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Paper 15
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MED-EL ELEKTROMEDIZINISCHE GERÄTE GES.M.B.H.,
Petitioner,

v.

ADVANCED BIONICS AG,
Patent Owner.

IPR2020-00190
Patent 8,155,747 B2

Before PATRICK R. SCANLON, ERIC C. JESCHKE and RICHARD H. MARSCHALL, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge.*

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

I. INTRODUCTION

MED-EL Elektromedizinische Geräte Ges.m.b.H. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–8 of U.S. Patent No. 8,155,747 B2 (Ex. 1001, "the '747 patent"). Advanced Bionics AG ("Patent Owner") filed a Preliminary Response (Paper 8, "Prelim. Resp."). With our authorization (*see* Paper 10), Petitioner filed a Reply (Paper 11, "Prelim. Reply"), and Patent Owner filed a Sur-reply (Paper 14, "Prelim. Sur-reply").

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2019). To institute an *inter partes* review, we must determine that the information presented in the Petition shows "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). For the reasons set forth below, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. We thus institute *inter partes* review on all challenged claims on all asserted grounds. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition"); Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019) ("The Board will not institute on fewer than all claims or all challenges in a petition."), *available at* https://www.uspto.gov/TrialPracticeGuide Consolidated ("TPG").

II. BACKGROUND

A. Related Matters

The parties identify the following related proceeding involving the '747 patent: *MED-EL Elektromedizinische Geräte Ges.m.b.H. v. Advanced Bionics, L.L.C.*, Case No. 1:18-cv-01530 (D. Del.) ("the Delaware Case"). Pet. 2–3; Paper 6, 2.

B. Real Parties-in-Interest

Petitioner identifies itself, MED-EL Elektromedizinische Geräte Ges.m.b.H., and its subsidiary, MED-EL Corporation, USA, as the real parties in interest. Pet. 3. Patent Owner identifies itself, Advanced Bionics AG, Advanced Bionics, L.L.C., and Sonova AG as the real parties in interest. Paper 6, 2.

C. The '747 patent

The '747 patent, titled "Electric and Acoustic Stimulation Fitting Systems and Methods," issued April 10, 2012, with claims 1–9. Ex. 1001, code (54), code (45), 15:31–16:54. The '747 patent relates to "modifying the parameters of at least one hearing device for a patient with residual hearing" and providing "orchestration of acoustic and electric stimulation of patients wearing such devices." *Id.* at code (57).

The '747 patent indicates that cochlear prostheses, or cochlear implants, produce sound sensations in deaf or partially deaf patients by direct electrical stimulation of the auditory nerve, and can be used in conjunction with hearing aids for partially deaf patients. *Id.* at 1:29–33. "The patterns of electrical stimulation are derived from acoustic signals picked up by a microphone and transformed by a so-called speech processor that is programmed to meet the particular requirements of each patient." *Id.*

at 1:37–41. Furthermore, hearing aids, or acoustic transducers, can be used in conjunction with cochlear implants either in the same ear as the implant (i.e., ipsilateral) or in the opposite ear as the implant (i.e., contralateral). *Id.* at 3:28–32. According to the '747 patent, at the time of the invention, there were no established systems and methods for simultaneously or sequentially modifying the parameters of both cochlear implants and hearing aids in a patient using both devices. *Id.* at 3:41–45.

Thus, the '747 patent "is directed to fitting systems and techniques that may be used to fit a variety of cochlear implants and a variety of hearing aids . . . during the same fitting session."[1] *Id.* at 3:53–56. One such fitting system is shown in Figure 4A, which is reproduced below.

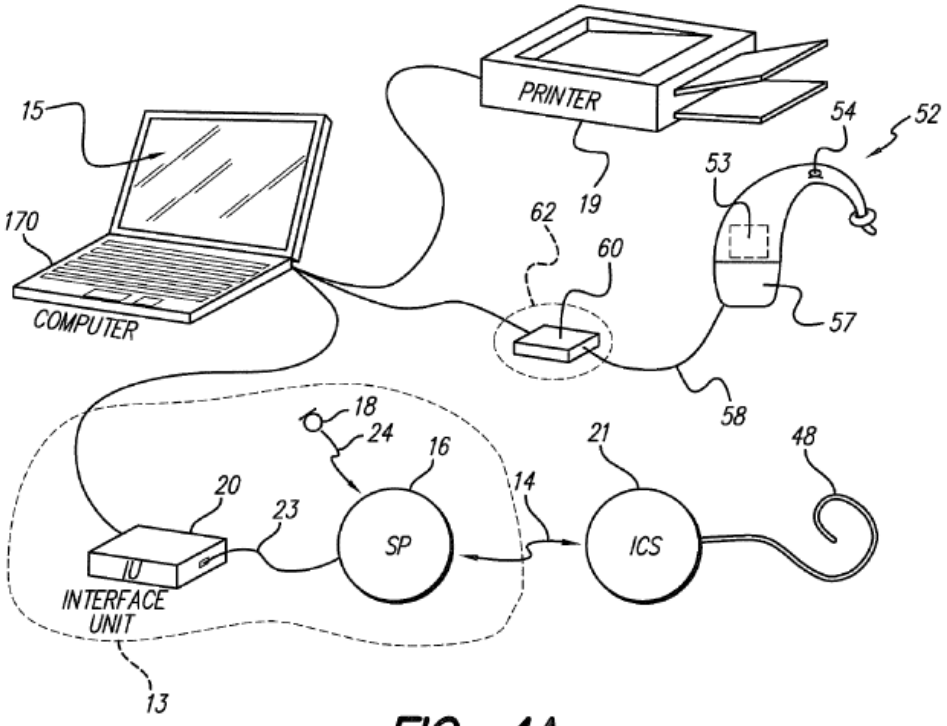

FIG. 4A

[1] As used in the '747 patent, the terms "fit" and "fitting," among others, relate to making electronic or software programming changes to a device, as opposed to making physical or hardware changes. Ex. 1001, 2:43–48.

Figure 4A shows the "basic components used to fit a patient with a cochlear implant system and a hearing aid." *Id.* at 11:53–54. The cochlear implant system (which is also depicted in Figure 2A) includes speech processor (SP) 16 linked to implantable cochlear stimulator (ICS) 21, which is connected to electrode array 48. *Id.* at 11:54–57. Microphone 18 is also linked to speech processor 16 via communication link 24. *Id.* at 11:57–58. Hearing aid system 52 (which is also depicted in Figure 3B) includes internal electronics 53, microphone 54, audio boot 57, and communications wire 58. *Id.* at 12:14–17.

Laptop computer 170 is coupled to speech processor 16 through interface unit 20 and to audio boot 57 through audio interface unit 60. *Id.* at 11:58–60, 12:17–19. Computer 170 provides input and/or command signals to speech processor 16 and electronics 53. *Id.* at 12:3–7, 12:29–33. To test a patient's threshold levels, the signals provided by computer 170 to speech processor 16 replace the signals normally sensed by microphone 18, and the signals provided by computer 170 to electronics 53 replace the signals normally sensed by microphone 54. *Id.* at 12:7–10, 12:33–36. To test a patient's ability to comprehend speech, the signals provided by computer 170 to speech processor 16 are command signals that supplement the signals sensed by microphone 18, and the signals provided by computer 170 to electronics 53 are command signals that supplement the signals sensed by microphone 54. *Id.* at 12:3–13, 12:36–39.

Laptop computer 170 includes "display screen 15 on which selection screens, stimulation templates and other information may be displayed and defined." *Id.* at 12:40–43. Thus, computer 170 enables the fitting process by providing "a mechanism for the audiologist or other medical personnel,

or even the patient, to easily select and/or specify a particular pattern of stimulation parameters that can be used thereafter." *Id.* at 12:43–47.

Figure 4B shows another fitting system in which ICS 21 and hearing aid 52 are linked to a speech processor configured or emulated within a palm personal computer that includes its own display screen. *Id.* at 12:62–13:1. In each of the systems of Figure 4A and 4B, ICS 21 and hearing aid 52 "are suitable for being situated in the same ear (ipsilateral) or contralateral ears of a patient (e.g., with residual hearing)." *Id.* at 13:13–15.

Figure 4C, which shows yet another fitting system, is reproduced below.

