

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ASKELADDEN, L.L.C.,

Petitioner,

v.

OHVA, INC.,

Patent Owner.

IPR2023-00921

U.S. Patent No. 9,679,286

**PETITIONER’S REPLY TO
PATENT OWNER’S RESPONSE**

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I. Introduction

Claims 1-4 of the '286 Patent are unpatentable under the grounds presented in the Petition. Patent Owner's Response ("POR," Paper 18) attempts to overcome the grounds of unpatentability by arguing that the Board should (1) afford the challenged claims an earlier priority date than is supported, (2) narrowly construe "transaction data" to include limitations from an embodiment not encompassed by the claims, and (3) narrowly interpret Cho as not teaching limitations that are, in fact, expressly disclosed by Cho.

Each of Patent Owner's arguments is incorrect. **First**, the challenged claims are entitled to a priority date no earlier than March 3, 2015, the filing date of the '286 Patent. *See* Section II. **Second**, the Board should maintain its construction in the Institution Decision that "transaction data" encompasses any data involved in a transaction, consistent with the claims. *See* Section III. **Third**, Cho expressly teaches "transaction data" and an "analog variable voltage audio signal." as recited in the challenged claims. *See* Section IV. As demonstrated in the Petition, and confirmed below, the asserted prior art renders the challenged claims obvious.

II. The Asserted References are Prior Art to the Challenged Claims.

Patent Owner argues that the challenged claims are entitled to a priority date of September 19, 2006. POR, 4-6, 12-21; Pet., 5 (identifying prior art dates of asserted references). Patent Owner is wrong. As shown in detail in the Petition, and

as confirmed below, the challenged claims are only entitled to a priority date of March 3, 2015, the filing date of '286 Patent. Pet., 12-27 (priority analysis of the challenged claims); EX1003, ¶¶61-90; EX1043, ¶¶16-45.

A. The Challenged Claims are Not Supported by Any Parent Application.

As shown in the table below, the '286 Patent claims priority to two earlier non-provisional applications.¹ Patent Owner incorrectly argues that the challenged claims have written description support in the '030 Application (EX1012). EX1003, ¶¶78-88; EX1043, ¶¶16-17.

App. No. Patent No.	11/533,030 - ('030 Application)	14/524,842 9,003,508 ('842 Application)	14/636,674 9,679,286 ('674 Application)
Filing Date	9/19/2006	10/27/2014	3/3/2015

The '286 Patent contains the same specification as the '030 and '508 Applications, *except that* the applicant replaced the “Brief Summary of the Invention” section when it filed the '508 Application and again when it filed the '674 Application (resulting in the '286 Patent). Pet., 18-19 (citing EX1014, 2-4

¹ The '286 Patent claims priority to Provisional Application No. 60/719,273 (EX1013). The challenged claims are not entitled to the filing date of the '273 Provisional (Pet., 20-21 (citing EX1003, ¶75)), and Patent Owner has not argued that they are.

(comparison of '674 and '842 Applications); EX1015, 2-4 (comparison of '674 and '030 Applications); EX1016, 2-4 (comparison of '842 and '302 Applications)); EX1003, ¶¶71, 48-51). The “Brief Summary of the Invention” sections of the '286 Patent ('674 Application), '030 Application, and '508 Application are entirely different. Patent Owner does not dispute this. POR, 13. EX1043, ¶¶18-19.

Limitations [1.3.1]-[1.3.2] of claim 1 and corresponding limitations [3.3]-[3.4] of claim 3 are not supported by the '030 Application or the '842 Application. Pet., 19-21 (citing EX1003, ¶¶70-77); EX1043, ¶20.

Claim 1 recites a “smart telephone” that executes “coded instructions...on a processor in the smart telephone” to

- “convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data” (limitation [1.3.1]); and
- “establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data” (limitation [1.3.2]).

Limitations [3.3]-[3.4] of claim 3 recite substantially identical features. Pet., 17; EX1043, ¶21.

Patent Owner argues that limitations [1.3.1]-[1.3.2] and [3.3]-[3.4] have written description support in the '030 Application by piecing together different portions of the specification of the '030 Application and contending that “[a]

POSITA would readily recognize” that the limitations are supported. POR, 16-21. Patent Owner provides only attorney argument about what “a POSITA would readily recognize.” As shown in the Petition and by Mr. McNair (EX1003 and EX1043), and as confirmed below, the '030 Application does not provide written description support for limitations [1.3.1]-[1.3.2] and [3.3]-[3.4]. Pet., 18-27.

For the '286 Patent's claims to be entitled to the September 19, 2006 filing date of the '030 Application, the '030 Application must “unambiguously describe all limitations” of the '286 Patent's claims. *Hyatt v. Boone*, 146 F.3d 1348, 1354 (Fed. Cir. 1998). “Although the exact terms need not be used *in haec verba*,...the specification [of the priority application] must contain an equivalent description of the claimed subject matter. A description which renders obvious the invention for which an earlier filing date is sought is not sufficient.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997); Pet., 13-14 (legal standards for written description support in priority applications).

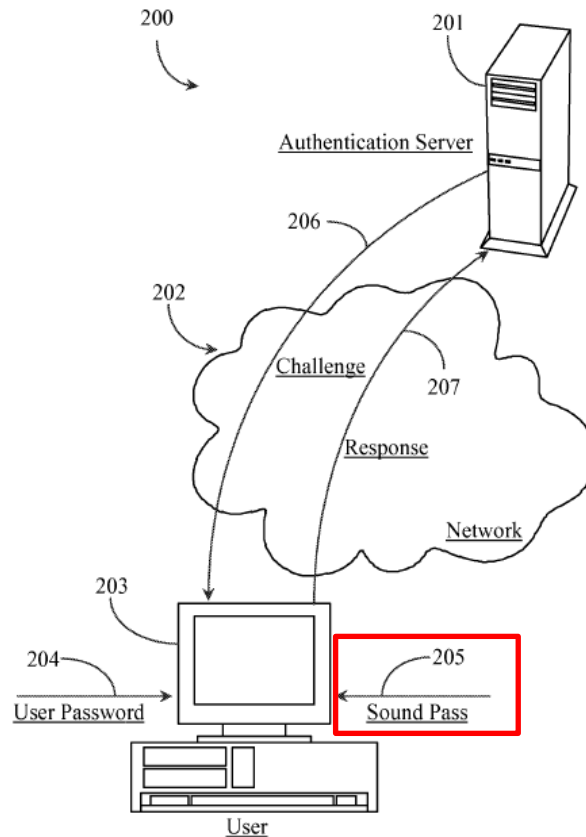
1. **The '030 Application does not support a “*smart telephone*” executing *coded instructions* to “*convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data*” (limitations [1.3.1] and [3.3]).**

The '030 Application never describes a smart telephone receiving or converting the claimed *analog variable voltage audio signal...to the transaction data as digital data*. Pet., 20-21. The smart telephone in the '030 Application only

transmits an *analog variable voltage audio* signal to a PC, as described with respect to Figure 7, below. The smart telephone never *convert[s] the analog variable voltage audio signal...to the transaction data as digital data*. This concept is described only in the “Brief Summary of the Invention” section of the ’286 Patent, which is not contained in the ’030 Application. EX1003, ¶¶70, 74-75; EX1043, ¶23.

