director Review at 5. The authority cited by Patent Owner nowhere suggests that the Patent Office is precluded

from canceling claims it finds unpatentable in an *inter partes* review in the manner authorized by statute under §§ 311(b) and 318(b).

For these reasons, we determine that we do not, as a result of the district court's invalidity determination, lack statutory authority to institute *inter partes* review.

C. Level of Ordinary Skill

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends “[t]he **level of ordinary skill** encompassed a person having a Bachelor’s Degree in electrical engineering or a related field and three years of experience relating to audio technology or signal processing, where a higher level of education may substitute for experience.” Pet. 32–33 (citing Ex. 1002 ¶ 69). At this stage in the proceeding, Patent Owner does not provide a contention as to the level of ordinary skill in the art.

Based on the record presented, including our review of the '498 patent and the types of problems and solutions described in the patent and the cited prior art, we adopt Petitioner's assessment of the level of ordinary skill in the art and apply it for purposes of this Decision. To the extent the parties disagree as to the level of ordinary skill in the art, the parties may address the issue in their papers during trial and explain, for example, how a different definition would impact the obviousness analysis of the challenged claims.

D. Claim Construction

Pursuant to 37 C.F.R. § 42.100(b), we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)); *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the

extent necessary to resolve the controversy.” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes a construction for the term “turntable.” Pet. 20–21. Patent Owner is silent on the issue of claim construction and does not raise any arguments that necessitate a construction of “turntable.”

For purposes of this Decision, we determine that no claim terms require express construction. *See Vivid Techs.*, 200 F.3d at 803 (holding that only terms that are in controversy need to be construed, and “only to the extent necessary to resolve the controversy”).

E. Patentability Challenges

1. Principles of Law: Obviousness

A claim is unpatentable as obvious under 35 U.S.C. § 103 if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.⁷ *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

⁷ The current record does not present or address any objective evidence of nonobviousness.

2. *Relevant Prior Art*

a) Cortellesi (Ex. 1004)

Cortellesi is a European Patent Application, published May 10, 2000, titled “Portable Apparatus for Storing, Handling and Listening to Pieces of Music.” Ex. 1004, codes (12), (43), (54).

Cortellesi discloses “[a]n apparatus for disk jockeys to store, handle and play pieces of music in succession,” wherein the apparatus includes “means for receiving and storing the desired pieces of music in digital form, means for the digital/analog conversion of the selected pieces of music to play/listen to them, and means for allowing the disk jockey to change manually the rhythm, of the pieces of music to be played in real time.” *Id.* Abstract.

Cortellesi explains at least two requirements of disk jockeys when playing music in venues such as discos, dancehalls, and restaurants: (1) having access to several pieces of music, and (2) being able to personalize music playback through techniques such as creating “scratching” effects with a record. *Id.* at 1:3–11. Cortellesi discloses a portable apparatus that satisfies these two requirements. *Id.* at 1:18–23, 1:40–46.

As to (1), Cortellesi’s portable apparatus includes a dedicated hard disk that stores digitally several pieces of music. *Id.* at 1:18–39; *see also id.* at 5:7–11 (disclosing storing unit that receives digital pieces of music from both an analog to digital converter that receives analog audio signals and from digital audio sources).

As to (2), Cortellesi’s portable apparatus includes a turntable that, in addition to including features to play conventional vinyl long playing (LP) records, includes features to play a virtual disk (VD) that a disk jockey

performs “scratching” operations on. *Id.* at 1:40–46, 4:40–46. The VD is similar to a conventional vinyl LP record, except it includes metal balls positioned within that allow sensor SD to determine location/position on the VD by detecting magnetic flux created by the metal balls. *Id.* at 4:33–46. Sensor SD generates an analog signal that directly correlates with the position of the VD and further contains information about the VD’s speed and rotation. *Id.* at 4:47–50. The analog signals generated by sensor SD are converted to digital signals by analog to digital converter CA/D, and processing unit EC uses the digital signals to determine “extremely precise information of position and speed” of the VD. *Id.* at 4:50–55. The position and speed information of the VD is used to synchronize the playing of manual “scratching” operations performed on the VD by the disk jockey with the playing of digital music stored in the portable apparatus’s storing unit. *Id.* at 4:56–5:11.

Figures 1 and 2 of Cortellesi are block diagrams of the portable apparatus, wherein Figure 2, reproduced below, further includes depiction of a VD and sensor SD. *Id.* at 1:54–58.

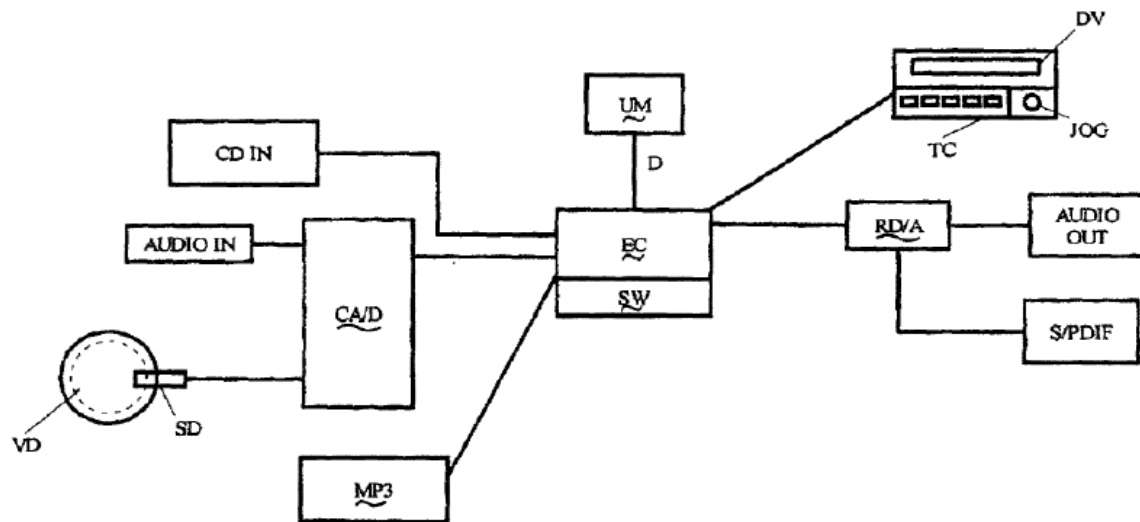


FIG. 2

Figure 2 of Cortellessi depicts a block diagram of the portable device.