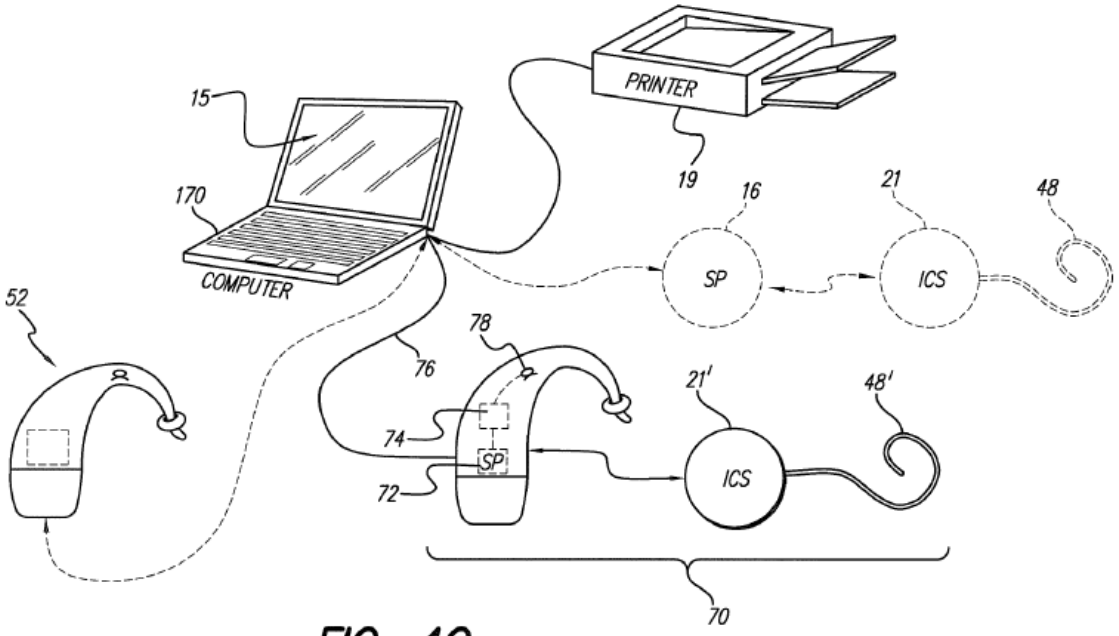

FIG. 4C

Figure 4C shows a "fitting system that can also be used with an electric-acoustic processor system 70 situated in one ear (ipsilateral) of a patient (e.g., with both residual hearing and the need for electrical stimulation for the same ear)." *Id.* at 13:16–20. Electric-acoustic processor system 70 includes speech processor 72 and internal acoustic electronics 74

that are linked with computer 170 through communications link 76. *Id.* at 13:20–24. Although not described in the specification, electric-acoustic processor system 70 is shown to include ICS 21' and electrode array 48'. *Id.* at Fig. 4C. Also, electric-acoustic processor system 70 "is configured to deliver both acoustic stimulation to the auditory sensory organs of the ear and electric stimulation to the auditory nerve of the same ear." *Id.* at 13:35–39. Computer 170 includes "software to control reading, displaying, delivering, receiving, assessing, evaluating, and/or modifying both acoustic and electric stimulation data sent to the system 70." *Id.* at 13:32–35.

D. Challenged Claims

Of the challenged claims, claim 1 is the only independent claim and is reproduced below:

> 1. A system for modifying the parameters of acoustic and electric stimulation hearing devices, comprising:
>
> a computer provided with access to software that is configured to communicate with and modify parameters of at least one of (a) a hearing aid and a cochlear implant speech processor and (b) the acoustic and electric elements of an electric-acoustic processor;
>
> wherein the hearing aid and the acoustic elements of an electric-acoustic processor are devices that are configured to generate or apply acoustic stimulation signals to the acoustic sensing organs of the ear, the acoustic stimulation signals being sound waves directed into the ear canal;
>
> wherein the cochlear implant speech processor and the electric elements of an electric-acoustic processor are devices that are configured to generate or apply electric stimulation signals to the auditory nerve of the ear, the electric stimulation signals being stimulation current applied to electrodes implanted within the cochlea of the ear;

> wherein the hearing aid and the cochlear implant speech processor, or the acoustic and electric elements of the electric-acoustic processor, are situated in the same ear and are configured to generate or apply both acoustic stimulation signals to the acoustic sensing organs of the ear and electric stimulation signals to the auditory nerve of the same ear.

Ex. 1001, 15:31–57.

E. Evidence

Petitioner relies on the following prior art references in the asserted grounds of unpatentability:

Reference	Exhibit No.
US 5,721,783, issued February 24, 1998 ("Anderson")	Ex. 1003
US 2001/0031996 A1, published October 18, 2001 ("Leysieffer")	Ex. 1004
WO 92/08330 A1, published May 14, 1992 ("Dooley")	Ex. 1005
von Ilberg et al., *Electric-Acoustic Stimulation of the Auditory System*, ORL: Journal for Oto-Rhino-Laryngology and Its Related Specialties, 61:334–40 (1999) ("von Ilberg 1999")	Ex. 1006
WO 00/69512 A1, published November 23, 2000 ("Harrison")	Ex. 1007
US 6,231,604, issued May 15, 2001 ("von Ilberg '604")	Ex. 1008

Petitioner also relies on the Declaration of Douglas Paul Sladen, Ph.D. (Ex. 1002, "the Sladen Declaration").

F. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1, 3–7	102(b)	Anderson
1, 2, 4, 5	102(b)	Leysieffer
1, 2, 4–7	102(b)	Dooley
1, 2, 4–7	103(a)	Dooley, von Ilberg 1999
1, 2, 4, 5	103(a)	Leysieffer, Harrison
8	103(a)	Leysieffer, Harrison, von Ilberg '604

Pet. 4–5.

III. ANALYSIS

A. Discretion Under 35 U.S.C. § 314(a)

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314(a) to deny institution because of the relatively advanced stage of the co-pending Delaware Case. Prelim. Resp. 7–15; Prelim. Sur-reply 4–7. Patent Owner asserts that the Delaware Case "(i) is between the same parties, (ii) is currently considering the same invalidity challenges, and (iii) is scheduled for (no more than) a 10-day jury trial on May 10, 2021, before this Board would be statutorily required to issue a final written decision in this proceeding." Prelim. Resp. 7.

The Director has discretion to institute an inter partes review under 35 U.S.C. § 314(a). *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15 (PTAB Sept. 6, 2017) (precedential) (citing 35 U.S.C. § 314(a)). We consider an advanced state of a parallel district court proceeding as a "factor that weighs in favor of denying the Petition under § 314(a)." *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752,

[2] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Pub. L. No. 112-29, §§ 3(b), 3(c), 3(n)(1), 125 Stat. 284, 287, 293 (2011). Because the application from which the '747 patent issued was filed before March 16, 2013, we apply the pre-AIA versions of §§ 102, 103.

Paper 8 (PTAB Sept. 12, 2018) (precedential) ("*NHK*"). Specifically, we consider an early trial date as part of a "balanced assessment of all relevant circumstances of the case, including the merits." TPG 58. As part of this balanced assessment, we consider the following factors:

1. whether the court granted a stay or evidence exists that one may be granted if this 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.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). We address each factor in turn.

1. Factor 1: whether the court granted a stay or evidence exists that one may be granted if this proceeding is instituted

The parties do not address whether the district court has considered granting a stay in the Delaware Case, and we are not aware of any evidence of record that a stay is or is not likely to be granted if this proceeding is instituted. Accordingly, this factor weighs neither for nor 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 in the Delaware Case is set to complete a jury trial before any final decision from the Board would

be due, with trial scheduled to begin in [the] Delaware Case on May 10, 2021." Prelim. Resp. 13 (citing Ex. 2010, 15). This trial date is less than one month before the projected statutory deadline for our final written decision in this proceeding. Furthermore, Petitioner asserts that the hearing on claim construction in the Delaware Case has been delayed twice since Patent Owner filed its Preliminary Response, and is now set for June 2, 2020. Prelim. Reply 5.

Patent Owner does not contest this assertion, arguing instead that "[t]he recent delay of the *Markman* hearing by two months does not alter the analysis, and Petitioner's ruminations about further delay or schedule impacts are just speculation—all litigation events, including any trial, are still scheduled to occur in the District Court before" the projected statutory deadline for a final written decision. Prelim. Sur-reply 4. According to Patent Owner, "[n]o other schedule changes [in the Delaware Case] have been discussed," and "[w]hile other interim dates may need to be slightly adjusted, any speculation about movement of the trial date is wholly speculative and unsupported." *Id.* at 5.

We do not agree. Given that the hearing on claim construction has been delayed twice by a total of two months, it is not clear that the trial will proceed as currently scheduled. Even if the trial date were to be postponed by only a month or two, it is likely that the Board would issue its final written decision prior to the district court reaching a decision on the same issues. Thus, the likelihood of inconsistent results between the Board and the district court here seems slight. In addition, "[i]f the court's trial date is at or *around the same time* as the projected statutory deadline or even significantly after the projected statutory deadline, the decision whether to

institute will likely implicate other factors." *Fintiv* at 9 (emphasis added). In this case, even if the trial date is not changed, the fact that the court's trial date is around the same time as the projected statutory deadline implicates the amount of investment the court and parties already have made in the parallel proceeding, as discussed below in Factor 3. In other words, because the parallel proceeding is not nearing its trial date, relatively little investment has been made in the parallel proceeding, as discussed in detail below. *See Fintiv* at 10 (noting that the "investment factor [(Factor 3)] is related to the trial date factor, in that more work completed by the parties and the court in the parallel proceeding tends to support the arguments that the parallel proceeding is more advanced, a stay may be less likely, and instituting would lead to duplicative costs").

In any event, we need not speculate as to when a trial in the related district court proceeding will occur. Given the minimal amount of overlap between the currently scheduled trial and the deadline for a decision in this proceeding—a few weeks—this factor strongly weighs in favor of instituting *inter partes* review.

3. Factor 3: investment in the parallel proceeding by the court and the parties

Factor 3 relates to "the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision." *Fintiv* at 9. "If, at the time of the institution decision, the district court has not issued [claim construction] orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution under *NHK*." *Id.* at 10.

Patent Owner contends that briefing on claim construction is complete and a decision on claim construction will issue no later than May 27, 2020. Prelim. Resp. 13–14 (citing Ex. 2011, 2, 14). But, as noted above, the hearing on claim construction has been rescheduled to June 2, 2020. Thus, a claim construction order will not have issued at the time of this Decision. Petitioner also asserts that document production is ongoing and no depositions have been taken or scheduled. Prelim. Reply 6.