The parties agree that the claimed *analog variable voltage audio signal* corresponds to the “sound signal or sound pass” (or “sound token”). POR, 17-18; EX1043, ¶24. However, the ’030 Application does not describe this sound signal being *convert[ed]...to the transaction data as digital data* by a smart telephone. Pet., 26 (citing EX1012, 331; EX1003, ¶83); EX1043, ¶24; EX1003, ¶74.

The ’030 Application describes providing a “sound signal or sound pass” 205 to a PC 203, as illustrated in Figure 2. EX1012, 331, 327, 353; EX1001, 6:50-53, 4:43-45. After receiving the sound pass and a password 204, the PC 203 processes the sound pass 205 and password “to authenticate the user.” EX1012, 336; EX1001, 9:50-63; EX1043, ¶25.

*Fig. 2***EX1012, 353 ('030 Application, Fig. 2) (annotated)**

As shown in Figures 2 and 3, below, the PC 203 (not a smart telephone) processes the received sound pass 205 and communicates with the server 201 to authenticate the user and perform the transaction. EX1012, 330-331 (server 201 and PC 203 send and receive hash codes and session keys for authentication); EX1001, 6:32-49; Pet., 26-27; EX1043, ¶26.

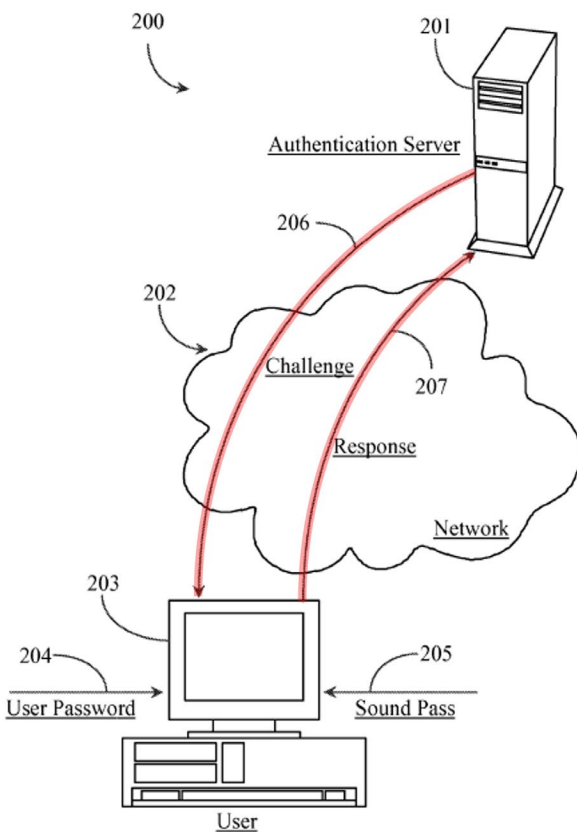


Fig. 2

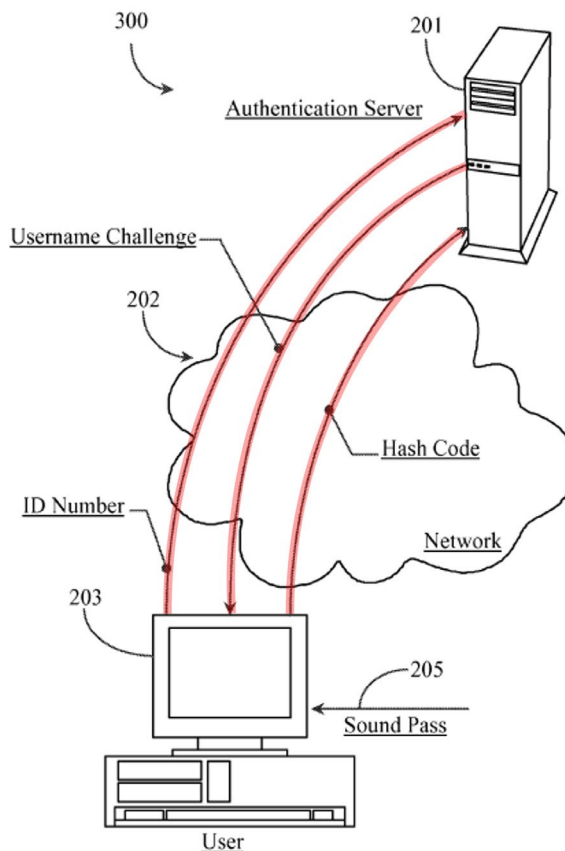


Fig. 3

EX1012, 353-354 ('030 Application, Figs. 2-3) (annotated)

Thus, the '030 Application provides that the sound pass 205 is provided to the PC 203, which then processes the transaction with the server 201 based on the received sound pass 205. EX1012, 330-331; EX1001, 6:32-49. At no point does the '030 Application suggest that the PC 203 may be replaced with a smart telephone. EX1043, ¶27.

The sound pass 205 may be provided to the PC 203 by one of three sources: (1) a "key jack" (Figs. 4-5), (2) a smart card and a smart card reader (Fig. 6), or (3)

a smart phone (Fig. 7). Pet., 21-26; EX1003, ¶¶79-83; EX1043, ¶28.

The first source—a “key jack”—is illustrated in Figures 4-5. EX1012, 331-332 (“a key jack” in Figure 5); 333 (circuitry of key jack in Figure 4); EX1001, 7:11-20, 7:59-65. The key jack 501 “fit[s] into a microphone input on a PC,” and the user “depress[es] button 505... to generate and modulate the sound pass signal.” EX1012, 333; EX1001, 7:65-67, 8:9-12; Pet., 23-24; EX1003, ¶82; EX1043, ¶29.

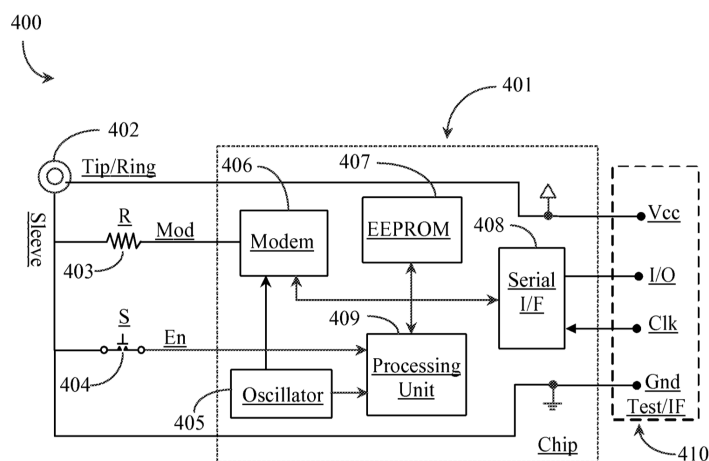


Fig. 4

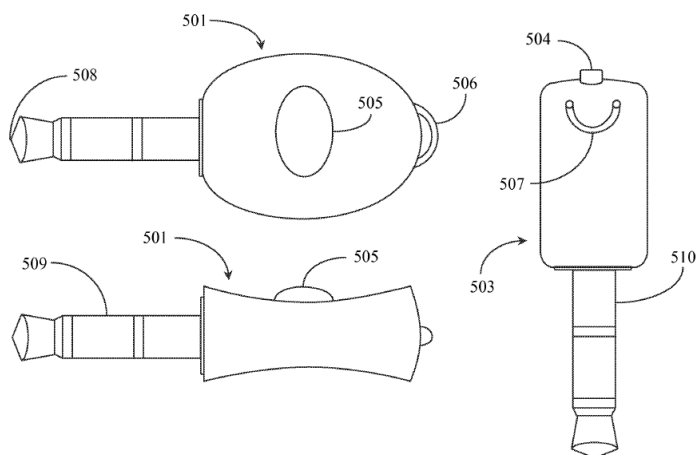


Fig. 5

EX1012, 356-357 ('030 Application, Figs. 4-5)