Figure 2 of Cortellessi is a block diagram of the portable device, and shows analog to digital converter CA/D receiving input from sensor SD, wherein sensor SD reads information from VD. Ex. 1004, Fig. 2. As shown in Figure 2, processing unit EC receives music in digital form from either an internal or external unit, wherein the unit may be, e.g., a compact disc (CD) player. *Id.* at 2:13–18 (“the portable apparatus . . . consists of a central processing unit capable of receiving and recording the desired music in digital form through a plurality of inside and outside units”), Fig. 1 (blocks labeled “EC” and “CD”), 3:25–29 (“Processing unit EC can be connected directly to compact disk player CD”). The EC may send the digital music signals to playing unit RD/A, wherein playing unit RD/A either converts digital music signals to analog music signals and outputs such analog signals either as stereo audio signals, or outputs the digital music signals in the S/PDIF standard. *Id.* at 2:50–54. As shown in Figure 1, not reproduced

here, the portable apparatus also includes a USB-interface that “allows the apparatus to be directly connected to a personal computer for digital data processing/transmitting by software programs that improve the quality of the recorded pieces of music.” *Id.* at 4:8–13, Fig. 1 (block labeled “USB”).

Figure 4 of Cortellesi, reproduced below, illustrates the portable apparatus with a conventional turntable that further includes sensor SD for reading information from VD.

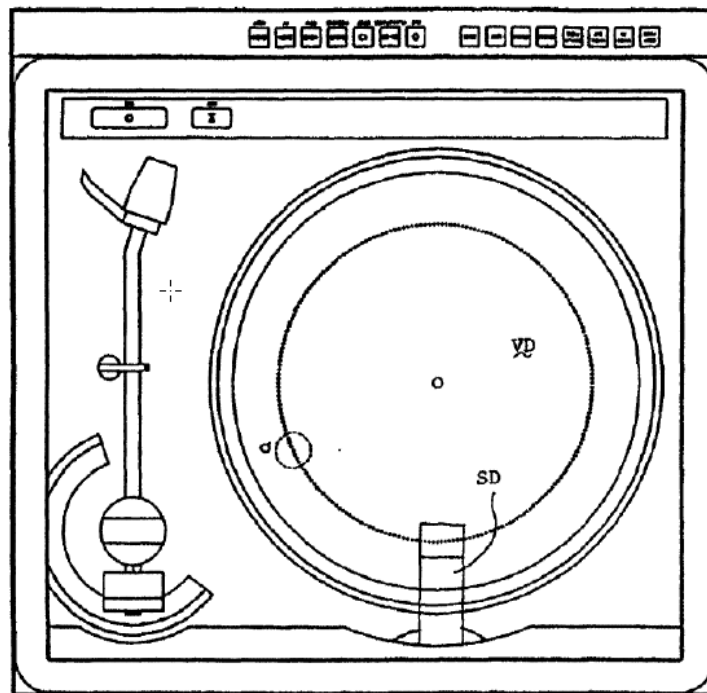


FIG. 4

Figure 4 of Cortellesi “is a top plan view of the portable apparatus provided with a record player carrying the virtual disk provided with a reading sensor.” Ex. 1004, 2:8–10.

Figure 4 of Cortellesi is a top plan view of the portable apparatus provided with a turntable that includes sensor SD. *Id.* at 2:8–10, Fig. 4. Cortellesi explains that the turntable is “of a common record player,” and includes a “pick-up arm” (i.e., tone arm). *Id.* at 4:40–43.

b) Spencer (Ex. 1005)

Spencer is a U.S. Patent Publication, published May 13, 2004, titled “Method and System for Synchronizing Information Specific to a Location on a Surface with an External Source.” Ex. 1005, codes (12), (43), (54).

With regard to vinyl (analog) records played on a turntable, analog audio output signals are based on grooves within a record surface. *Id.* ¶ 36 (explaining a stylus runs within grooves of a record, and a phono cartridge including a transducer for converting mechanical vibrations sensed by the stylus are converted into analog audio signals). An aim of Spencer is to “synchronize output signals of digital external data sources with audio from an analog record.” *Id.* ¶ 33; *see also id.* ¶ 4 (stating a goal of disk jockeys (DJs) “involves the locking or synchronization of signals (e.g., audio, video, etc.) between at least two devices”). Spencer states that one prior technique involved “playing,” on a conventional turntable, a vinyl record containing embedded timecodes, and using the timecode data to synchronize the analog audio of the vinyl record with an external digital sound source such as a CD player. *Id.* ¶ 5. Spencer explains a downside to using timecodes embedded on vinyl records is that timecodes may wear over time. *Id.* Spencer seeks to overcome this shortcoming by, instead of using timecodes for synchronization, devising a turntable that tracks dimensional information of stylus location within a groove of the vinyl record. *Id.* ¶¶ 7, 10.

Spencer discloses a system and method for determining the position/location of a stylus needle on a record surface and using such information to synchronize the analog audio waveform corresponding to that position/location with a digital audio waveform. *Id.* ¶ 26. Specifically, Spencer discloses “controller unit 100, e.g., a turntable unit” that includes

sensors that aid in determining the location of a stylus or needle within a groove of a rotating record. *Id.* Abstract, ¶ 30. Spencer's turntable (i.e., controller unit 100) includes features of a conventional turntable, including turntable platter 122, tone arm assembly 120 including tone arm 124, and phono cartridge 122. *Id.* ¶¶ 33–34, 36, Fig. 2. Spencer's turntable further includes tone arm encoder 128 that detects the position of tone arm 124 via “well known optical, magnetic, or mechanical methods” and sends, via output ports 102, signals indicating the position of tone arm 124 to external data processor 200. *Id.* ¶¶ 37–39.

In order to synchronize an external digital audio signal with “an audio waveform specific to a predetermined location on a record,” Spencer matches stylus/needle location with a portion of a sampled audio waveform. *Id.* ¶ 26. As noted above, information useful in determining stylus/needle location is generated by detecting the position of a tone arm relative to a tone arm encoder:

A tone arm encoder 128 may be arranged on the controller unit 100 within an operable proximity of the tone arm 124 when the stylus 123 is arranged within the groove of the record. Accordingly, the position of the tone arm 124, relative to the tone arm encoder 128, may be detected by the tone arm encoder 128 via well known optical, magnetic, or mechanical methods.

Ex. 1005 ¶ 37.

The sampled audio waveform is generated by using standard techniques for generating an analog audio signal using a record player and sampling such signal. *Id.* ¶ 36. In particular, Spencer discloses “cartridge 122 generally includes at least one transducer for converting mechanical vibrations sensed by the stylus 123 into analog electrical

signals.” Ex. 1005 ¶ 36. Spencer further discloses that these analog audio signals are communicated to “data processor unit 200 for sampling.” *Id.*

c) Cohen (Ex. 1006)

Cohen is a U.S. Patent Publication, published November 6, 2003, titled “Phonograph Turntable with Midi Output.” Ex. 1006, codes (12), (43), (54).