In addition, Patent Owner argues that Petitioner unreasonably delayed filing the Petition. Prelim. Resp. 14–15; Prelim. Sur-reply 4–5. Patent Owner contends that Petitioner served its initial invalidity contentions, which included the same prior art arguments based on Leysieffer, Dooley, von Ilberg 1999, and von Ilberg '604 that are presented in the Petition, four months before filing the Petition. Prelim. Resp. 15 (citing Ex. 2007, Ex. C at 4–12, 17–35, 61–63, 69–85). Patent Owner also contends that, before filing the Petition, Petitioner amended its invalidity contentions to include the same prior art arguments based on Anderson and Harrison that are presented in the Petition. *Id.* (citing Ex. 2008, Ex. C at 25–31, 41–51, 87–96, 98–109, 111–15).

Petitioner's Amended Initial Invalidity Contentions, however, were served November 19, 2019, which was only eight days before the Petition was filed. *See* Ex. 2008, 20; Paper 4, 1. Furthermore, we note that Petitioner's invalidity contentions assert a number of other prior art arguments based on several additional references that are not asserted in the Petition. *See generally* Exs. 2007, 2008. Presumably, Petitioner spent time giving due consideration to which of these bases of invalidity it elected to assert as grounds of unpatentability in the Petition, particularly given the

word limits placed on petitions requesting *inter partes* review. In view of these considerations, we are not persuaded that Petitioner unreasonably delayed the filing of the Petition.

For the above reasons, this factor 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 Petitioner "asserts the same or overlapping prior art and obviousness challenges in its Petition grounds as it does in its invalidity contentions in the Delaware Case." Prelim. Resp. 10 (citing Ex. 2007, 4–5; Ex. 2008, 4–5; *Sand Revolution II, LLC v. Cont'l Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 12 at 17–18 (PTAB Feb. 5, 2020). Patent Owner also provides a chart comparing the grounds asserted in the Petition with Petitioner's invalidity contentions from the Delaware Case. *Id.* at 12–13. Although Petitioner's invalidity contentions assert several additional references as either anticipating or rendering obvious certain claims of the '747 patent, we agree that the grounds asserted in the Petition largely overlap with corresponding invalidity contentions. We note that Petitioner does not appear to dispute this overlap. Prelim. Reply 5–7.

We conclude this factor weighs in favor of exercising our discretion to deny institution.

5. Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same party

There is no dispute that Petitioner is a defendant in the Delaware Case. In this case, we have found that it is possible the Board will reach a final written decision prior to the district court reaching a decision. If this

were the outcome here, then the fact that the Petitioner is the defendant in the Delaware Case actually weighs in favor of institution, because the Petitioner would be estopped in the Delaware Case from raising the same issues upon issuance of the Board's final written decision. Because the trial date in the Delaware Case and the statutory due date for a final written decision in this proceeding are around the same time, this factor weighs neither for nor against exercising our discretion to deny institution.

6. Factor 6: other circumstances that impact the Board's exercise of discretion, including the merits

Patent Owner makes an argument that seemingly qualifies as "other circumstances" under this factor. Specifically, in response to Petitioner's argument that § 314(a) was merely an "additional factor" in the *NHK* panel's decision to deny institution under § 325(d) (*see* Prelim. Reply 6 (citing *NHK* at 18, 20)), Patent Owner argues Petitioner ignores that Patent Owner also presents strong § 325(d) arguments. Prelim. Sur-reply. 7. For the reasons discussed in the next section of this Decision, however, we are not persuaded that Patent Owner's § 325(d) arguments are strong and, therefore, do not impact our exercise of discretion under § 314(a).

7. Conclusion

In view of the foregoing, we find that, on balance, the factors weigh against discretionary denial. Thus, we decline to exercise our discretion to deny institution under 35 U.S.C. § 314(a).

B. Discretion Under 35 U.S.C. § 325(d)

Section 325(d) of Title 35 of the United States Code provides, in relevant part: "In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into

account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office." The Board uses a two-part framework for evaluating arguments under § 325(d):

> (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
>
> (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (designated precedential Mar. 24, 2020) ("*Advanced Bionics*"). The Board further explained that "[p]reviously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent." *Id.* at 7–8. The *Becton, Dickinson*[3] factors, which address discretion to deny when a petition presents the same or substantially the same prior art or arguments previously presented to the Office, are instructive. *Id.* at 9 ("[T]he *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d)." (footnote omitted)).

Patent Owner argues that we should deny institution under § 325(d) because all six grounds of unpatentability presented in the Petition "rely on references that the Examiner already considered and rejected during

[3] *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) ("*Becton, Dickinson*").

prosecution or references that are cumulative of references the Examiner considered." Prelim. Resp. 16. Specifically, Patent Owner contends that, as Petitioner acknowledges, Leysieffer, Dooley, Harrison, and von Ilberg '604 were listed in an IDS submitted during prosecution of the application that issued as the '747 patent. *Id.* at 16–17 (citing Pet. 15–18; Ex. 1009, 158–246). Patent Owner also contends that the IDS citing these references was submitted with a Request for Continued Examination so that the Examiner could consider the references, and the Examiner found the IDS compliant and did consider the cited references. *Id.* at 17 (citing Ex. 1009, 157, 617–618, 621).

Patent Owner notes that Anderson and von Ilberg 1999 were not of record during prosecution, but contends these references "are entirely cumulative of other references cited during prosecution." *Id.* According to Patent Owner, Petitioner asserts anticipation by Anderson by making "essentially the same anticipation arguments" as made in the anticipation grounds based on Leysieffer and Dooley. *Id.* at 17–18 (citing Pet. 21, 35, 45). Similarly, Patent Owner argues that Petitioner relies on von Ilberg 1999 to show acoustic and electric stimulation of the same ear of a patient in an ipsilateral arrangement, which is "the exact same argument" that Harrison discloses an ipsilateral arrangement in the obviousness ground based on the combination of Leysieffer and Harrison. *Id.* at 18 (citing Pet. 56, 60).

These arguments are not persuasive, however, because Patent Owner does not explain adequately how the disclosure of Anderson is cumulative of the disclosures of Leysieffer and Dooley, or how the disclosure of von Ilberg 1999 is cumulative of the disclosure of Harrison. In this case, the mere fact

that two references are relied on to satisfy the same claim limitation does not mean necessarily that the references are cumulative.

For instance, Petitioner relies on Anderson for allegedly disclosing both an acoustic stimulation hearing device and an electric stimulation hearing device located in the same ear of a patient. Pet. 21 (citing Ex. 1003, 27:4–29; Figs. 1, 2, 10, 11), 28–29 (quoting Ex. 1003, 27:41–67, citing Ex. 1003, Fig. 10). In contrast, Leysieffer discloses an arrangement that includes an electrical intracochlear array and an electromechanical transducer (as opposed to an acoustic stimulation hearing device) located in the same ear. Ex. 1004 ¶ 71, Fig. 1. Dooley discloses "a cochlear implant aid in one ear and a speech processing acoustic hearing aid in the other ear of a patient." Ex. 1005, 7:26–28.[4] Neither of these disclosures is cumulative of the above-mentioned disclosure of Anderson.

The disclosures of von Ilberg 1999 and Harrison overlap somewhat in that both references disclose a hearing aid and a cochlear implant located in the same ear of a patient. Ex. 1006, 337; Ex. 1007, 8:16–28, Fig. 2.[5] But Petitioner also relies on von Ilberg 1999 for allegedly disclosing fitting parameters of both the hearing aid and the cochlear implant. Pet. 55 (citing Ex. 1006, 337). Patent Owner does not direct us to any disclosure in Harrison that overlaps with this teaching of von Ilberg 1999.

[4] For consistency, we follow Petitioner's convention of citing to the original pagination located at the top of the pages in Dooley rather than the page numbers added by Petitioner.
[5] For consistency, we follow Petitioner's convention of citing to the original pagination of both von Ilberg 1999 and Harrison rather than the page numbers added by Petitioner.

Accordingly, we do not agree with Patent Owner that Anderson is cumulative of Leysieffer or Dooley, or that von Ilberg 1999 is cumulative of Harrison. As such, we determine that Petitioner's reliance on Anderson and von Ilberg 1999 does not involve the same or substantially the same art or arguments previously presented to the Office, and the first part of the *Advanced Bionics* framework is not satisfied with respect to either Anderson or von Ilberg 1999. The grounds based on Anderson and von Ilberg 1999, thus, do not implicate § 325(d).

Furthermore, for the reasons discussed below (*see infra* § III.H), Petitioner has shown, at this stage of the proceeding, a reasonable likelihood that it would prevail with respect to its challenge based on the combination of Dooley and von Ilberg 1999. Because we institute an *inter partes* review based on this ground, we institute as to all claims and all grounds. *See SAS*, 138 S. Ct. at 1354, 1359–60; TPG 64 ("The Board will not institute on fewer than all claims or all challenges in a petition."). Accordingly, we do not decide whether it would be appropriate to exercise our discretion under § 325(d) in the absence of the Dooley-von Ilberg 1999 ground.

We note that "[t]here may be other reasons . . . where the 'effect . . . on the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings,' 35 U.S.C. § 316(b), favors denying a petition even though some claims meet the threshold standards for institution under 35 U.S.C. §§ 314(a), and 324(a)." TPG 58. For example, in *Chevron Oronite Co. LLC v. Infineum USA L.P.*, a panel exercised its discretion to deny a petition when the petitioner demonstrated, at most, a reasonable likelihood of prevailing with respect to two dependent claims out of a total of twenty

challenged claims. IPR2018-00923, Paper 9 at 10–11 (PTAB Nov. 7, 2018). In that case, the panel determined that instituting trial would not have been "an efficient use of the Board's time and resources." *Id.* at 11. There are no such concerns here, as the claims challenged by the Dooley-von Ilberg 1999 ground are substantially identical in number and largely overlap with the claims challenged by the other asserted grounds. As to the Dooley-von Ilberg 1999 ground, Petitioner has shown a reasonable likelihood of prevailing on all claims challenged, as explained in detail below.

C. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve 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 person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner submits that a person of ordinary skill in the relevant art "would have had the equivalent of a Master of Science degree in audiology or a related discipline and two or three years' experience designing, developing, programming, evaluating, or fitting acoustic, electric or electric-acoustic stimulation systems for diagnostic and rehabilitative use in patients' auditory systems." Pet. 19.

Patent Owner argues that Petitioner fails to explain how it arrived at this definition of the level of ordinary skill in the art. Prelim. Resp. 4. Nevertheless, Patent Owner indicates that it does not dispute this definition except to note that a person of ordinary skill in the relevant art "may have a Bachelor of Science degree in a range of fields including audiology, biology, physiology, physics, or an engineering discipline, along with two or three years of experience, while additional education might compensate for a deficiency in experience, and vice-versa." *Id.* at 4–5.

We find, based on our review of the record before us, that Petitioner's stated level of ordinary skill in the art is reasonable because it is consistent with the evidence at this stage of the proceeding, including the asserted prior art and, for the purposes of this Decision only, we preliminarily adopt Petitioner's definition. During trial, Patent Owner should make clear whether it disputes Petitioner's proposal and if so, on what basis. In addition, both parties should address whether our adoption of either parties' proposals would alter the outcome of any of the issues in this case.

D. Claim Construction

"In an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b). That standard "includ[es] construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*; *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should

be considered in the context of the intrinsic evidence. *See Phillips*, 415 F.3d at 1317–19.

Petitioner asserts that the Specification of the '747 patent defines the term "electric-acoustic processor." Pet. 20 (citing Ex. 1001, 10:65–67, 11:1–7). Patent Owner argues that Petitioner does not actually provide a proposed construction for this term, and the quoted passages from the '747 patent refer to an "example embodiment" and, thus, cannot be characterized as a definition. Prelim. Resp. 5 (citing Pet. 20; Ex. 1001, 10:65–67, 11:1–7). Patent Owner also argues that the meaning of the term is apparent from its plain language. *Id.* at 5–6.

We agree with Patent Owner that it is not necessary to construe "electric-acoustic processor" at this stage of the proceeding. To the extent the parties dispute the interpretation of the phrase "configured to generate or apply" recited in claim 1 (*see* Prelim. Reply 1–4; Prelim. Sur-reply 1–3), we address these arguments in our analysis of the Anderson anticipation ground. *See infra* § III.E.3. Furthermore, in view of our analysis below, we do not discern a need to expressly construe any other claim term for purposes of this Decision. *See, e.g.*, *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding claim terms need only be construed "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)).

E. Asserted Anticipation by Anderson

Petitioner contends claims 1 and 3–7 are anticipated by Anderson. Pet. 21–34. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 19–24.

1. Principles of Law

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. Inc., v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Moreover, "[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements 'arranged as in the claim.'" *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Whether a reference anticipates is assessed from the perspective of an ordinarily skilled artisan. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003) ("[T]he dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference's] teaching that every claim element was disclosed in that single reference.").

2. Overview of Anderson

Anderson relates to hearing aids, particularly "a hearing aid having an earpiece housing worn in or at the ear and a remote processor unit (RPU) worn by or located near the user that wirelessly receives signals from and transmits signals to the earpiece." Ex. 1003, 1:6–10. Figure 1 of Anderson is reproduced below.

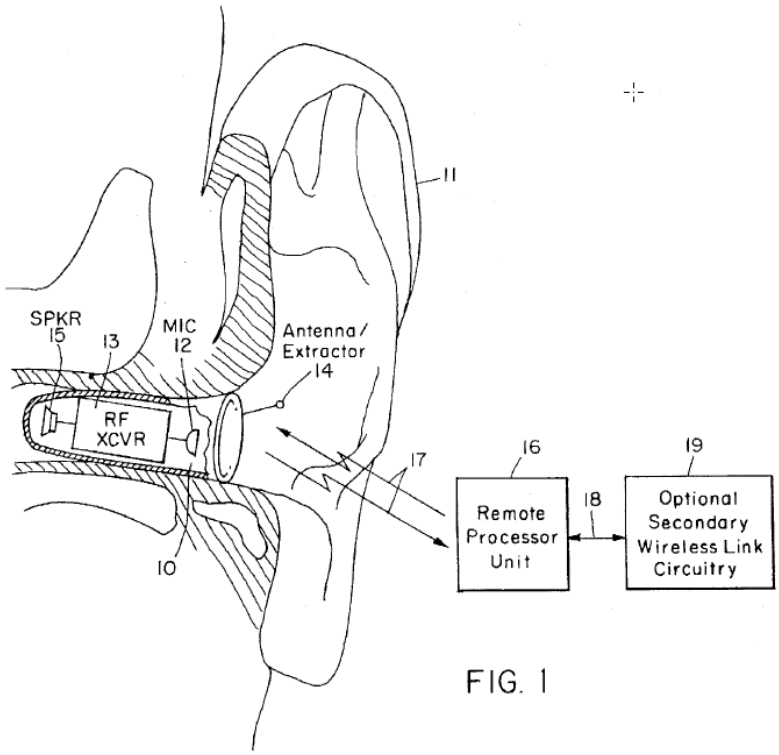

FIG. 1

Figure 1 shows earpiece 10 worn in ear 11. *Id.* at 3:53–55. Earpiece 10 comprises microphone 12, RF transceiver 13 (which includes antenna/extractor 14), and speaker 15. *Id.* at 3:58–60. The earpiece communicates with RPU 16 via two-way RF link 17. *Id.* at 4:1–3.

Anderson discloses another embodiment in which features of the hearing aid with a remote processor are implemented in a cochlear implant system. *Id.* at 27:25–29. This embodiment is depicted in Figure 10, which is reproduced below.

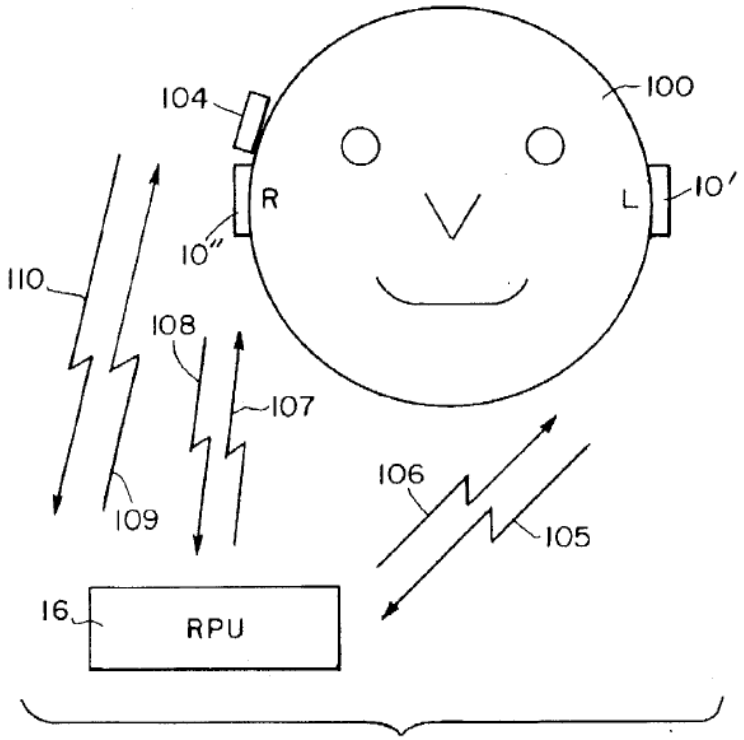

FIG. 10

Figure 10 shows details of a wireless cochlear implant system. *Id.* at 3:44–45. User 100 is equipped with left hearing aid earpiece 10' and right hearing aid earpiece 10", RPU 16, and implant electrode driver unit 104. *Id.* at 27:41–44. Driver unit 104 includes circuitry for driving cochlear implant electrodes. *Id.* at 27:50–52. Audio signals from the earpiece microphones are converted by RPU 16 to a single audio output signal that is processed further. *Id.* at 28:42–54. The resulting signal is then processed to create appropriate signals to drive the electrodes of the cochlear implant. *Id.* at 28:54–58.

3. Independent Claim 1

Petitioner provides analysis purporting to show where each limitation recited in independent claim 1 is disclosed by Anderson. Pet. 21–30. In particular, Petitioner asserts that Anderson discloses using both an acoustic

stimulation hearing device and an electric stimulation hearing device, such as a cochlear implant. *Id.* at 21 (citing Ex. 1003, 27:4–29; Figs. 1, 2, 10, 11). Regarding the claim 1 recitation that

> the hearing aid and the cochlear implant speech processor, or the acoustic and electric elements of the electric-acoustic processor, are situated in the same ear and are configured to generate or apply both acoustic stimulation signals to the acoustic sensing organs of the ear and electric stimulation signals to the auditory nerve of the same ear,

Petitioner argues that Anderson discloses wireless hearing aid earpieces 10' and 10" and implant electrode driver unit 104, which is disposed in the same ear as earpiece 10". *Id.* at 28–29 (quoting Ex. 1003, 27:41–67, citing Ex. 1003, Fig. 10).