The second source—a smart card and a smart card reader—is illustrated in Figure 6, below. Like the key jack, the “card reader 602...is plugged into the microphone input of the host computing appliance” via the “Tip/Ring” illustrated. EX1012, 334; EX1001, 8:30-35. The “smart card 601” includes “the sound pass chip embedded therein” and “plugs into card reader 602. EX1012, 333-334; EX1001, 8:26-35; Pet., 24; EX1043, ¶30; EX1003, ¶81.

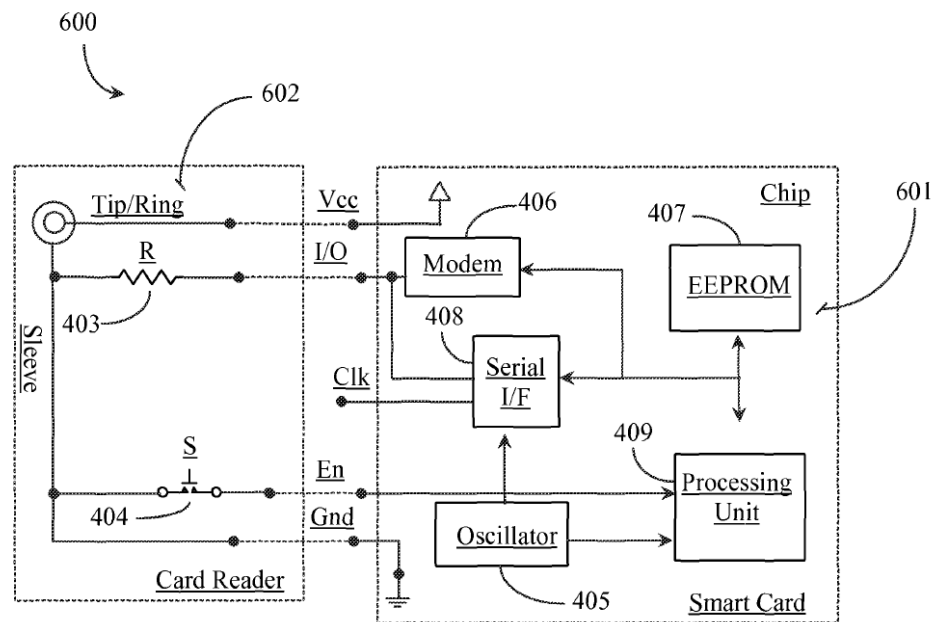


Fig. 6

EX1012, 357 ('030 Application, Fig. 6)

The third source is a smart phone, illustrated in Figure 7. For a smart phone, the sound pass 205 is “a modulated audio signal [] generated by a sound-generating applet installed on and executable from mobile device 701.” EX1012, 336; EX1001, 9:45-47. The smart phone speakers can “play the modulated sound pass into a

microphone plugged into PC 203...acoustically.” EX1012, 336; EX1001, 9:51-57.

“In another embodiment,” a cable may be plugged into the “microphone input” of the PC 203 to transmit the signal to the PC 203. EX1012, 336; EX1001, 9:58-61; Pet., 24-26; EX1043, ¶31.

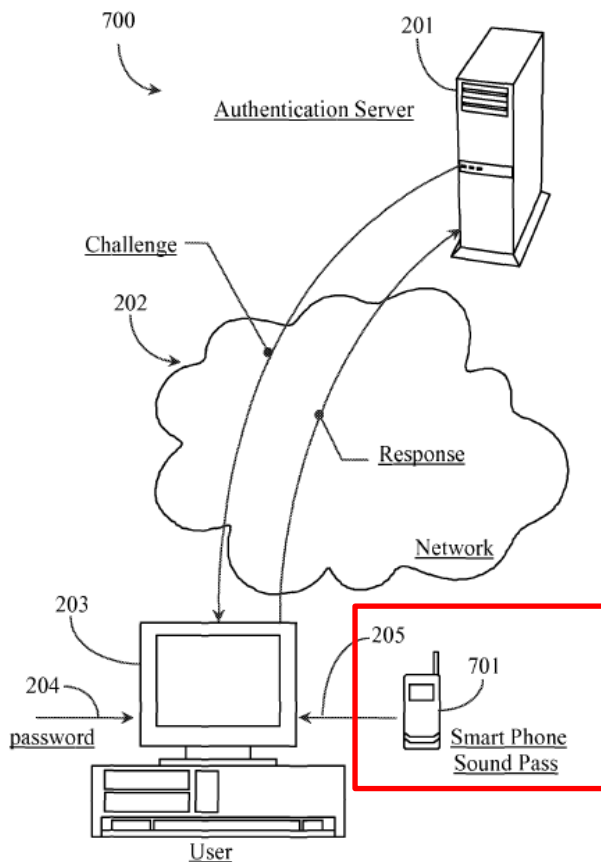


Fig. 7

EX1012, 357 ('030 Application, Fig. 7 (annotated))

In all three sources, the sound pass 205 is provided **to the PC 203**. The challenged claims differ significantly from the '030 Application. In limitations [1.1.2]-[1.1.3] and [3.1.2]-[3.2], the transaction data is provided as an analog

variable voltage audio signal to a microphone port **of the smart telephone**. But in Figures 4-7 of the '030 Application above, the sources (key jack, smart card, smart phone) output an analog variable voltage audio signal (sound pass 205) to a microphone port **of the PC 203**, not a smart telephone. The smart telephone 701 in Figure 7 only *provides* the sound pass to the PC 203. The smart telephone 701 never *receives* the sound pass. Pet., 26 (citing EX1012, 336; EX1003, ¶83); EX1043, ¶32.

Moreover, none of the sources in Figures 4-7 of the '030 Application ever *convert[s] the analog variable voltage audio signal (sound pass 205)...to the transaction data as digital data*, as recited in limitations [1.3.1] and [3.3]. EX1043, ¶¶33. The concept of converting the sound pass to digital data is disclosed only in the “Brief Summary of the Invention” section of the '286 Patent, not the '030 Application. Pet., 17 (citing EX1001, 2:8-20, 2:43-55; EX1003, ¶70). The concepts of “converting” analog data to digital data appear nowhere in the '030 Application, and “digital” only appears in the context of a “personal digital assistant” (PDA). EX1012, 331; EX1001, 7:4-7; Pet., 20; EX1043, ¶¶33-34.