Cohen discloses “a turntable assembly which includes a rotary turntable platter, a phonographic cartridge, and a tonearm for impinging the phonographic cartridge against a record on the rotary turntable platter.” *Id.* Abstract. Cohen’s turntable assembly 10 “includes typical turntable components such as platter 15 (see FIG. 2) upon which record 12 is placed, a motor to drive the platter at $33\frac{1}{3}$ rpm, a phonographic cartridge/needle 17 which is inserted into the spiral groove of record 12 during playback, and a tonearm 19 for supporting the phonographic cartridge/needle.” *Id.* ¶ 15. Cohen’s turntable assembly further includes analog-to-digital converter 18 for converting analog signals into a digital data stream. *Id.* ¶ 16. The digital data stream is received by a microprocessor or digital signal processor (DSP) that extracts information in order to produce a Musical Instrument Digital Interface (MIDI) output.

In particular, Cohen’s turntable may play both (1) conventional analog vinyl records with music encoded thereon, and (2) records encoded with a MIDI audio timecode encoded thereon. *Id.* ¶¶ 14, 15, 18. As to (2), Cohen discloses the groove of the record, “rather than having a musical performance in analog format, has a MIDI audio time code encoded therein in analog format.” *Id.* ¶ 14. When playing such record, the turntable “generates an analog output from record 12 which is largely conventional,

except that the resulting analog signal from record 12 includes an analog MIDI timecode.” *Id.* ¶ 15. When playing both types of records, (1) and (2), the analog output is received by Recording Industry Association of America (RIAA) preamplifier, because amplification is required due to the low output levels of the phonographic cartridge needle. *Id.* The amplified analog signal is received by analog-to-digital converter 18 and converted to a digital data stream that is received by microprocessor or DSP 20. *Id.* ¶ 16. In the context of (2), microprocessor or DSP 20 generates a MIDI time code for output. *Id.* In the context of (1), microprocessor or DSP 20 “can be configured to recognize when a conventional analog record, typically including a musical or other audio performance and not including any encoded MIDI information, is being played by turntable 14.” *Id.* ¶ 18. In such instance, “[t]he resulting conventional MIDI output is then output from second MIDI output 24.” *Id.*

d) Georges (Ex. 1013)

Georges is a U.S. Patent Publication, published July 17, 2003, titled “Systems and Methods for Creating, Modifying, Interacting with and Playing Musical Compositions.” Ex. 1013, codes (12), (43), (54).

Georges relates to “systems and methods for creating, modifying, interacting with and playing music, and more particularly to systems and methods employing a top-down and interactive composition process.” *Id.* ¶ 1. Georges discloses providing “user interface features . . . that desirably facilitate the interactive generation of music.” *Id.* ¶ 60. The embodiments of Georges “are primarily focused on one example of a handheld, entry-level type of device, herein called a ‘Player.’” *Id.* Georges discloses, however, that rather than being limited to a hardware Player, the systems and methods

relating to musical compositions may be implemented with either a software based approach or a hybrid hardware and software based approach. *Id.*

¶ 311. Using the hybrid approach, a hybrid DSP module may be plugged into a “high speed bus (e.g., IEEE 1394 [firewire], or USB, etc.) of a personal computing system.” *Id.* In such an implementation, certain functionality can be performed by the personal computing system, while other functionality is handled by a DSP located on a hardware module. *Id.*

F. Obviousness over Cortellesi

Petitioner asserts unpatentability under 35 U.S.C. § 103 of claims 1, 2, and 4–6 as obvious over Cortellesi. Pet. 21–50.

We first address claim 1—the only independent claim. Discussed further below, Patent Owner argues that Cortellesi does not teach limitations [1e] and [1g]. Prelim. Resp. 17–21. Patent Owner does not otherwise provide arguments or evidence regarding this ground of unpatentability. *See id.* at 15–21.

We have considered Petitioner’s evidence and arguments, including the relevant testimony of Dr. Moon, as well as the evidence and arguments presented by Patent Owner. Based on this preliminary record, we determine Petitioner has demonstrated a reasonable likelihood that claim 1 is unpatentable under 35 U.S.C. § 103 as obvious over Cortellesi.

1. Preamble [1a] and limitations [1b] and [1c]

Petitioner provides evidence and arguments that Cortellesi teaches

[1a] A turntable including:

[1b] a rotatable platter;

[1c] a tonearm for receiving a phono cartridge for generating an analog audio signal representative of an audio analog recording.

Pet. 34–40.

Patent Owner does not contest Petitioner’s evidence and arguments with respect to these limitations. *See* Prelim. Resp. 12–21.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

According to Petitioner, limitations [1b] and [1c] recite features of turntables that were conventional and well-known in the relevant time frame. Pet. 9–12, 34–40; Ex. 1002 ¶¶ 28–29. We agree with Petitioner that a skilled artisan would have understood Cortellesi’s apparatus as having these features. Pet. 25–32. Cortellesi relates to “the professional playing of records” and discloses a “turntable of a common record player” that plays “a common long playing record (L.P.).” Ex. 1004, 4:40–42; Pet. 34 (citing Ex. 1004, 1:30–34; Ex. 1002 ¶ 76). Petitioner contends that a turntable of a common record player that plays common LP’s, as disclosed in Cortellesi, would have been understood as including a rotatable platter in order to rotate the LP and a tonearm with a phono cartridge as recited in claim 1 in order to generate analog audio output from the grooves of the LP. Pet. 36–40 (citing Ex. 1002 ¶¶ 78–79).

Figure 4 of Cortellesi, reproduced below, supports Petitioner’s position.

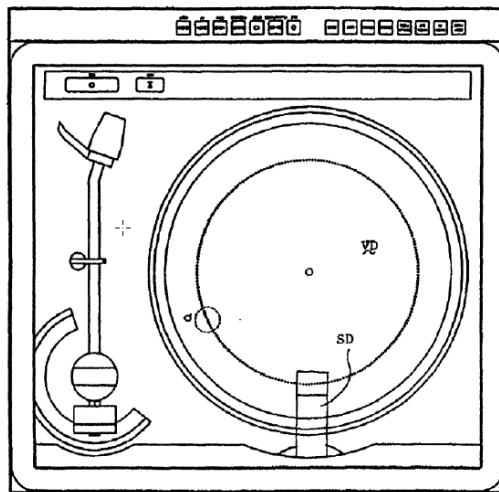


FIG. 4

Figure 4 of Cortellesi illustrates a top plan view of an apparatus provided with a record player. Ex. 1004, 2:8–10.