Patent Owner argues that Anderson discloses providing either acoustic stimulation or electric stimulation, but not both. Prelim. Resp. 20–21. Specifically, Patent Owner argues that cochlear implant embodiment shown in Figure 10 of Anderson does not disclose that the earpieces provide any acoustic stimulation because Anderson explicitly discloses that the earpiece speakers serve no purpose in the cochlear implant embodiment. *Id.* at 21 (citing Ex. 1003, 27:52–55). According to Patent Owner, "Anderson explains that cochlear implant users are 'profoundly deaf,' and thus Anderson's system does not even attempt to provide acoustic stimulation to cochlear implant patients." *Id.* at 23 (citing Ex. 1003, 27:33–61).

Petitioner responds by arguing that "how an apparatus is intended to be used does not differentiate a claimed apparatus from a prior art apparatus when the prior art apparatus teaches all of the structural limitations of the claim." Prelim. Reply 1 (citing *In re Schreiber*, 128 F.3d 1473 (Fed. Cir. 1997)). Next, Petitioner argues that claim 1 does not recite applying

acoustic stimulation to the same ear that receives electric stimulation. *Id.* at 2. According to Petitioner, claim 1 recites only that the acoustic and electric elements are "configured to generate or apply" acoustic stimulation signals and electric stimulation signals, respectively, to the same ear and does not require that the signals actually stimulate the ear. *Id.* at 2–3. Based on this distinction, Petitioner contends that Anderson discloses structure configured to generate or apply acoustic and electric signals to the same ear. *Id.* at 2 (citing Ex. 1003, 5:18–21, 28:50–67).

Anderson discloses an embodiment in which earpiece 10 includes speaker 15 that generates acoustic waves (i.e., acoustic signals) to stimulate the user's ear. Ex. 1003, 3:58–60, 4:33–35, 5:18–21, Fig. 1. Anderson also discloses a different embodiment that combines earpieces 10' and 10" with a cochlear implant system. *Id.* at 27:25–45, Fig. 10. In this embodiment, "[s]peakers 15 in the left and right earpieces serve no purpose in the cochlear implant application, as the user is profoundly deaf, and may be disconnected to conserve power." *Id.* at 27:52–55.

In view of this disclosure, we are not persuaded on the current record that Anderson discloses a hearing aid or acoustic element that is "configured to generate or apply" acoustic stimulation signals to the same ear that receives electric stimulation signals from Anderson's cochlear implant. We disagree that the language "configured to," as used in claim 1, reflects a mere intended use or merely means "capable of." *See, e.g., In re Giannelli*, 739 F.3d 1375, 1379–80 (Fed. Cir. 2014) (distinguishing terms such as "made to," "designed to," and "configured to" from terms such as "capable of" and "suitable for"). Here, the Specification of the '747 patent describes that hearing aids 50, 52 output amplified sound to a patient's ear and

electric-acoustic processor system 70 is configured to deliver acoustic stimulation to the auditory sensory organs of the ear. Ex. 1001, 10:46–48, 13:35–39. And the computer software provides acoustic stimulation to the hearing aid or the electric-acoustic processor as part of the method for modifying the parameters of a patient's hearing devices. *Id.* at 14:28–33. Thus, the Specification makes clear that "configured to generate or apply . . . acoustic stimulation signals to the acoustic sensing organs of the ear" means more than simply being *capable of* applying acoustic stimulation signals. *See Giannelli*, 739 F.3d at 1380 (finding the written description makes clear that the claim term "adapted to" has a narrower meaning than "capable of"). As such, Petitioner's reliance on *In re Schreiber* is misplaced.

Rather, Anderson is unequivocal that the speakers *serve no purpose* in the cochlear implant embodiment because the user is profoundly deaf. In other words, the speakers are not used because they would have no impact on the user's hearing. We, thus, agree with Patent Owner that Anderson's earpiece 10" is not configured to apply acoustic stimulation signals to the user's ear; this ear receives only electric stimulation signals from the cochlear implant.

We also are not persuaded by Petitioner's argument that Anderson's disclosure that the speakers *may* be disconnected to conserve power means that the speakers are connected in some applications. *See* Prelim. Reply 3. Because the cochlear implant embodiment is used for profoundly deaf patients only, it is clear that Anderson does not contemplate using the earpiece speakers to stimulate the user's ears with acoustic signals in the cochlear implant embodiment, even if the speakers are "connected." *See* Ex. 1003, 27:30–33, 27:52–55. Furthermore, we agree with Patent Owner that

Petitioner does not support its assertion that the speakers will provide acoustic stimulation as long as they are connected. *See* Prelim. Sur-reply 3.

In view of the above, we are not persuaded on the current record that Petitioner has met its burden to show a reasonable likelihood that claim 1 is anticipated by Anderson.

4. Dependent Claims 3–7

Claims 3–7 depend from claim 1 and, thus, contain all the limitations of claim 1. Petitioner's challenges to dependent claims 3–7 do not overcome the deficiencies of Anderson with respect to claim 1. Pet. 30–34. Accordingly, for the same reasons discussed above in connection with claim 1, we are not persuaded that Petitioner has met its burden to show a reasonable likelihood that claims 3–7 are anticipated by Anderson.

F. Asserted Anticipation by Leysieffer

Petitioner contends claims 1, 2, 4, and 5 are anticipated by Leysieffer. Pet. 35–44. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 25–28.

1. Overview of Leysieffer

Leysieffer "relates to an at least partially implantable system for rehabilitation of a hearing disorder." Ex. 1004 ¶ 2. Figure 1 of Leysieffer is reproduced below.

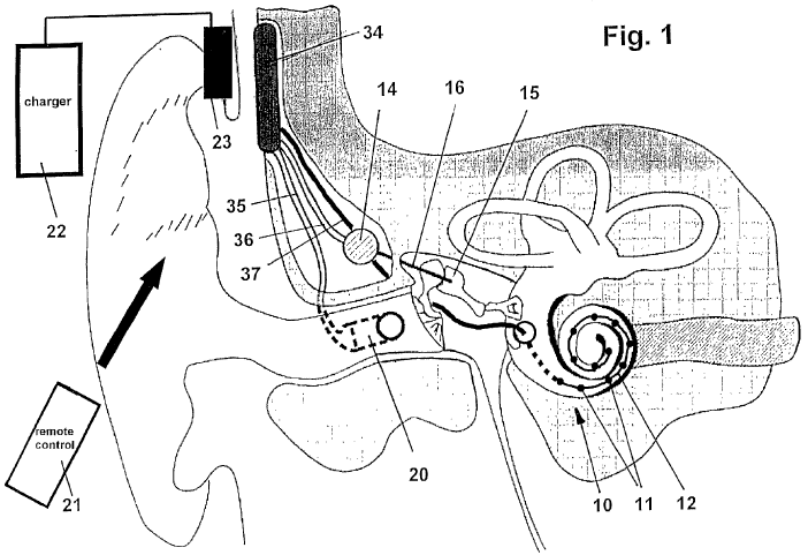

Figure 1 shows the structure of a totally implantable hearing system. *Id.* ¶ 71. The system includes intracochlear array 10, having electrodes 11, and electromechanical transducer 14 coupled to incus 15 via coupling rod 16. *Id.* ¶¶ 71, 73. The system further includes microphone 20 and electronic module 34. *Id.* ¶¶ 79, 82.

As shown in Figure 2, electronic module 34 includes digital signal processor 42, which processes signals produced by microphones 20 and outputs signals that are supplied to electrodes 11 and transducer 14. *Id.* ¶¶ 85–86. Electronic module 34 also includes microcontroller 44 to implement "software-based algorithms for a dual stimulation of the damaged hearing . . . that is as optimum as possible." *Id.* ¶ 88. Digital signal processor 42 and/or microcontroller 44 can store audiological adaptation parameters that can be altered externally. *Id.* Microcontroller 44 can communicate wirelessly with programming system 48 via data bus 45 and telemetry system 46. *Id.* ¶ 89.

2. Independent Claim 1

Petitioner provides analysis purporting to show where each limitation recited in independent claim 1 is disclosed by Leysieffer. Pet. 35–42. This analysis includes asserting that "Leysieffer includes an 'electromechanical transducer' coupled to a bone in the middle ear (acoustic element) and an 'electrical intracochlear array 10 having several stimulation electrodes 11' (electric element)." *Id.* at 35 (citing Ex. 1004 ¶¶ 5, 71). More specifically, regarding the claim 1 recitation of a hearing aid or acoustic element configured to generate or apply acoustic stimulation signals, Petitioner argues "the acoustic element of Leysieffer illustrated in Figure 1 includes an electromechanical transducer 14." *Id.* at 38 (citing Ex. 1004, Fig. 1). Petitioner then argues that "Leysieffer also discloses the use of an acoustic element with an acoustic output of sound waves directed into the ear canal." *Id.* at 39–40 (citing Ex. 1004 ¶ 14). According to Petitioner, one of ordinary skill in the art would understand from these disclosures "that an acoustic element that generates or applies sound waves directed into the ear canal, such as a conventional hearing aid, also would be used in the apparatus of Leysieffer." *Id.* at 40 (citing Ex. 1002 ¶ 81).

We do not find this argument persuasive for the following reasons. First, Petitioner's assertion that Leysieffer teaches using both an electromechanical transducer and a conventional hearing aid is incorrect. Although Leysieffer does disclose using an electromechanical transducer, the description of a conventional hearing aid in paragraph 14 cited by Petitioner discusses *replacing* an amplified acoustic signal in front of the eardrum with an amplified mechanical stimulus of the middle or inner ear and, thus, does not suggest using both acoustic and mechanical stimuli. Ex.

1004 ¶ 14. Leysieffer also describes that stimulating the middle or inner ear with mechanical or hydromechanical stimulation, instead of the amplified acoustic signal of a conventional hearing aid, offers better rehabilitation than conventional hearing aids. *Id.* ¶ 6.