Patent Owner misreads the '030 Application in an attempt to find support for limitations [1.3.1] and [3.3]. First, Patent Owner argues that the description in the '030 Application of the smart telephone including a “sound-generating applet” provides support for a smart telephone executing “coded instructions.” POR, 16 (citing EX1001, 9:45-47 (EX1012, 336)). This argument misses the mark. The issue

is not whether the '030 Application shows a smart telephone executing *any coded instructions at all*—the issue is whether the smart telephone in the '030 Application executes coded instructions to *convert the analog variable voltage audio signal...to the transaction data as digital data*. It does not. The “sound-generating applet” on the smart telephone is only used to *generate* the sound pass, not receive or convert it as claimed. EX1012, 336; EX1001, 9:45-47; EX1043, ¶35.

Second, Patent Owner argues that “token values...expressed as a modulated sound pass signal” may be transmitted to a microphone port. POR, 17 (citing EX1001, 13:39 (EX1012, 342-343)). This feature, however, does not provide support for a smart telephone *convert[ing] the analog variable voltage audio signal...to the transaction data as digital data*, as recited in limitations [1.3.1] and [3.3]. Patent Owner also argues without support that “a POSITA would readily recognize that ‘writ[ing] the token file’” provides support for the conversion operation in limitations [1.3.1] and [3.3]. POR, 18 (citing EX1001, 14:43-45 (EX1012, 344)). But this cited disclosure relates to an operation on the client PC, not the smart telephone. EX1001, Fig. 14 (step 1404: “applet executes on client [PC].”), EX1012, 344 (applet writes token file “to the root drive on the client PC”); EX1001, 14:43-45; EX1043, ¶36.

Furthermore, Patent Owner misreads the description of encryption at Figure 14. In the Figure 14 embodiment, the token file is *not an analog audio signal*. Figure 14

describes an embodiment where “a soft token” is used, rather than an analog signal. The “soft token” is “a software file.” EX1012, 342; EX1001, 13:33-36. While this soft token may be “a sound file or generated sound,” EX1012, 343; EX1001, 13:46-50, it is digital from the time it is created “at act 1404,” EX1012, 343; EX1001, 14:5-6. There is no conversion from an analog signal to a digital signal to encrypt the file. EX1043, ¶37.

Third, Patent Owner argues that the '030 Application's use of the word “mobile” in various places support the claims. POR, 16-17 (quoting EX1012, 332; EX1001, 7:52-55) (key jack is a “**mobile** device key jack 400” used at “**any mobile** device capable of bi-directional network connection.”) (Patent Owner's emphasis). Describing the key jack as “mobile” and connecting to other “mobile” devices does not show support for the new material claimed by the '286 Patent. Even if a “mobile device capable of bi-directional network connection” referred to a smart telephone, this disclosure does not provide support for a smart telephone *convert[ing] the analog variable voltage audio signal...to the transaction data as digital data*, as recited in limitations [1.3.1] and [3.3]. EX1043, ¶38.

Patent Owner next argues that because the “processing unit 409” in Figure 4 “may be a small microprocessor,” a smart telephone must include a processor. POR, 17 (citing EX1012, 332; EX1001, 7:34-35). This argument again misses the point. Petitioner does not dispute that the smart telephone 701 may include a processor. The existence of a processor does not show that the smart telephone 701 in Figure 7

convert[s] the analog variable voltage audio signal...to the transaction data as digital data, as recited in limitations [1.3.1] and [3.3]. On the contrary, the smart telephone 701 only *provides* the sound pass to the PC 203. EX1043, ¶39.

Finally, Patent Owner implies that the disclosure of both “an analog variable voltage signal” and “transmi[ssion] on a wireless network” means the analog signal “MUST be digitized.” POR, 3-4 (citing EX1001, 11:13-20 (EX1012, 338)), 17-19. Again, this argument does not address the issue. The issue is not whether the PC 203 digitizes the data; the issue is whether a smart telephone *convert[s]...the analog variable voltage audio signal*, as recited in limitations [1.3.1] and [3.3]. There is no disclosure in the '030 Application that a smart telephone converts an analog variable voltage audio signal. To the extent Patent Owner is asserting that the '030 application inherently discloses analog-to-digital conversion, Patent Owner has not met the standard of inherency that “the missing descriptive matter must **necessarily be present** in the original application’s specification.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (emphasis added); EX1043, ¶40.

Accordingly, limitations [1.3.1] and [3.3] are not supported by the '030 Application. EX1043, ¶41. Therefore, the challenged claims are only entitled to a priority date of March 3, 2015, the filing date of the '286 Patent.

2. **The '030 Application does not support the smart telephone “*establish[ing] direct data exchange between the smart telephone and a second Internet-connected server and facilitat[ing] transactions by a financial institution, or purchases from an online-merchant, using the transaction data*” ([1.3.2] and [3.4]).**

In limitations [1.3.2] and [3.4], “direct data exchange” is established “between the smart telephone and a second Internet-connected server” to “facilitate transactions.” These limitations are also not supported by the '030 Application. As shown in Figures 2, 3, and 7 above, direct data exchange with a server is performed by the PC 203, not the smart telephone. Pet., 20; EX1043, ¶42.

Here, Patent Owner again misreads the specification. In arguing that limitations [1.3.2] and [3.4] are supported by the '030 Application, Patent Owner refers to the embodiments of Figures 7 and 14. POR, 19-20. These embodiments do not show a direct data exchange between the smart telephone 701 and a second server. The smart telephone 701 in Figure 7 communicates with the PC 203, which in turn communicates with the authentication server 201, and Figure 14 shows operations of the client PC (PC 203), as described above. Support for limitations [1.3.2] and [3.3] can only be found in the “Brief Summary of the Invention” section of the '286 Patent. EX1043, ¶43.

Accordingly, limitations [1.3.2] and [3.4] are not supported by the '030 Application.

The challenged claims are only entitled to a priority date of March 3, 2015,

the filing date of the '286 Patent, because the '030 Application does not provide written description support for limitations [1.3.1]-[1.3.2] and [3.3]-[3.4]. EX1043, ¶¶44-45. Therefore, all the references in Grounds 1-4 are prior art to the challenged claims.

B. The Prosecution History Does Not Establish That the Applicant Challenged the Examiner's Designation of the '286 Patent as a Continuation-in-part.

The prosecution history shows that the priority date of the '286 Patent's claims is March 3, 2015. The Examiner recognized the applicant's amendments to "incorporate structure for the smart telephone element of the claims, such as executing coded instructions" as a new feature. Pet., 9-10 (citing EX1002, 193-194). The Examiner determined that the "application was a continuation-in-part" and never withdrew this finding. Pet., 10 (citing EX1002, 109-110).

1. The designation of the '286 Patent as a continuation has no bearing on the Board's determination.

Patent Owner argues that because the '286 Patent states "on its face...that it is a 'continuation,'" the claims should be "entitled to the Sep. 19, 2005 priority date." POR, 4. The designation of the '286 Patent as a continuation does not establish that the challenged claims should be afforded any priority date. "[W]ritten description is the metric against which" a priority claim is measured, not designation as a continuation. *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003); *Anascape, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333, 1338 (Fed. Cir.

2010) (“the designation given to a derivative application does not determine its legal status.”).