Ex. 1004, Fig. 2. As shown in Figure 4, the record player includes a turntable that includes a rotatable platter and tone arm for receiving a phono cartridge as recited in claim 1. Petitioner provides an annotated copy of Figure 4, reproduced below, identifying the rotatable platter, tonearm, and phono cartridge.

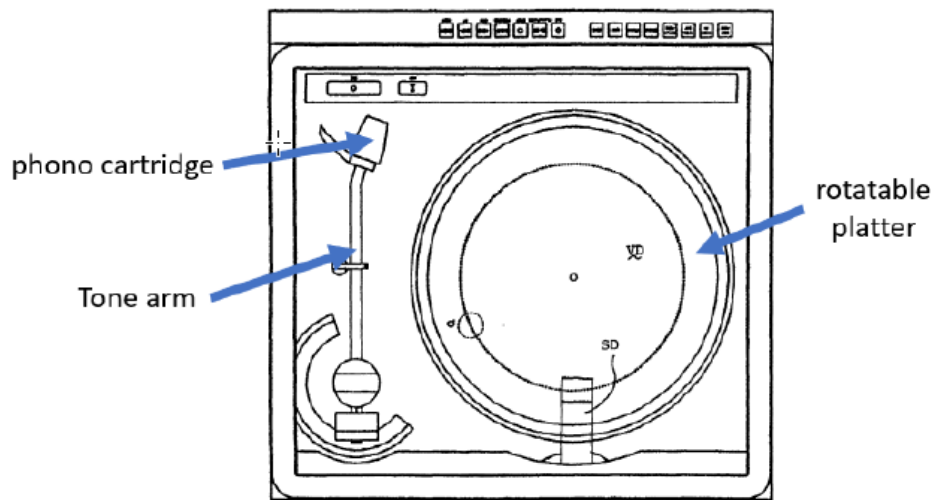


FIG. 4

This figure from the Petition is a copy of Cortellesi's Figure 4, with annotations by Petitioner in blue.

Pet. 26.

We note that Cortellesi's record player also includes additional features not included in conventional turntables—e.g., sensor SD for reading information off a virtual disk VD. Ex. 1004, 4:33–55. However, this neither detracts from, nor negates, Cortellesi's teaching of a turntable that includes the features recited in limitations [1b] and [1c].

Based on this preliminary record, we determine that Petitioner has demonstrated sufficiently that Cortellesi meets the recited limitations.

2. Limitation [1d]

Petitioner provides evidence and arguments that Cortellesi teaches [1d] an analog to digital converter for receiving an analog audio signal from the phone cartridge.

Pet. 40–41.

Patent Owner does not contest Petitioner's evidence and arguments with respect to this limitation. *See* Prelim. Resp. 12–21.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Cortellesi discloses that its apparatus includes converter CA/D. Figure 1 of Cortellesi shows that CA/D receives analog input through left and right channels L and R. Ex. 1002, Fig. 1. Cortellesi discloses expressly that CA/D is a converter and stores “directly from audio analogue sources (vinyl records, tapes, radio, live).” *Id.* at 2:33–36.

Petitioner argues Cortellesi's CA/D can receive an analog audio signal from the phono cartridge, but implicitly acknowledges this is not explicitly disclosed. Pet. 40. Petitioner asserts, however, that it would have been obvious for CA/D to receive an analog audio signal from the phono cartridge. Pet. 40–41 (citing Ex. 1002 ¶ 84); Pet. 25–32. As argued by Petitioner, in light of Cortellesi's disclosure that CA/D directly receives analog audio signals from vinyl records, it would have been obvious for the CA/D to receive analog audio signals from Cortellesi's turntable. Pet. 25–26.

Based on this preliminary record, we determine that Petitioner has demonstrated sufficiently that Cortellesi meets the recited limitation.

3. *Limitation [1e]*

Petitioner provides evidence and arguments that Cortellesi teaches [1e] a controller responsive to said analog digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal.

Pet. 41–45.

Patent Owner contests Petitioner’s evidence and arguments with respect to this limitation. Prelim. Resp. 17–18.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner identifies Cortellesi’s central processing unit EC as teaching the claimed “controller.” Pet. 41. Petitioner argues Cortellesi’s EC is responsive to the analog to digital converter (i.e., Cortellesi’s CA/D), and outputs digital audio of music or speech representative of the audio recording (i.e., vinyl record) output from CA/D. *Id.* at 41–45. For reasons discussed above with regard to limitation [1d], we are sufficiently persuaded at this stage that Cortellesi’s CA/D receives analog audio signals representative of an audio recording and teaches converting such analog signals into digital—i.e., Cortellesi teaches passing analog audio output of a common LP through analog to digital converter CA/D.

Furthermore, for reasons discussed below, the evidence and argument show sufficiently that Cortellesi’s EC receives audio signals and generates an output audio signal of music or speech, wherein the output audio signal is representative of an audio recording from an output of said analog to digital converter, representative of the audio signal from a common LP—i.e., Cortellesi teaches that the analog audio output of a common LP, which is passed through analog to digital converter CA/D, is then sent to EC, wherein EC generates a digital output audio signal representative of the audio signal from the common LP.

As Petitioner points out, Cortellesi’s EC is responsible for generating output audio signals. Pet. 42. Specifically, Cortellesi states that the EC is

responsible for “processing and delivering data from several inside and/or outside units by digital connections” and “executes a program for processing the digital information of the apparatus.” Ex. 1004, 2:25–33.

Patent Owner argues that the output generated by Cortellesi’s EC is not **audio** output, because it is Cortellesi’s playing unit RD/A that generates audio output. Prelim. Resp. 17. It is not contested that RD/A generates output audio signals—namely, it produces either analog audio output in stereo or digital audio output in the PDIF format. Ex. 1004, 2:50–54, Fig. 1. However, this does not mean that EC does not also generate digital audio output as recited in claim 1.

In pertinent part, Petitioner’s theory of unpatentability does not depend on the output generated by RD/A. Claim 1 explicitly recites, in limitation [1g], that the output digital audio signal “uses standard computer protocol,” which according to the Specification may include the USB protocol. As such, Petitioner relies on the digital audio output from EC’s USB port to a computer (Pet. 46–48), which teaches EC generating digital output audio (*see* Sec. II.F.5, *infra*).

We note further that RD/A’s ability to generate audio output signals does not mean the signals RD/A receives are not also digital output audio signals as recited in claim 1. Cortellesi suggests that the RD/A receives digital audio signals from EC. Specifically, Cortellesi’s RD/A includes a digital to analog converter that converts digital audio signals from EC “so as to provide at its output stereo audio signals.” Ex. 1004, 2:50–54. As such, contrary to Patent Owner’s argument, it appears that EC generates output digital audio signals to RD/A.