Second, Petitioner points only to the Sladen Declaration to support its assertion (Pet. 40 (citing Ex. 1002 ¶ 81)), but Dr. Sladen's testimony on this point merely repeats the Petition's assertion and is a conclusory statement not supported sufficiently by objective evidence or analysis. Ex. 1002 ¶ 81. For this reason, we do not credit this testimony. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."); *see also Nobel Biocare Services AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1382 (Fed. Cir. 2018) (explaining that the Board can reject arguments based on expert testimony that lacks specificity or detail).

Last, we agree with Patent Owner that Petitioner "fails to identify any disclosure in Leysieffer that indicates (or even suggests) that the Leysieffer's system 'generate[s] or appl[ies] acoustic stimulation signals' in the form of 'sound waves' that are 'directed into the ear canal,'" as required by claim 1. *See* Prelim. Resp. 26.

Claim 1 also recites a computer configured to "modify parameters of at least one of (a) a hearing aid and a cochlear implant speech processor and (b) the acoustic and electric elements of an electric-acoustic processor." Petitioner asserts that

> Leysieffer further explains that "operating parameters, i.e., patient-specific data, for example, audiological adaption data, or variable implant system parameters (for example, a variable in a software program for control of battery recharging), can be

> transmitted transcutaneously, i.e. wirelessly through the closed skin, to the implant and can thus be changed."

Pet. 36–37 (quoting Ex. 1004 ¶ 32). Petitioner, however, does not explain adequately, on the current record, how this disclosure satisfies the limitation of modifying parameters for both the hearing aid/acoustic element and the cochlear implant/electric element.

In view of the above, we find on the current record that Petitioner has not met its burden to show a reasonable likelihood that claim 1 is anticipated by Leysieffer.

3. Dependent Claims 2, 4, and 5

Claims 2, 4, and 5 depend from claim 1 and, thus, contain all the limitations of claim 1. Petitioner's challenges to dependent claims 2, 4, and 5 do not overcome the deficiencies of Leysieffer with respect to claim 1. Pet. 42–44. Accordingly, for the same reasons discussed above in connection with claim 1, we are not persuaded that Petitioner has met its burden to show a reasonable likelihood that claims 2, 4, and 5 are anticipated by Leysieffer.

G. Asserted Anticipation by Dooley

Petitioner contends claims 1, 2, and 4–7 are anticipated by Dooley. Pet. 45–55. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 37–40.

1. Overview of Dooley

Dooley discloses a bimodal aid that provides information through a cochlear implant aid in one ear and a speech processing acoustic hearing aid in the other ear of a patient. Ex. 1005, 7:26–28. This arrangement is depicted in Figure 1 of Dooley, which is reproduced below.

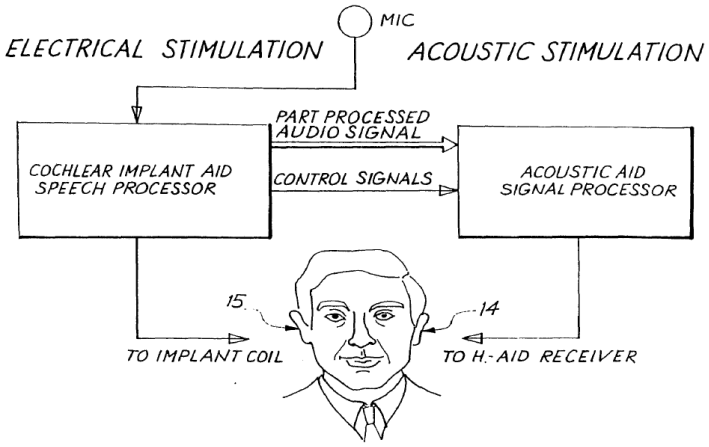

FIG. 1

Figure 1 is a schematic representation of one embodiment of a bimodal aid. *Id.* at 6:2–4. Figure 2 is reproduced below.

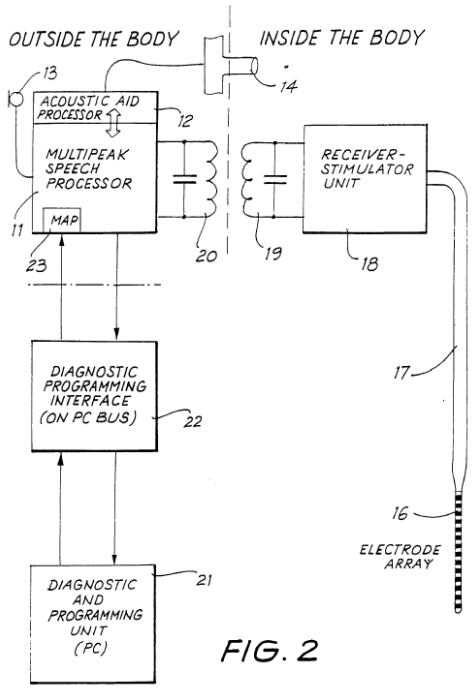

FIG. 2

Figure 2 shows the main functional components of the bimodal aid. *Id.* at 6:5–7. The components include speech processor 11 connected to acoustic aid processor 12, microphone 13, acoustic hearing aid 14, and implant aid 15 (not referenced in Figure 2). *Id.* at 10:25–11:1. The implant aid includes electrode array 16 connected by harness 17 to receiver

stimulator 18, which is in radio communication with speech processor 11 via coils 19 and 20. *Id.* at 11:1–4.

The system includes diagnostic and programming unit 21 that is implemented as a program running on a personal computer. *Id.* at 11:5–9. "The diagnostic and programming unit 21 is utilised in a clinical situation to test for and control device parameters of operation for the speech processor 11 and/or acoustic aid processor 12 which optimise hearing performance for a patient according to defined criteria." *Id.* at 11:11–16.

2. Independent Claim 1

Petitioner provides analysis purporting to show where each limitation recited in independent claim 1 is disclosed by Dooley. Pet. 45–50. The final limitation of claim 1 recites:

> wherein the hearing aid and the cochlear implant speech processor, or the acoustic and electric elements of the electric-acoustic processor, are situated in the same ear and are configured to generate or apply both acoustic stimulation signals to the acoustic sensing organs of the ear and electric stimulation signals to the auditory nerve of the same ear.

Ex. 1001, 15:51–57. Petitioner concedes that Dooley does not disclose an ipsilateral arrangement, but asserts instead that the final limitation of claim 1 is entitled to no patentable weight and does not distinguish the claim from Dooley. Pet. 48–50.

To support this assertion, Petitioner argues "[t]here is no indication in the '747 patent that the structure or operation of the cochlear implant system or the hearing aid is different in any way when placed in the same ear or in different ears," and one of ordinary skill in the art "would have understood the structure and/or operation of the cochlear implant system and/or the

hearing aid to remain the same, regardless of whether the apparatus was used in an ipsilateral arrangement or in a contralateral arrangement." *Id.* at 49 (citing Ex. 1002 ¶ 107).

This argument is not persuasive because, even if one of ordinary skill in the art would have understood the operation and structure of the '747 patent's devices would be the same for ipsilateral and contralateral arrangements, this understanding does not suggest that the final limitation of claim 1 is not entitled to patentable weight. The mere fact that the '747 patent discloses the possibility of both ipsilateral and contralateral arrangements does not mean a claim limitation reciting an ipsilateral arrangement is not entitled to patentable weight.

Petitioner also argues that whether the devices of the '747 patent are in an ipsilateral or contralateral arrangement relates to the manner in which the apparatus is intended to be used and not to its structure. *Id.* Petitioner then asserts that, "[a]ccording to well-settled precedent, a recitation which states how an apparatus is intended to be employed does not differentiate a claimed apparatus from a prior art apparatus, if the prior art apparatus teaches all of the structural limitations of the claim." *Id.* at 49–50 (citing *In re Schreiber*, 128 F.3d 1473 (Fed. Cir. 1997); *Ex parte Ling*, 2010 WL 4219754 (BPAI Oct. 22, 2010)).

We do not find this argument persuasive either. Rather, we agree with Patent Owner that "the claim limitations requiring an ipsilateral arrangement do not simply specify an 'intended use,' . . . but rather specify quintessential structural elements of the claimed system, including ***which*** components are used and ***where*** they are located." Prelim. Resp. 39. Claim 1 recites a *system* in which two of its *elements* (either the hearing aid and the cochlear

implant speech processor or the acoustic and electric elements of the electric-acoustic processor) are located in a particular manner, which does not constitute a mere "intended use" of the elements.

In addition, Petitioner misapplies *Schreiber*. The *Schreiber* decision holds "that the recitation of a new intended use for an old product does not make a claim to that old product patentable." *Schreiber*, 128 F.3d at 1477. As such, *Schreiber* does not stand for the proposition that *any* statement of intended use in a patent claim is not entitled to patentable weight. Also, Petitioner's analysis conflates the "product" or "apparatus" (i.e., the claimed system in this case) with the elements of the system. That is, Petitioner's analysis relies on the assertion that the hearing aid/acoustic element and the cochlear implant/electric element, rather than the claimed system as a whole, are old structure being used in a new way. Unlike the claim at issue in *Schreiber*, claim 1 does not recite merely a new intended use for a known system. For these reasons, we disagree that the final limitation of claim 1 is not entitled to patentable weight.

Accordingly, we find on the current record that Petitioner has not met its burden to show a reasonable likelihood that claim 1 is anticipated by Dooley.