Patent Owner also argues that in the Notice of Allowance, the Examiner “no longer asserted” that the ’286 Patent was a continuation-in-part. POR, 4. Even if the Examiner determined that the challenged claims were supported by an earlier application, the Board is not bound by the Examiner’s determination. *See, e.g., Propel Orthodontics, LLC v. OrthoAccel Techs., Inc.*, IPR2018-00296, Paper 36 at 26-27 (PTAB June 10, 2019) (“[W]e do not find persuasive Patent Owner’s reliance on the Examiner’s findings in the prosecution of the related patent applications” related to priority determinations.); *Platinum Optics Tech. Inc. v. Viavi Sols., Inc.*, IPR2022-01489, Paper 25 at 19-20 (finding claims lacked support although “the Examiner already made a determination regarding written description support for the claims.”).

2. Mr. Boys’ conflicting declarations should be given little weight.

Patent Owner provided two declarations from the prosecuting attorney, Mr. Boys. The conflicting declarations do not demonstrate that the applicant disputed the priority date issue.

In his first declaration (EX2001), Mr. Boys testified that he “filed on 3.29.2017 a response to a Final office action issued 1/20/2017,” and that this response (EX2002) “is the document referred to in the Notice of Allowance.”

EX2001, ¶¶1-3. However, this alleged response was never entered into the record, and Mr. Boys did not provide any explanation why it was not. EX2001, ¶2.

In his second declaration (EX2003), Mr. Boys then admitted that the response (EX2002) “was actually never filed in this case.” EX2003, 2. Mr. Boys explained that a document “fax.docs” (EX2004) was transmitted to the Examiner. EX2003, 2. The “Fax Cover” of the document bears the date “March 29, 2017,” and refers to an interview apparently held that same day. EX2004, ¶¶1-2. However, the Notice of Allowance indicates that the Examiner interview occurred March 31, 2017. EX1002, ¶3. Furthermore, only some of the proposed amendments in the “fax.docs” document (EX2003, ¶3) were implemented. For example, the term “transaction” was not removed from claim 9 as indicated in the “fax.docs” document, and the converting limitation of claim 9 was significantly altered.

The Board should afford little weight to Mr. Boys’ testimony. Where a declarant provides different declarations that are inconsistent with each other, they are to be “afforded...little weight.” *HTC Corp. v. Cellular Commc’ns Equip., LLC*, 877 F.3d 1361, 1370 (Fed. Cir. 2017).

III. The Board’s Construction of “Transaction Data” is Correct.

In the Institution Decision, the Board correctly construed “transaction data” as “encompassing any data involved in a transaction, including account data.” Inst. Dec. (Paper 15), 8. The Board correctly determined that “the claimed transaction

data must come from the output interface of a transaction card.” *Id.* The Board should maintain this construction. EX1043, ¶46.

As explained in Petitioner's Request for Rehearing (Paper 12), the term “transaction data” in claims 1 and 3 should not be distinguished from “account information” in the embodiment of Figure 11, because the challenged claims are not limited to the Figure 11 embodiment. Paper 12 at 5-10; EX1043, ¶¶47, 51-53. The Board correctly determined that:

the claimed “transaction data” that is “accepted...from an output interface of a transaction card” and “accepted...from a transaction card at an input interface of the card reader,” as recited in independent claims 1 and 3, comprises data stored on and read from a card, such as an ID number, password, authentication information, or session information, that can be used to facilitate a transaction.

Inst. Dec., 8. Figure 11 is also not the only place where transaction data is described. EX1043, ¶60 (citing EX1001, 1:65-2:2, 2:33-37). The Board should maintain this interpretation. EX1043, ¶¶46, 48, 54.

Under the heading “Claim Construction,” Patent Owner indicated that the Board need not engage in claim construction. POR, 12. But Patent Owner then criticized the Board's construction under the mistaken theory that “the '286 Patent makes clear that ‘transaction data’ is not ‘account data,’ i.e., is not a[n] ‘ID number,

password, authentication information, or session information.” POR, 7, 25-27. Patent Owner has not provided a proposed construction. EX1043, ¶57.

Patent Owner's criticism of the Board's construction is incorrect. Patent Owner repeats its erroneous argument that “transaction data” is distinguished from the “account data” of Figure 11, even though the challenged claims are not limited to the Figure 11 embodiment. Inst. Dec., 8; Reh. Req., 5-10. Claims 1 and 3 require the transaction data to be “accepted from an output interface of a transaction card to the output pin,” “convert[ed to] digital data,” and then used for “purchases from an online merchant.” *See, e.g.*, limitations [1.1.1], [1.1.3], [1.3.1], and [1.3.2]. Claims 1 and 3 do not have any feature relating to “account information” or distinguish it from the “transaction data” in the embodiment of Figure 11. Claims 1 and 3 do not require any aspect of “user authentication,” which is what Figure 11 embodiment describes. EX1001, 12:13-59; Inst. Dec., 8 (“Claims 1–4 of the '286 Patent do not recite coded instructions implementing an authentication process.”); Reh. Req., 5-10. The Board should again reject Patent Owner's attempt to limit transaction data to the user authentication embodiment of Figure 11, a feature not recited in the claims. EX1043, ¶58.

Patent Owner is incorrectly importing limitations that are not required by the claims. Specifically, Patent Owner incorrectly asserts that the claimed “transaction data” is distinguished from account data because the transaction data is allegedly

“submitted after a new session key (which includes the ‘ID Number,’ i.e., a form of ‘account data’) is generated.” POR, 26. Again, none of these limitations are required by the claims. “Though understanding the claim language may be aided by explanations contained in the written description, **it is important not to import into a claim limitations that are not part of the claim.**” *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004); EX1043, ¶¶55-56, 59.

Patent Owner also argues that “transaction data” should be “construed differently” from “account data” because the specification uses the terms differently. POR, 23, 26. The presumption Patent Owner refers to, however, only applies when *the claims* recite different features. *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“the use of these different terms *in the claims* connotes different meanings.”) (emphases added). The claims only recite “transaction data,” not “account data.” Patent Owner also argues that a PIN code is an “example of account data,” but a PIN code is not recited in the claims. POR, 26.

The Board should maintain its construction of “transaction data” as “encompassing any data involved in a transaction, including account data.” Inst. Dec., 8. EX1043, ¶61.