Based on this preliminary record, we determine that Petitioner has demonstrated sufficiently that Cortellesi meets the recited limitation.

4. *Limitation [1f]*

Petitioner provides evidence and arguments that Cortellesi teaches [1f] wherein said analog to digital converter and said controller are included within said turntable.

Pet. 45–46.

Patent Owner does not contest Petitioner’s evidence and arguments with respect to this limitation. *See* Prelim. Resp. 12–21.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

The following evidence supports Petitioner’s position that Cortellesi teaches its CA/D and EC are included within a turntable. Cortellesi discloses a “cheap, reliable, portable electronic apparatus.” Ex. 1004, 1:18–23. Cortellesi refers to Figures 1 and 2 as block diagrams of the “storing, playing apparatus.” *Id.* at 1:53–57. Figures 1 and 2 illustrate CA/D and EC (i.e., asserted analog to digital converter and controller, respectively) as being included in the apparatus. *Id.* Figs. 1, 2. Moreover, with reference to Figure 1 Cortellesi discloses that “the apparatus of the invention includes: a central processing unit EC . . . [and] a digital/analog converter CA/D for storing directly from analog sources (Vinyl records, tapes, radio, live).” *Id.* at 2:12–36. Accordingly, Cortellesi teaches CA/D and EC are included within the apparatus.

As to whether the CA/D and EC are within a turntable, Cortellesi refers to Figure 4 as “the apparatus.” *Id.* at 2:8–10. As we discussed above, *supra* Sec. II.F.1, Figure 4 of Cortellesi shows the apparatus as being a

record player with a turntable including a rotatable platter and tonearm with a phono cartridge. Ex. 1004, Fig. 4. Petitioner argues that the “apparatus” shown in Figure 4 (which Petitioner argues is a turntable) is the “apparatus” illustrated in Figures 1 and 2 (i.e., includes CA/D and EC). Pet. 45–46. Cortellesi’s referral to Figures 1, 2, and 4 as showing the “apparatus” supports Petitioner’s position that CA/D and EC shown in Figures 1 and 2 are included in the turntable shown in Figure 4. Moreover, Cortellesi’s apparatus is a portable apparatus that disk jockeys can take with them to music venues (Ex. 1004, 1:3–23), wherein disk jockeys can use the apparatus to both play music and perform scratching operations on a virtual disk played on the turntable portion of the apparatus (*Id.* at 1:40–46). This indicates the apparatus is a turntable (because it plays virtual disks) that includes CA/D and EC (so it can play music). Pet. 45–46.

Petitioner argues, in the alternative, that it would have been obvious for both CA/D and EC to be included in the turntable. Pet. 25–32, 46. Cortellesi’s disclosure of a portable apparatus providing the ability to play music (i.e., an apparatus that includes both a CA/D for receiving and storing music and performing analog to digital conversion and an EC for generating audio output) while performing scratching operations on a virtual disk (i.e., an apparatus that is a turntable) supports Petitioner’s arguments that the apparatus is a turntable that includes CA/D and EC.

Based on this preliminary record, we determine that Petitioner has demonstrated sufficiently that Cortellesi meets the recited limitation.

5. *Limitation [1g]*

[1g] wherein said output digital audio signal is output from said turntable and uses standard computer protocol. Pet. 46–48.

Patent Owner contests Petitioner’s evidence and arguments with respect to this limitation. Prelim. Resp. 18–21.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

There is no dispute amongst the parties that USB is within the scope of the phrase “standard computer protocol” as recited in limitation [1g]. The ’498 patent supports this understanding, disclosing “providing an audio conversion device to USB, firewire, or other standard computer digital communication protocol.” Ex. 1001, 1:52–57.

Cortellesi discloses that the claimed apparatus includes various interfaces including “USB-interface that allows the apparatus to be directly connected to a personal computer for digital data processing/transmitting by software programs that improve the quality of the recorded pieces of music (removal of ground noise/interferences, digital mixing).” Ex. 1004, 3:44–4:14, *quoted in* Pet. 46. Cortellesi therefore discloses a turntable (i.e., apparatus) outputting a digital signal (via USB-interface) using standard computer protocol(USB).

In dispute is whether Cortellesi teaches that its USB signal is an “output digital audio signal,” as recited in limitation [1g].

Petitioner asserts that because Cortellesi’s USB-interface allows the apparatus to be directly connected to a personal computer for digital data processing of recorded pieces of music, it would have been obvious that the USB output is an “output digital audio signal.” Pet. 47–48. For example, Cortellesi’s disclosure that the USB interface allows for transmission of digital data to a computer to “improve quality of the recorded pieces of music” through, e.g., removing noise and digital mixing, suggests, according

to Petitioner, that the digital data is audio data because noise is removed from the audio data or the audio data is digitally mixed to create new audio data. *Id.* at 48 (citing Ex. 1004, 4:8–13).

Patent Owner asserts that “Cortellesi does not disclose an ‘output digital audio signal’ being output via USB.” Prelim. Resp. 18–19. According to Patent Owner, the output from Cortellesi’s USB interface is not an output digital audio signal because “no reference is made to audio being outputted via USB. Instead, [Cortellesi] refers to USB being used for data processing/transmitting to improve the quality of music.” *Id.* at 19. In other words, Patent Owner’s argument is that the digital data sent from the USB interface of Cortellesi’s apparatus to a computer for processing is not an output digital audio signal. In making this argument, Patent Owner does not provide any construction for the term “output digital audio signal,” nor explain why digital data representing recorded music that is sent to a computer for processing is not an “output digital audio signal.”

The present record does not support Patent Owner’s argument. The disclosure of the ’498 patent (except for the claims) nowhere uses the term “output digital audio signal.” The ’498 patent, however, uses the term “digital audio signal” in its only description of outputting a signal via USB, but does not define this term. Ex. 1001, 2:23–28. Specifically, the patent discloses a “digital signal, typically a digital audio signal [that] can be processed by the computer 100.” *Id.* In light of this disclosure, namely that the USB port outputs a digital audio signal that *can be processed by the computer 100*, and on this preliminary record, we decline to interpret the phrase “output digital audio signal” in a manner that excludes digital data of

recorded music sent to a computer for processing, as disclosed in Cortellesi, as this would exclude the only embodiment disclosed in the '498 patent.

Based on this preliminary record, we determine that Petitioner has demonstrated sufficiently that Cortellesi meets the recited limitation.