3. Dependent Claims 2 and 4–7

Claims 2 and 4–7 depend from claim 1 and, thus, contain all the limitations of claim 1. Petitioner's challenges to dependent claims 2 and 4–7 do not overcome the deficiencies of Dooley with respect to claim 1. Pet. 50–55. Accordingly, for the same reasons discussed above in connection with claim 1, we are not persuaded that Petitioner has met its burden to show a reasonable likelihood that claims 2 and 4–7 are anticipated by Dooley.

H. Asserted Obviousness Based on Dooley and von Ilberg 1999

Petitioner contends claims 1, 2, and 4–7 are obvious over Dooley and von Ilberg 1999. Pet. 55–57. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 40–45.

1. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made 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 ordinary skill in the art; and (4) when in evidence, objective indicia (also called secondary considerations) of non-obviousness, such as commercial success, long-felt but unsolved needs, and failure of others. *Graham*, 383 U.S. at 17–18. We analyze this ground based on obviousness in accordance with the above-stated principles.[6]

2. Overview of von Ilberg 1999

Von Ilberg 1999 is a paper describing a study of a patient having a history of hearing loss and fitted with bilateral hearing aids and a cochlear implant in the right ear. Ex. 1006, 336. Testing was performed with the

[6] We address the level of ordinary skill in the art in § III.A., *supra*. The record does not include any evidence of objective indicia of non-obviousness at this point in the proceeding.

hearing aid alone, the cochlear implant alone, and a combination of both devices. *Id.* at 337. The results of the testing demonstrate that combined electric-acoustic stimulation (EAS) "clearly increases the quality and score of speech perception above values which could be achieved with acoustic or electric stimulation alone." *Id.* at 340.

3. Independent Claim 1

Petitioner again argues that Dooley discloses all of the limitations of claim 1. Pet. 55; *see also id.* at 45–50 (providing analysis purporting to show where each limitation recited in independent claim 1 is disclosed by Dooley). Petitioner also argues, however, that if it is determined that the ipsilateral arrangement recited in claim 1 is not an intended use, "von Ilberg 1999 discloses that speech tests were performed with 'the HA alone, CI alone and the combination of both (HA + CI) in the implanted ear (without contralateral HA).'"[7] *Id.* at 55 (citing Ex. 1006, 337). Petitioner argues further that von Ilberg 1999 discloses "that 'a substantial improvement of [the patients'] hearing can be expected' using an ipsilateral configuration," and "fitting of parameters for both the hearing aid and cochlear implant." *Id.* (citing Ex. 1006, 337, 340).

Next, Petitioner argues that one of ordinary skill in the art would have combined von Ilberg with Dooley in the relevant time period. *Id.* at 56 (citing Ex. 1002 ¶ 125). Petitioner also argues that because von Ilberg 1999 teaches that an ipsilateral configuration of hearing devices may improve performance, one of ordinary skill in the art "would have been motivated to

[7] "CI" refers to a cochlear implant, and "HA" refers to a conventional or digital hearing aid. Ex. 1006, 334.

use an ipsilateral configuration and would have combined von Ilberg 1999 with Dooley, particularly with regard to fitting systems and methodology." *Id.* at 56–57 (citing Ex. 1002 ¶ 127).

Patent Owner argues that Petitioner provides no explanation for its assertion that one of ordinary skill in the art would have combined von Ilberg 1999 with Dooley to use an ipsilateral configuration, and Dr. Sladen's testimony merely parrots the Petition's conclusory assertion. Prelim. Resp. 41 (citing Pet. 57).

Petitioner bases its assertion that it would have been obvious to one of ordinary skill in the art to combine Dooley and von Ilberg 1999 in the manner proposed on von Ilberg 1999's teaching that an ipsilateral configuration of hearing devices may improve performance. *See* Pet. 56–57. Von Ilberg 1999 discloses testing a combination of a hearing aid and a cochlear implant in the same ear of a patient, and that substantial improvement in hearing can be expected with simultaneous monaural electric-acoustic stimulation. Ex. 1006, 337, 340. Also, von Ilberg 1999 discloses the testing "results demonstrate that combined EAS clearly increases the quality and score of speech perception above values which could be achieved with acoustic or electric stimulation alone." *Id.* at 340. Given these disclosures that an ipsilateral arrangement improves hearing performance, we agree that one of ordinary skill in the art would have been led to combine Dooley and von Ilberg 1999 in the manner proposed.

Furthermore, although the Sladen Declaration largely repeats Petitioner's argument, Dr. Sladen also testifies that one of ordinary skill in the art would have been motivated to make the proposed combination "to improve performance outcomes without fearing loss of residual hearing."

Ex. 1002 ¶ 127. This uncontroverted testimony lends support to Petitioner's assertion. *See* Pet. 56–57.

Accordingly, at this stage of the proceeding, we do not find Patent Owner's argument persuasive.

Next, Patent Owner argues that the proposed combination lacks basis because Dooley is directed explicitly to a *contralateral* system, not an *ipsilateral* system. Prelim. Resp. 42 (citing Ex. 1005, 2:22–3:2, 7:24–28, 8:11–23, 10:14–24, 40 (claim 1)). According to Patent Owner, this disclosure in Dooley "was not merely an arbitrary design choice, but a reflection of decades of experience that [persons of ordinary skill in the art] had with cochlear implants." *Id.*

We do not find this argument persuasive at this stage of the proceeding. Although we agree that Dooley discloses only a contralateral arrangement, Patent Owner does not persuade us—nor even appear to assert—that Dooley teaches away from ipsilateral arrangements. At most, Dooley expresses a preference for contralateral arrangements but does not criticize or disparage ipsilateral arrangements. As such, Dooley does not teach away from the proposed combination. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) ("A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed. *In re Fulton,* 391 F.3d 1195, 1201 (Fed. Cir. 2004).").

Patent Owner also contends that persons of ordinary skill in the art "understood and expected that implanting a cochlear prosthesis and its accompanying electrode array and long-term stimulation using the implant

would cause trauma and damage the patient's acoustic sensing organs, resulting in loss of residual hearing." Prelim. Resp. 42 (citing Pet. 56; Ex. 1006, 334).

We disagree that this alleged understanding by ordinarily skilled artisans would discourage the proposed combination. Von Ilberg 1999 discloses that "[t]he application of [cochlear implants] is limited by the fact that a usable residual hearing capacity in the majority of the patients is destroyed by intracochlear application of the electrode array." Ex. 1006, 334. But von Ilberg 1999 also discloses "[e]lectric stimulation of the auditory system by means of cochlear implants (CIs) is a well-accepted technique for deaf patients but also for adults and children with some residual hearing." *Id.* And of course, as noted above, von Ilberg 1999 discloses that combined electric-acoustic stimulation can produce substantial improvement in hearing. *Id.* at 340. Therefore, although it may have been known in the art that cochlear implants had some limitations, we are not persuaded that one of ordinary skill in the art would not have considered using cochlear implants.

In addition, Patent Owner argues that von Ilberg 1999 is equivocal with respect to the ipsilateral use of a hearing aid and cochlear implant and reports only early results from a single patient. Prelim. Resp. 42 (citing Ex. 1006, *passim*). Patent Owner notes that von Ilberg 1999 states "[a]ctually an intracochlear insertion of electrodes still means a certain risk for the residual cochlear function of the patient," "[f]urther research is therefore needed to insure [sic] the preservation of usable hearing remnants," and the article's findings are the "first steps towards the possibility of a combined EAS." *Id.* at 42–43 (citing Ex. 1006, 340). According to Patent Owner, these

disclosures represent "a far cry from a reasonable expectation of success required to support a conclusion of obviousness." *Id.* at 43 (citing *OSI Pharms., LLC v. Apotex, Inc.*, 939 F.3d 1375, 1384–85 (Fed. Cir. 2019)).

We do not find this argument persuasive at this stage of the proceeding. The qualifying statements from von Ilberg 1999 noted by Patent Owner are not fatal to a reasonable expectation of success because von Ilberg 1999 unequivocally discloses that its "results demonstrate that combined EAS *clearly* increases the quality and score of speech perception above values which could be achieved with acoustic or electric stimulation alone." Ex. 1006, 340 (emphasis added). On this record, we find that the teachings of von Ilberg 1999 support a reasonable expectation of success despite the qualifying statements. *See, e.g.*, *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009) ("[O]bviousness does not require absolute predictability of success . . . *all that is required is a reasonable expectation of success*.").

Next, Patent Owner argues that:

> [Petitioner] itself spent years trying to develop an electric-acoustic-stimulation ("EAS") device that it first announced in November 2005, more than a year and a half after [the '747 patent's] priority date. Ex. 2002 at 210. [Petitioner] then spent the next decade further developing the device and conducting studies needed to demonstrate its safety and efficacy, receiving FDA approval only in September 2016. Ex. 2001 at 2; Ex. 2003 at 1, 15–16. At that point—more than a decade after [the '747 patent's] priority date—[Petitioner] touted that "EAS represents the ***latest innovation*** in hearing implants" and described it as a "***major advancement***." Ex. 2001 at 2.

Prelim. Resp. 43. None of this evidence, however, detracts from the fact that von Ilberg 1999 discloses that an ipsilateral configuration can

substantially improve hearing. *See* Ex. 1006, 340. Thus, we do not find this argument persuasive at this stage of the proceeding.

Last, Patent Owner argues that Petitioner does not point to anything in von Ilberg 1999 that addresses the '747 patent's disclosed need for a system for programming or fitting a hearing device configured to deliver electric stimulation and a hearing device configured to deliver acoustic stimulation, which need Patent Owner contends is reflected in the challenged claims. Prelim. Resp. 43–45.