IV. Cho Teaches the Disputed Claim Limitations.

As shown in the Petition, claim 1 is obvious over Cho in view of Aaron and Carpenter. Pet., 39-58. Further, claim 3 is obvious over Cho in view of Aaron. Pet., 64-74. Patent Owner argues that Cho does not disclose two claim features. First, Patent Owner argues that Cho (EX1005) does not disclose “transaction data” as recited in limitations [1.1.3], [1.3.1], and [3.3]. POR, 6-7, 21-28. Patent Owner’s arguments are based on its erroneous claim construction that “transaction data” is distinguished from “account data.” If the Board rejects Patent Owner’s claim construction position (it should), then Patent Owner’s arguments for limitations [1.1.3], [1.3.1], and [3.3] are moot. Second, Patent Owner argues that Cho does not disclose the “analog variable voltage audio signal” as recited in limitations [1.1.3], [1.3.1], and [3.3]. POR, 28-30. As shown in the Petition and below, this argument lacks merit. EX1043, ¶¶62-63

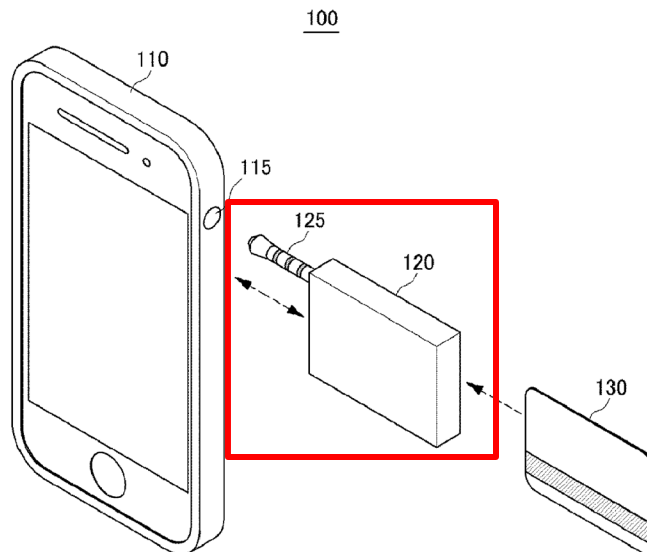
A. Cho’s “account information” from a transaction card teaches the claimed “transaction data.”

The Petition showed that Cho’s “account information” teaches the claimed “transaction data.” Pet., 42-43 (limitation [1.1.1]), 67-68 (limitation [3.1.1]).

Even if the Board accepts Patent Owner’s argument that “transaction data” does not include “account information” (it should not), Cho teaches the claimed “transaction data” under Patent Owner’s interpretation. According to Patent Owner, the term “account data” in the ’286 Patent refers to an “ID number, password,

authentication information, or session information.” POR, 7, 27. In other words, account data is for ***user authentication***, while transaction data is used to “perform a series of banking transactions” after a user is authenticated. POR, 26. Cho’s description of “account information” is transaction data even under Patent Owner’s interpretation, not account data for user authentication. EX1043, ¶¶64-65.

Cho’s “account information” is not used for user authentication—it refers to a credit card number and expiration date used for precisely the same purpose as transaction data under Patent Owner’s interpretation: “perform[ing] a series of banking transactions.” POR, 26; *see* EX1005, 3:24-27 (“[T]he account information may include at least one of an account number, a card expiration date, etc.”), 5:55-58; Pet., 46. As shown in Figure 1, below, Cho’s “card payment apparatus 120” receives account information (“transaction data”) “read from a card 130.” Pet., 46-47 (citing EX1005, 3:22-31), 4:60-67; EX1003, ¶¶128-132); Pet., 41-42 (describing “account information...read from a card 130 by card payment apparatus 120.”) (citing EX1005, 3:20-24; EX1003, ¶118); EX1043, ¶¶66-67 (citing EX1047, 4-5, 9).

FIG. 1**EX1001, Fig. 1 (annotated)**

Cho's description of account information is entirely consistent with the '286 Patent's description of transaction data. The '286 Patent describes "a transaction card bearing data" that is provided "to a card reader." EX1001, 1:65-2:7, 2:33-37. Cho's account information is provided in precisely the same way. Cho's system 100 is "a card payment system." EX1005, 3:3-5, 4:42-44; Pet., 39-41, 53. Cho's account information, including a card number and expiration date, are "read from a card 130 by card payment apparatus 120." EX1005, 3:22-24; Pet., 42, 67. Cho's system "execute[s] a card payment based at least in part on the account information." EX1005, 3:52-56, Pet. 29, 35, 56, 63, 72. That Cho's account information of the card in Figure 1 is used "to execute a card payment" shows that this account information is the claimed "transaction data." EX1005, 3:52-56; EX1043, ¶68.

Patent Owner argues that Cho's account information from the transaction card is not transaction data because Figure 11 of the '286 Patent includes the word "Account" along with a list of data for user authentication (i.e., an "ID Number," a "Secret Seed," and a "Pin Code.")). EX1043, ¶169.

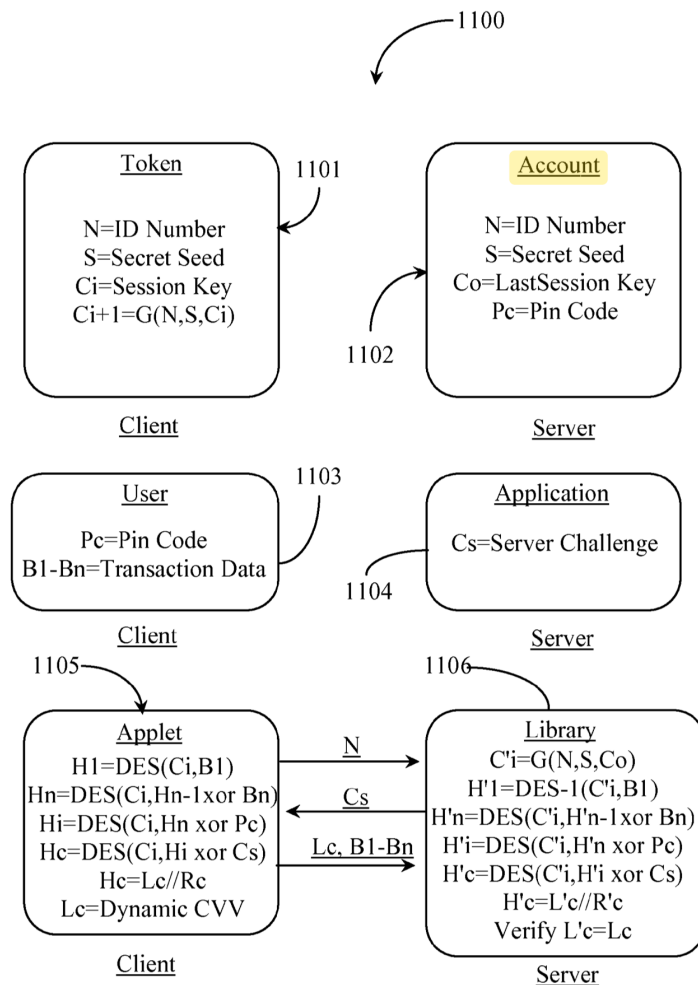


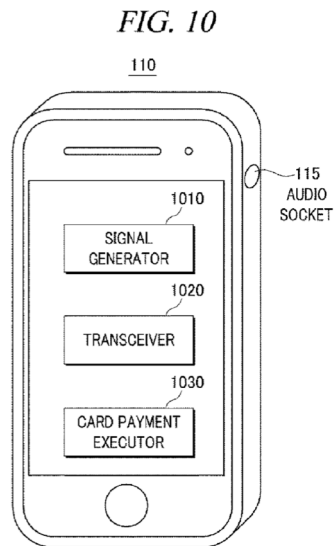
Fig. 11

EX1001, Fig. 11 (annotated)

According to Patent Owner, because the term "Account" in Figure 11 of the '286 Patent is included in the same box as information related to user authentication, Cho's account information must refer to user authentication as well, and, therefore,