6. *Rationale Supporting Obviousness*

Although this ground is based on a single reference, Cortellesi, Petitioner presents this ground as one of obviousness “because, while a POSITA would understand that Cortellesi has all components of the '498 patent claims, Cortellesi does not always expressly describe or name those components.” Pet. 25. Petitioner asserts that there are “three principal instances where obviousness is employed.” *Id.*

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner’s first “principal instance” is that Cortellesi does not expressly use the terms “rotatable platter,” “tonearm,” and “phono cartridge.” However, as argued by Petitioner, a skilled artisan would have understood that a common record player, as disclosed in Cortellesi, would have had these features. *Id.* at 25–26. Cortellesi’s description of a common record player for playing common LPs (e.g., Ex. 1004, 4:40–42), as well as Figure 4 (discussed by Dr. Moon, e.g., at Ex. 1002 ¶¶ 52–54) showing a rotatable platter, tone arm, and phono cartridge, supports Petitioner’s position.

As to the second “principal instance,” Petitioner acknowledges that although Cortellesi provides explicit details of playing a virtual disk using Cortellesi’s turntable and digitizing the analog signal created by playing such disk, Cortellesi does not provide an explicit embodiment describing the

details of playing an LP and digitizing the analog audio signal created by playing the LP. Pet. 26–31. According to Petitioner, however, it would have been understood or obvious that this feature was included in Cortellesi’s turntable. *Id.* Specifically, Cortellesi teaches a portable apparatus that includes a turntable that plays common records, wherein the apparatus can store a digitized collection of LP’s, thereby avoiding the need to transport numerous LP’s to music venues. Ex. 1004, 2:18–23, 2:30–36, 4:40–42. The digitization process, Petitioner argues, would have been one of the features of Cortellesi’s turntable, as Cortellesi explicitly teaches a turntable that plays common records, and the turntable having CA/D for converting audio signals from vinyl records to digital and storing such recorded music. Pet. 26–31.

Petitioner’s third “principal instance” appears to be a contingent argument, i.e., it is contingent upon our finding that Cortellesi’s turntable is a subpart of the apparatus, and does not include CA/D and EC. *Id.* at 31–32. At this stage, we find no evidence that a “turntable” is only a subpart of the apparatus shown in Figure 4 of Cortellesi, such that the CA/D and EC (while being within the apparatus shown in Figure 4) are outside of, and not included in, a “turntable.”

Petitioner asserts, furthermore, that Cortellesi is analogous art to the ’498 patent, and that a skilled artisan would have had a reasonable expectation of success in arriving at the claimed invention. *Id.* at 33–34.

Having reviewed and considered the evidence and arguments presented by the parties, based on the present record we determine Petitioner has articulated sufficient rationale to arrive at the invention recited in claim 1 in view of Cortellesi.

7. *Dependent Claims 2, 4, 5, and 6*

Petitioner argues that Cortellesi teaches the recited limitations of dependent claims 2, 4, 5, and 6. *See* Pet. 48–50. Petitioner provides the testimony of Dr. Moon in support of its position. *See* Ex. 1002 ¶¶ 101–104.

In its Preliminary Response, Patent Owner does not separately address Petitioner’s evidence or arguments directed to dependent claims 2, 4, 5, and 6, apart from those issues discussed above with respect to independent claim 1. *See* Prelim. Resp. 15–21.

Based on the current record before us, we are persuaded that Petitioner has demonstrated sufficiently, for purposes of institution, that claims 2, 4, 5, and 6 would have been obvious in view of the teachings of Cortellesi.

G. *Obviousness over the Combination of Cortellesi and Georges*

Petitioner asserts unpatentability under 35 U.S.C. § 103 of claim 3 as obvious over the combination of Cortellesi and Georges. Pet. 50–52. Claim 3 recites “[t]he turntable of claim 1 wherein said output digital audio signal uses firewire (IEEE-1394) protocol.” Ex. 1001, 3:10–11. Petitioner relies on Georges for the teaching of an output digital audio signal using firewire. Pet. 50–52. For example, Georges, teaches “[s]ystems and methods for creating, modifying, interacting with and playing music.” Ex. 1013, Abstract (cited by Pet. 51). Georges further teaches a digital signal processing module that is connected by a “high speed bus (e.g., IEEE 1394, or USB, etc.).” *Id.* ¶ 311 (cited by Pet. 51). Petitioner provides argument and evidence that Georges is analogous art to the ’498 patent and articulates a rationale for combining Georges with Cortellesi to arrive at claim 3. Pet. 50–52.

In its Preliminary Response, Patent Owner does not separately address Petitioner's evidence or arguments directed to dependent claims 3, apart from those issues discussed above with respect to independent claim 1. *See* Prelim. Resp. 15–21.

Having reviewed and considered the evidence and arguments presented by the parties, based on the present record we determine Petitioner has made a sufficient showing that claim 3 would have been obvious in view of the combined teachings of Cortellesi and Georges.

H. Obviousness over the Combination of Spencer and Cohen

Petitioner asserts unpatentability under 35 U.S.C. § 103 of claims 1, 2, and 4–6 as obvious over the combination of Spencer and Cohen. Pet. 52–72.

We first address claim 1—the only independent claim. Patent Owner contests Petitioner's arguments but does not expressly identify a specific claim element allegedly not met. *See* Prelim. Resp. 23–29. We address arguments presented by Patent Owner in Sec. II.H.2; however, had we addressed these arguments in a different subsection relating to a different claim limitation, it would not have altered the outcome of this decision.

We have considered Petitioner's evidence and arguments, including the relevant testimony of Dr. Moon, as well as the evidence and arguments presented by Patent Owner. Based on this preliminary record, we determine Petitioner has demonstrated a reasonable likelihood that claim 1 is unpatentable under 35 U.S.C. § 103 as obvious over the combination of Spencer and Cohen.

1. Preamble [1a] and limitations [1b] and [1c]

Petitioner provides evidence and arguments that Spencer teaches

[1a] A turntable including:

[1b] a rotatable platter;

[1c] a tonearm for receiving a phono cartridge for generating an analog audio signal representative of an audio analog recording.

Pet. 62–65.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner contends that limitations [1b] and [1c] recite features of turntables that were conventional and well-known in the relevant time frame. Pet. 9–12; Ex. 1002 ¶¶ 28–29. We agree with Petitioner that a skilled artisan would have understood Spencer’s turntable as having these features.

Pet. 62–65. Spencer discloses a turntable, illustrated in Figure 2 reproduced below. Ex. 1005, ¶ 33, Fig. 2 (cited by Pet. 62).