Petitioner, however, relies on Dooley, not von Ilberg 1999, as disclosing programming or fitting the acoustic and electric elements. Specifically, Petitioner asserts that Dooley discloses that cochlear implant aid 15 and acoustic aid 14 both are controlled by speech processor 11. Pet. 46 (citing Ex. 1005, 7:28–8:2). Petitioner also asserts that Dooley's "computer . . . (diagnostic and programming unit 21) is 'utilised in a clinical situation to test for and control device parameters of operation for the speech processor 11 and/or acoustic aid processor 12 which optimise hearing performance for a patient according to defined criteria,'" such that "unit 21 communicates with and modifies parameters of at least the acoustic and electric elements of an electric-acoustic processor." *Id.* (citing Ex. 1005, 11:11–16). Based on the current record, we determine that Petitioner has adequately established that Dooley discloses these features, which assertion Patent Owner does not appear to dispute.

For the above reasons, we determine that, at this stage of the proceeding, Petitioner has made a sufficient showing that it would have been obvious to one of ordinary skill in the art to combine Dooley and von Ilberg 1999 in the manner proposed to use an ipsilateral configuration.

Patent Owner does not offer any arguments specifically addressing the remaining limitations of claim 1 or Petitioner's assertions that Dooley discloses these limitations. *See* Prelim. Resp. 40–45. We have reviewed these aspects of Petitioner's contentions, and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that the proposed combination of Dooley and von Ilberg 1999 satisfies each limitation and that one of ordinary skill in the art would have had reason to combine the references in the manner proposed. *See* Pet. 55–57.

For the reasons above, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail with respect to the contention that claim 1 would have been obvious over the combination of Dooley and von Ilberg 1999.

4. Dependent Claims 2 and 4–7

Because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '747 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See SAS*, 138 S. Ct. at 1354, 1359–60; TPG 64. Further, Patent Owner offers no particular arguments with respect to claims 2 and 4–7 for us to consider at this stage of the proceeding. Therefore, it is not necessary for us to assess every claim challenged by Petitioner. Nevertheless, we note that Petitioner provides reasonable and detailed explanations indicating where in the references the limitations of claims 2 and 4–7 are disclosed by Dooley. Pet. 57; *see also id.* at 50–55 (providing analysis purporting to show where each limitation recited in claims 2 and 4–7 is disclosed by Dooley). We determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in its assertion that

claims 2 and 4–7 are unpatentable over the proposed combination of Dooley and von Ilberg 1999.

I. Asserted Obviousness Based on Leysieffer and Harrison

Petitioner contends claims 1, 2, 4, and 5 are obvious over Leysieffer and Harrison. Pet. 57–61. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 28–33.

1. Overview of Harrison

Harrison relates to "a hybrid hearing aid system that combines a cochlear stimulator and a hearing aid." Ex. 1007, 1:5–7. Figure 2 of Harrison is reproduced below.

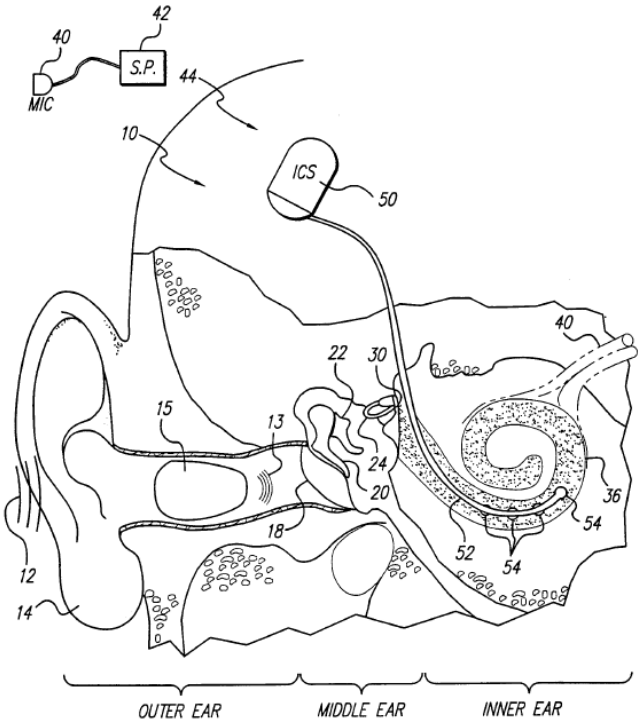

FIG. 2

Figure 2 shows the manner in which a conventional in-the-ear hearing aid is used to supplement an implantable cochlear stimulator. *Id.* at 5:12–14.

The system of Figure 2 includes implantable cochlear stimulator 50 having electrode array 52 with a plurality of electrodes 54. *Id.* at 7:6–8. Implantable cochlear stimulator 50 is coupled to external microphone 40, whose signals are amplified and processed by speech processor 42. *Id.* at 7:10–14.

The system also includes hearing aid 15. *Id.* at 8:16–18. Hearing aid 15, which may be a conventional device, receives acoustic waves 12, amplifies the waves, and presents amplified acoustic waves 13 to tympanic membrane 18. *Id.* at 8:18–20.

2. Independent Claim 1

Petitioner again argues that Leysieffer discloses all of the limitations of claim 1. Pet. 57; *see also id.* at 35–42 (providing analysis purporting to show where each limitation recited in independent claim 1 is disclosed by Leysieffer). Petitioner also argues, however, that if it is determined that Leysieffer does not explicitly disclose

> that the hearing aid and the acoustic elements of the electric-acoustic processor are devices that are configured to generate or apply acoustic stimulation signals to the acoustic sensing organs of the ear, the acoustic stimulation being sound waves directed into the ear canal, acoustic hearing aids were well known in the art, . . . it would have been obvious to have substituted such a hearing aid for the hearing aid shown in Leysieffer.

Id. at 57 (citing Ex. 1002 ¶ 129). Petitioner also argues that Harrison discloses a hybrid system that provides electric stimulation of the cochlea and includes hearing aid 15 for presenting acoustic waves to the tympanic membrane. *Id.* at 58 (citing Ex. 1007, 5:30–6:3, 8:16–20, Fig. 2).

Petitioner then argues that one of ordinary skill in the art would have understood that Leysieffer's electromechanical transducer and Harrison's

hearing aid are interchangeable and would have combined Leysieffer with Harrison because both teach an ipsilateral arrangement. *Id.* at 59–60 (citing Ex. 1002 ¶¶ 134–135). According to Petitioner, "[t]he substitution of the acoustic hearing aid of Harrison into the ipsilateral system of Leysieffer would have been simply the substitution of one known and conventional element for another known and conventional element." *Id.* at 60.

Patent Owner argues that Harrison does not disclose modifying the parameters of the hearing aid component, let alone modifying the parameters of both the hearing aid and cochlear implant components of the system. Prelim. Resp. 30. Thus, Patent Owner argues that even assuming it would have been obvious to combine Leysieffer and Harrison as proposed (which Patent Owner disputes), the combination would fail to disclose modifying parameters of acoustic and electric stimulation devices as required by claim 1. *Id.*

The section of the Petition explaining the combination of Leysieffer and Harrison does not expressly address the claim 1 limitation of "modify[ing] parameters of at least one of (a) a hearing aid and a cochlear implant speech processor and (b) the acoustic and electric elements of an electric-acoustic processor." *See* Pet. 57–61. Thus, the Petition must rely on Leysieffer for teaching this limitation. *See id.* at 57 ("Leysieffer discloses all of the limitations of claim 1," with the possible exception of "the limitations in Paragraph Two.").

However, for the reasons discussed above (*see supra* § III.F.2), we are not persuaded on the current record that Leysieffer discloses modifying parameters for both the hearing aid/acoustic element and the cochlear implant/electric element. Accordingly, we are not persuaded on the current

record that Petitioner has met its burden to show a reasonable likelihood that claim 1 is unpatentable over the combination of Leysieffer and Harrison.

J. Asserted Obviousness Based on Leysieffer, Harrison, and von Ilberg '604

Petitioner contends claim 8 is obvious over Leysieffer and von Ilberg '604 or Leysieffer, Harrison, and von Ilberg '604. Pet. 61–64. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 33–36. Claim 8 depends from claim 1 and, thus, contains all the limitations of claim 1. Therefore, for each of these grounds, Petitioner relies in large part on the same assertions presented in the challenge of independent claim 1 based on either Leysieffer alone or the combination of Leysieffer and Harrison in support of its contentions that claim 8 is obvious. Pet. 61–64.

Petitioner relies on von Ilberg '604 for disclosing a device having a cochlear implant and an acoustic hearing device in the same ear and having multiple stimulation channels. *Id.* at 63 (citing Ex. 1008, 2:61–62, 5:4–5, 5:19–25, Figs. 3(a)–(c)). Thus, von Ilberg '604 does not overcome the deficiencies of Leysieffer and Harrison with respect to claim 1.

Accordingly, each of these additional grounds suffers from the same deficiencies noted above (*see supra* §§ III.F.2, III.I.2) with respect to Leysieffer alone and the proposed combination of Leysieffer and Harrison. Therefore, for the same reasons discussed above, we determine that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that claim 8 is unpatentable.

IV. CONCLUSION

After considering the evidence and arguments presented in the Petition and Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of success with respect to at least one of the challenged claims. Accordingly, an *inter partes* review of all of the claims and all of the grounds presented in the Petition is hereby instituted. *See SAS*, 138 S. Ct. at 1354, 1359–60; TPG 64.

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claims or any underlying factual or legal issues. The final determination will be based on the record as developed during the *inter partes* review.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–8 of the '747 patent on all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '747 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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