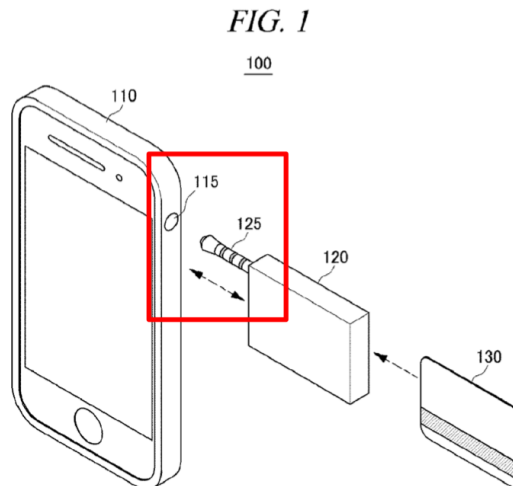
cannot be transaction data. POR, 21-22, 25-26. However, how the '286 Patent uses the term “account” in Figure 11 is irrelevant to how Cho uses the term “account information.” Cho’s “account information” refers to data on a card, such as a card number and expiration date, used for card payments. *See* EX1005, Fig. 1, 3:3-5, 3:22-27, 3:52-56, 4:42-44. That information includes standard credit card information such as a card number and expiration date. EX1005, 3:24-27, 5:55-58. This account information as described by Cho refers to the same concept as the claimed “transaction data” used in a transaction (limitations [1.3.2] and [3.4]). EX1043, ¶70.

Further, the Petition showed that Cho teaches the “transaction data” as recited in limitations [1.3.1]-[1.3.2] and [3.3]-[3.4]. Limitations [1.3.1]-[1.3.2] and [3.3]-[3.4] require the “transaction data” to be converted to digital data and then used for purchases. The Petition showed that Cho’s client device 110 (“smart telephone”) (*see* Fig. 10 below) receives the account information as an analog signal from card payment apparatus 120 and converts it “into the first digital signal...using any well-known analog-digital converting scheme.” Pet., 55 (citing EX1005, 11:27-29, 11:35-38; EX1003, ¶¶134, 146); Pet., 71; EX1043, ¶71.



EX1005, Fig. 10; EX1003, ¶134.

Pet., 48



EX1005, Fig. 1 (Annotated); EX1003, ¶145.

Pet., 55

EX1003, ¶¶134, 146

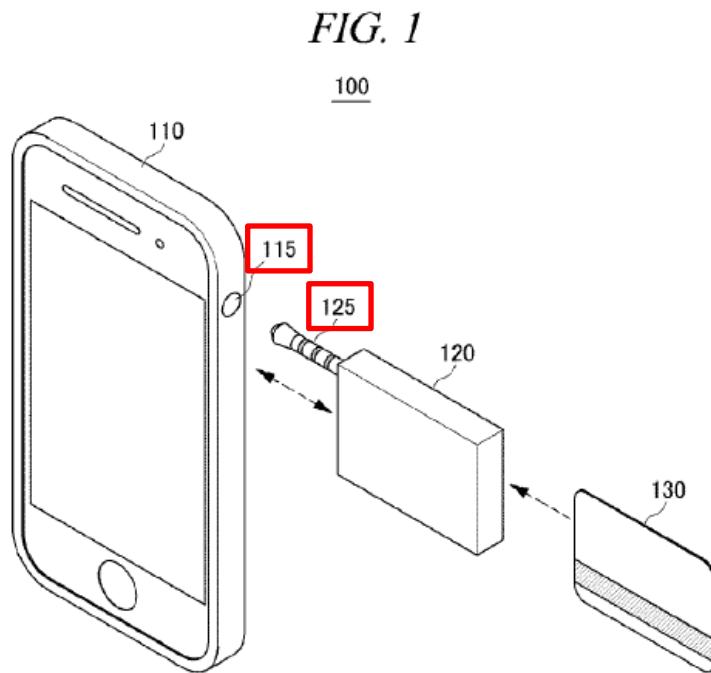
Therefore, Cho teaches the “transaction data” and operations as recited in limitations [1.1.3], [1.3.1], and [3.3]. EX1043, ¶72.

B. Cho teaches “an Analog Variable Voltage Audio Signal.”

Patent Owner argues that there is somehow a difference between the “analog variable voltage signal” recited in limitations [1.1.3], [1.3.1], and [3.3] and Cho’s “alternating current (AC) voltage of an acoustic signal.” POR, 28-30. There is no such distinction, and Patent Owner has provided *no* evidence in support of its argument. EX1043, ¶73.

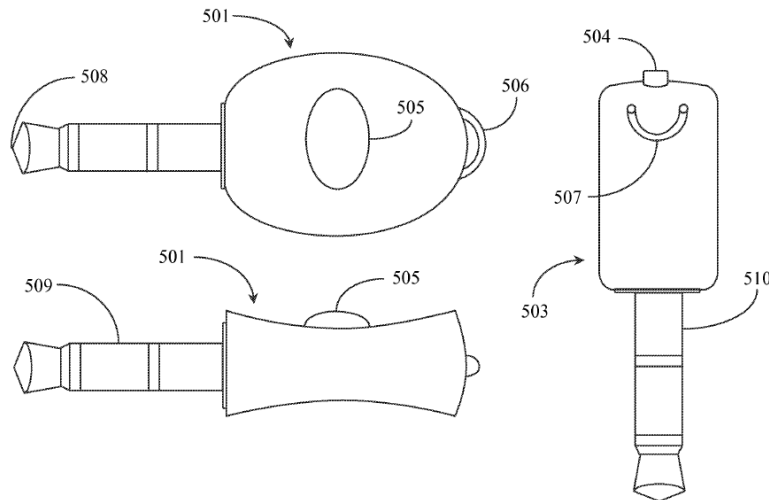
Cho’s “analog signal” is transmitted via the audio jack 125 of the card payment apparatus 120 to the audio socket 115 of the client device 110, as illustrated

below. Pet., 42 (citing EX1005, 3:20-22) (“Client device 110...receive[s], from card payment apparatus 120 via audio jack 125, a first analog signal.”); Pet., 43-44 (describing jack 125 transmitting signal to jack 115 on client device) (citing EX1005, 4:58-65, Figs. 1-2, 9-10); EX1043, ¶74.



EX1005, Fig. 1 (annotated)

As shown in Figure 5, below, the '286 Patent's “key jack” transmits the analog signal via an identical audio jack, inserted into a corresponding “audio in” line on a PC such as the microphone port.” EX1001, 6:61-64. The transaction card reader and smart telephone also transmit the analog signal via the same type of audio jack and corresponding microphone port. EX1001, Fig. 6 (“Tip/Ring” and “Sleeve”), 9:58-61 (“hardwire cable that connects...to the microphone input”). EX1043, ¶75.

**EX1001, Fig. 5**

Accordingly, both Cho and the '286 Patent describe transferring the analog signal in the same way using the same standardized connections. There is no distinction between the “analog variable voltage signal” and “alternating current (AC) voltage of an acoustic signal.” Mr. McNair’s testimony, which is based on other prior art at the time, supports this understanding. EX1043, ¶76.