FIG. 2

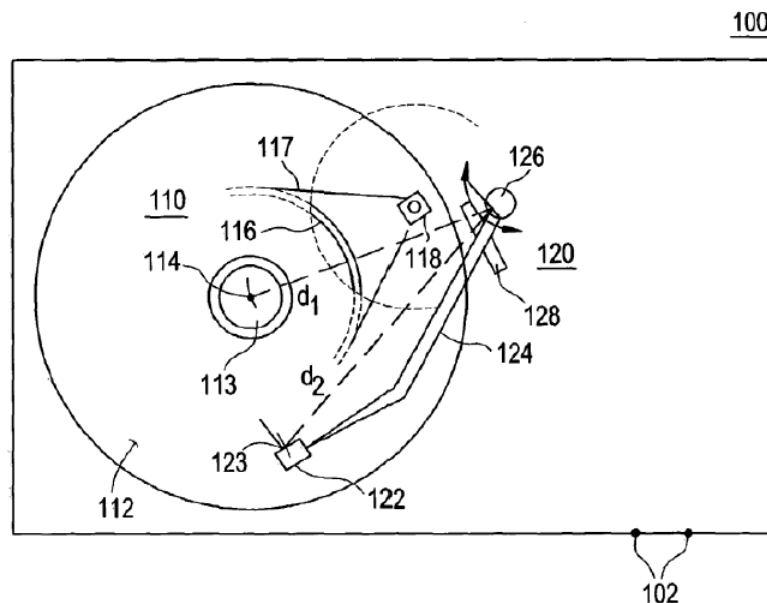


Figure 2 of Spencer illustrates a turntable unit. Ex. 1005 ¶¶ 19, 20.

Figure 2 of Spencer illustrates “controller unit 100, e.g., a turntable unit.” Ex. 1005, ¶¶ 19, 30, Fig. 2. Spencer discloses that the turntable includes a rotatable platter—i.e., turntable platter 112 having a rotatable supporting surface. *Id.* ¶ 34 (cited by Pet. 63). Spencer also discloses that the turntable includes a tone arm for receiving a phono cartridge, as recited in this limitation. For example, Spencer discloses tone arm assembly 120 including tone arm 124 and cartridge 122. *Id.* ¶ 36 (cited by Pet. 63–64). Petitioner argues that it would have been understood that Spencer’s tone arm for receiving a phono cartridge is “for generating an analog audio signal representative of an audio analog recording” because Spencer teaches that the turntable including these assemblies is for playing vinyl records. Pet. 64–65 (citing Spencer ¶ 8).

Based on the preliminary record, we determine that Petitioner has demonstrated sufficiently that Spencer teaches the recited limitations.

2. *Limitation [1d]*

Petitioner provides evidence and arguments that the combination of Spencer and Cohen teaches

[1d] an analog to digital converter for receiving an analog audio signal from the phone cartridge.

Pet. 65–67.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner argues that although Spencer makes no explicit disclosure of this claimed feature, Spencer suggests this feature. Pet. 65–67. In particular, Spencer discloses a turntable unit “coupled to corresponding SCSI, USB, or other suitable type port 202 on the data processor unit to

communicate digitized audio signals and information useful in determining an intratrack needle position from the controlling unit 100 to the data processor unit 200.” Ex. 1005 ¶ 30 (cited by Pet. 65–66). Petitioner argues that “digitized” audio signals are signals that have been converted from analog to digital. Pet. 66; *see* Prelim. Resp. 23–30. Because the turntable includes a USB port coupled to data processor 200, and communicates “digitized audio signals and [needle tracking information]” to the data processor via the port, Petitioner argues there at least is a suggestion that the analog audio signal from the turntable’s phono cartridge has been digitized within the turntable—i.e., the turntable has an analog to digital converter that converts analog audio signals from the phono cartridge into a digitized audio signal. Pet. 65–66.

Petitioner further argues that Cohen expressly discloses an analog to digital converter that receives an analog signal from a turntable (i.e., a phono cartridge of a turntable). Pet. 66–67; Ex. 1006 ¶¶ 15–16, Fig. 1.

Petitioner argues that it would have been obvious in view of the combined teachings of Spencer and Cohen to use an analog to digital converter for receiving an analog audio signal from the phono cartridge. Pet. 65–67.

Spencer’s disclosure supports Petitioner’s position. Specifically, Spencer’s disclosure of the turntable communicating “digitized audio signals and information useful in determining an intratrack needle position” refers to communication of two things: (1) digitized audio signals, *and* (2) information useful in determining needle position. Ex. 1005 ¶ 30.

Patent Owner asserts, with regard to the above quoted excerpt of Spencer, that Petitioner “pulls one sentence out of context from one paragraph of Spencer.” Prelim. Resp. 28. Patent Owner argues further that

Paragraph 30 does not disclose audio signals representative of an audio recording being transmitted over USB to the data processor unit 200. Instead, in Spencer, the USB transmits information that is used to determine the position of the turntable’s needle. This, of course, makes sense when considering that the entire point of Spencer is to “detect[] a location on a surface [of a LP record] selected by a user and manipulating a digital source based on information relative to the detected location.” Ex. 1005, ¶ 2. That is, Spencer is directed to synchronizing an LP record with digital music on a computer.

Prelim. Resp. 25–26. Patent Owner’s arguments acknowledge Spencer’s disclosure of communicating (2) from the turntable to data processor 200, but does not acknowledge or address Spencer’s disclosure of sending (1).

Id. In particular, Patent Owner neglects Spencer’s use of the words “digitized *audio* signals.” Ex. 1005 ¶ 30. Specifically, in arguing that “USB transmits information that is used to determine the position of the turntable’s needle,” Patent Owner neither (1) addresses the “digitized audio signals” that additionally are transmitted over USB, nor (2) explains what these signals are if not an “output digital audio signal” as recited in limitation [1e] and as argued by Petitioner. *Id.* at 25–26. Rather, Patent Owner focuses on an issue over which there is no dispute—i.e., Spencer’s communication of needle position information (*id.* at 25–28)—without addressing the additional information the turntable communicates to data processor unit 200—i.e., digitized audio signals (Ex. 1005 ¶ 30). Based on the preliminary record, we determine that Petitioner has demonstrated

sufficiently that the combination of Spencer and Cohen teaches the recited limitation.

3. *Limitation [1e]*

Petitioner provides evidence and arguments that the combination of Spencer and Cohen teaches

[1e] a controller responsive to said analog digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal.