For example, while Patent Owner argues that “AC voltage” converted to a DC voltage “does not directly correspond to the original audio waveform,” POR, 29, the claims do not require either an AC or DC voltage that “directly correspond[s] to the original audio waveform.” But Cho’s AC voltage does anyway. The “(AC) component” is “the portion of analog signals that actually represents sounds.” EX1040, [0046]; EX1041, 19:44-49 (“AC signal[s]” are “representative of the audio signal.”); EX1042, 6:31-33 (“ac input” is “representative of said transmit audio signal.”). Even after conversion to a DC voltage signal, an analog signal is still

“representative of the rectified transit audio signal.” EX1042, 3:53-61; EX1043, ¶¶77-78.

Contrary to Patent Owner's arguments, “an AC voltage signal” is also a “variable frequency and/or voltage” signal. EX1044, [0018], claim 17 (“an AC voltage signal having a variable rms voltage”); EX1045, 2:67-3:3 (“a variable AC voltage signal”); EX1043, ¶77. An alternating current is a variable signal because it “reverses direction at regularly recurring intervals.” EX1046, 28; EX1043, ¶77. Further, a current represents an audio signal, just like a voltage does. EX1043, ¶77 (discussing relationship between current and voltage with Ohm's law).

Accordingly, Cho discloses or at least renders obvious limitations [1.1.3], [1.3.1], and [3.3]. EX1043, ¶80.

Patent Owner does not present any arguments against references in the Petition other than Cho, and does not separately contest the unpatentability of dependent claims 2 and 4.

V. Conclusion

The Board should find the Challenged Claims unpatentable.

Respectfully submitted,

Dated: September 13, 2024
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CERTIFICATE OF WORD COUNT

Under 37 C.F.R. § 42.24, the undersigned attorney for the Petitioner, Askeladden, L.L.C., declares that the argument section of this Reply has 5,442 words, according to the word count tool in Microsoft Word™.

Respectfully submitted,

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PETITIONER'S EXHIBIT LIST

EX1001	U.S. Patent No. 9,679,286 to Colnot et al. ("286 Patent")
EX1002	Prosecution History of U.S. Patent No. 9,679,286 (U.S. Application No. 14/636,674) ("674 Application")
EX1003	Declaration of Bruce McNair
EX1004	<i>Curriculum Vitae</i> of Bruce McNair
EX1005	U.S. Patent No. 9,330,385 to Cho et al. ("Cho")
EX1006	U.S. Patent Publication No. 2013/0185208 to Aaron et al. ("Aaron")
EX1007	U.S. Patent Publication No. 2014/0008432 to de Geer et al. ("de Geer")
EX1008	U.S. Patent Publication No. 2013/0124606 to Carpenter et al. ("Carpenter")
EX1009	Declaration of Glenn J. Perry
EX1010	Letter Agreement Between Glenn J. Perry and Askeladden L.L.C dated May 20, 2020
EX1011	U.S. Application No. 14/524,842 ("842 Application")
EX1012	U.S. Application No. 11/533,030 ("030 Application")
EX1013	U.S. Provisional Application No. 60/719,273 ("273 Provisional")
EX1014	Comparison of the as-filed specification of the '674 Application (filed 2015) with the as-filed specification of the '842 Application (filed 2014)
EX1015	Comparison of the as-filed specification of the '674 Application (filed 2015) with the as-filed specification of the '030 Application (filed 2006)

EX1016	Comparison of the as-filed specification of the '842 Application (filed 2014) with the as-filed specification of the '030 Application (filed 2006)
EX1017	U.S. Patent No. 9,436,855 to Marcus et al. ("Marcus")
EX1018	U.S. Patent No. 8,302,860 to McKelvey ("McKelvey")
EX1019	KR 2003 0076045 ("Bluetooth")
EX1020	U.S. Patent No. 6,607,136 to Atsmon et al. ("Atsmon")
EX1021	U.S. Patent No. 7,761,374 to Sahota et al. ("Sahota")
EX1022	U.S. Application No. 2004/0093436 to Colnot ("Colnot")
EX1023	U.S. Patent Application No. 2005/0075134 to Steenstra et al. ("Steenstra")
EX1024	"Turning your mobile into a magnetic stripe reader," Deepquest ("Deepquest")
EX1025	U.S. Patent Application No. 2004/0230489 to Goldthwaite et al. ("Goldthwaite")
EX1026	U.S. Patent Application No. 2004/039919 to Takayama et al. ("Takayama")
EX1027	U.S. Patent No. 9,016,572 to Babu et al. ("Babu")
EX1028	U.S. Patent No. 7,490,777 to Walsh ("Walsh")
EX1029	U.S. Patent No. 7,240,836 to Vrotsos et al. ("Vrotsos")
EX1030	"Application Programmer's Guide, IBM, 2011
EX1031	U.S. Patent No. 9,003,508 to Colnot et al. ("508 Patent")
EX1032	U.S. Patent Publication No. 2007/0064833 to Colnot et al. ("833 Publication")

EX1033	Memorandum of Director Katherine K. Vidal, “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation,” June 21, 2022 (“ <i>Fintiv</i> Guidance”)
EX1034	United States District Court – National Judicial Caseload Profile (March 2023)
EX1035	Apple Store, (September 14, 2005, Internet Archive Capture), available at https://web.archive.org/web/20050914225016/http://store.apple.com:80/1-800-MY-APPLE/WebObjects/AppleStore.woa
EX1036	<i>Identify your iPod Model</i> , Apple, available at https://support.apple.com/en-us/HT204217
EX1037	<i>Apple Announces iPhone 2.0 Software Beta</i> , Apple Press Release, March 6, 2008, available at https://www.apple.com/newsroom/2008/03/06Apple-Announces-iPhone-2-0-Software-Beta/
EX1038	<i>iPhone App Store Downloads Top 10 Million in First Weekend</i> , Apple Press Release, July 14, 2008, available at https://www.apple.com/newsroom/2008/07/14iPhone-App-Store-Downloads-Top-10-Million-in-First-Weekend/
EX1039	<i>Identify your iPhone model</i> , Apple, available at https://support.apple.com/en-us/HT201296
EX1040 (NEW)	U.S. Patent Publication No. 2012/0014531 to Yamkovoy (“Yamkovoy”)
EX1041 (NEW)	U.S. Patent No. 4,926,458 to Reger et al. (“Reger”)
EX1042 (NEW)	U.S. Patent No. 4,178,548 to Thompson (“Thompson”)

EX1043 (NEW)	Supplemental Declaration of Bruce McNair
EX1044 (NEW)	U.S. Patent Publication No. 2002/0033680 to Fehd et al. ("Fehd")
EX1045 (NEW)	U.S. Patent No. 6,039,291 to Dobson, IV ("Dobson")
EX1046 (NEW)	IEEE 100: The Authoritative Dictionary of IEEE Standard Terms, Seventh Edition (December 2000) ("IEEE 100")
EX1047 (NEW)	International Standard, ISO 7498-2, First Edition, February 25, 1989 ("ISO 7498-2")

CERTIFICATE OF SERVICE

The undersigned certifies, under 37 C.F.R. § 42.6(e), that service was made on the Patent Owner as detailed below.

Date of service September 13, 2024

Manner of service Electronic Service: isaac@rabilaw.com

Documents served **Petitioner's Reply and Exhibits 1040-1047**

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