Pet. 68–69. Petitioner argues that it would have been obvious to arrange a controller such as that taught in Cohen in Spencer’s turntable in a manner that satisfies this claim limitation. *Id.*

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

For teaching a controller as claimed, Petitioner identifies Cohen’s “Microprocessor or DSP Block 20,” shown in Figure 1 of Cohen. *Id.* (citing Ex. 1006 ¶¶ 15–16). Petitioner acknowledges that, during prosecution of the ’498 patent, argument arose distinguishing Cohen from the invention—namely, the signals being converted and generated in Cohen are not audio signals as recited in the claims, but rather are MIDI timecodes. Pet. 58 (citing 1008 at 310). Petitioner asserts, however, that this does not negate a finding of obviousness, and that Spencer provides the teaching of a turntable outputting audio signals. *Id.* at 57–59. As we discussed above, *supra* Sec. II.H.2, we agree that Spencer teaches a turntable outputting digital audio signals. Ex. 1005 ¶ 30.

Based on the preliminary record, we determine that Petitioner has demonstrated sufficiently that the combination of Spencer and Cohen teaches the recited limitation.

4. *Limitation [1f]*

Petitioner provides evidence and arguments that the combination of Spencer and Cohen teaches

[1f] wherein said analog to digital converter and said controller are included within said turntable.

Pet. 69–70.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner refers to its rationale to combine Spencer and Cohen. *Id.* As we discussed above with regard to limitation [1d], *supra* Sec. II.H.2, it appears that some audio signals communicated from Spencer's turntable to data processor unit 200 via USB are digitized, which would suggest the analog to digital conversion and controller generating the corresponding USB signal are within the turntable.

Based on the preliminary record, we determine that Petitioner has demonstrated sufficiently that the combination of Spencer and Cohen teaches the recited limitation.

5. *Limitation [1g]*

Petitioner provides evidence and arguments that Spencer teaches

[1g] wherein said output digital audio signal is output from said turntable and uses standard computer protocol.

Pet. 69–70.

We highlight the following; however, these highlights should not be interpreted as limiting our preliminary determinations.

Petitioner cites paragraph 30 of Spencer, which we discussed above with regard to limitation [1d]. As we discussed above, *supra* Sec. II.H.2, it appears that some audio signals communicated from Spencer's turntable to data processor unit 200 are communicated via, e.g., USB. Also discussed above, with regard to this limitation in view of Cortellesi, *supra* Sec. II.F.5, there is no dispute amongst the parties that USB is within the scope of the phrase "standard computer protocol."

Based on the preliminary record, we determine that Petitioner has demonstrated sufficiently that Spencer teaches the recited limitation.

6. *Rationale Supporting Obviousness*

Petitioner provides a rationale in support of its obviousness arguments. Pet. 57–61. Petitioner asserts, furthermore, that Spencer and Cohen are analogous art to the '498 patent, and that a skilled artisan would have had a reasonable expectation of success in arriving at the claimed invention. *Id.* at 60–61. It appears Petitioner's position is that the only deficiencies of Spencer are lack of an express disclosure of an analog to digital converter and a controller within Spencer's turntable. Pet. 65–69. However, as discussed above with regard to limitation [1d], *supra* Sec. II.H.2, Spencer suggests inclusion within the turntable of an analog to digital converter and a controller, as recited in claim 1, because Spencer teaches the turntable communicating digitized audio signals to a data processor unit.

Petitioner, nonetheless, identifies Cohen as explicitly teaching an analog to digital converter and controller that produces digital output from a turntable, albeit digital output in the form of MIDI signals. Pet. 57–58, 65–

69. We do not re-iterate Spencer’s teachings here, which as we state immediately above suggest the claimed analog to digital converter and controller. We note that Cohen in no way detracts from Spencer’s teachings, and provides corroboration that processing, such as analog to digital conversion, and controllers that generate digital output, were known to be implemented within turntables.

Having reviewed and considered the evidence and arguments presented by the parties, based on the present record we determine Petitioner has articulated sufficient rationale to combine Spencer and Cohen to arrive at the invention recited in claim 1.

7. Dependent Claims 2, 4, 5, and 6

Petitioner argues that the combination of Spencer and Cohen teaches the recited limitations of dependent claims 2, 4, 5, and 6. *See* Pet. 70–72. Petitioner provides the testimony of Dr. Moon in support of its position. *See* Ex. 1002 ¶¶ 144–149.

In its Preliminary Response, Patent Owner does not separately address Petitioner’s evidence or arguments directed to dependent claims 2, 4, 5, and 6, apart from those issues discussed above with respect to independent claim 1. *See* Prelim. Resp. 23–29.

Based on the current record before us, we are persuaded that Petitioner has demonstrated sufficiently, for purposes of institution, that claims 2, 4, 5, and 6 would have been obvious in view of the combined teachings of Spencer and Cohen.

I. Obviousness over the combination of Spencer, Cohen, and Georges

Petitioner asserts unpatentability under 35 U.S.C. § 103 of claim 3 as obvious over the combination of Spencer, Cohen, and Georges. Pet. 72. Claim 3 recites “[t]he turntable of claim 1 wherein said output digital audio signal uses firewire (IEEE-1394) protocol.” Ex. 1001, 3:10–11. Petitioner relies on Georges for the teaching of an output digital audio signal using firewire. Pet. 72. For example, Georges, teaches “[s]ystems and methods for creating, modifying, interacting with and playing music.” Ex. 1013, Abstract. Georges further teaches a digital signal processing module that is connected by a “high speed bus (e.g., IEEE 1394, or USB, etc.).” *Id.* ¶ 311. Petitioner provides argument and evidence that Georges is analogous art to the ’498 patent and articulates a rationale for combining Georges with Spencer and Cohen to arrive at claim 3. Pet. 50–51, 72.

In its Preliminary Response, Patent Owner does not separately address Petitioner’s evidence or arguments directed to dependent claims 3, apart from those issues discussed above with respect to independent claim 1. *See* Prelim. Resp. 23–29.

Having reviewed and considered the evidence and arguments presented by the parties, based on the present record we determine Petitioner has made a sufficient showing that claim 3 would have been obvious in view of the combined teachings of Spencer, Cohen, and Georges.

III. CONCLUSION

For the reasons expressed above, we determine that Petitioner has demonstrated a reasonable likelihood of showing that at least one claim of

the '498 patent is unpatentable. As set forth in the Order below, we institute a trial on all challenged claims and all asserted grounds of unpatentability. *See* 37 C.F.R. § 42.108(a) (“When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”).

Our factual findings and determinations at this stage of the proceeding are preliminary and based on the evidentiary record developed thus far. This is not a final decision as to the patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record as fully developed during trial.

IV. ORDER

Accordingly, it is

ORDERED that an *inter partes* review is instituted as to all challenged claims on all the grounds raised in the Petition; and

FURTHER ORDERED that *inter partes* review is instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

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Patent 7,567,498 B2

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