

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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K/S HIMPP

Petitioner,

v.

III Holdings 4, LLC

Patent Owner.

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Case IPR2017-00781  
Patent No. 8,654,999

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**PATENT OWNER'S NOTICE OF APPEAL**

Notice is hereby given, pursuant to 35 U.S.C. §§ 141(c), 142, and 319, and 37 C.F.R. §§ 90.2(a) and 90.3(a), that Patent Owner III Holdings 4, LLC hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered on July 23, 2018 (Paper 26) in IPR2017-00781 (Exhibit A), and from all underlying orders, decisions, rulings and opinions that are adverse to Patent Owner, including, without limitation, those within the Decision on Institution of Inter Partes Review, entered on July 27, 2017 (Paper 8).

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner further indicates that the issues on appeal include, but are not limited to, the Board's claim constructions, the Board's determination that claims 1-5 and 16 are unpatentable as obvious over Fichtl, Mangold, and Bisgaard, the Board's determination that claim 18 is unpatentable as obvious over Fichtl, Mangold, Bisgaard, and Sacha, the Board's determination that claims 6-9 and 17 are unpatentable as obvious over Fichtl, Sacha, Mangold, and DE961, the Board's determination that claim 19 is unpatentable as obvious over Fichtl, Sacha, Mangold, Bisgaard, and DE961, the Board's overruling of Patent Owner's objections to Exhibit 1009 and denial of Patent Owner's motion to exclude Exhibit 1009, any finding or determination supporting or relating to those issues, as well as all other issues decided adversely to Patent Owner in any orders, decisions, rulings, and opinions.

This Notice of Appeal is timely pursuant to 37 C.F.R. § 90.3, having been duly filed within 63 days after the Final Written Decision.

Simultaneous with this submission, a copy of the Notice of Appeal is being filed with the Patent Trial and Appeal Board. In addition, a copy of this Notice of Appeal, along with the required docketing fees, is being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit. In addition, pursuant to Fed. Cir. R. 15(a)(1), one paper copy of the notice is also being sent to the Clerk of the Federal Circuit.

If there is any fee due in connection with the filing of this Notice of Appeal, please charge the fee to Deposit Account No. 50-1662.

Respectfully submitted,

Date: September 21, 2018

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## **CERTIFICATE OF SERVICE**

The undersigned hereby certifies that in addition to being filed electronically with the U.S. Patent and Trademark Office, pursuant to 37 C.F.R. §§ 42.6(e)(4) and 90.2, the foregoing PATENT OWNER'S NOTICE OF APPEAL and all accompanying documents, were filed by Express Mail on September 21, 2018, with the Director of the United States Patent and Trademark Office, at the following address:

Director of the U.S. Patent and Trademark Office  
c/o Office of the General Counsel  
P.O. Box 1450  
Alexandria, VA 22313-1450

The undersigned certifies that a copy of the foregoing Patent Owner's Notice of Appeal and accompanying documents, along with the required docket fee, was filed on September 21, 2018, with the United States Court of Appeals for the Federal Circuit through the Court's CM/ECF filing system and the filing fee is being paid electronically using pay.gov, and that a copy of the foregoing Patent Owner's Notice of Appeal and accompanying documents were filed with the Patent Trial and Appeal Board electronically on September 21, 2018, pursuant to 37 C.F.R. 42.6(b), and that the foregoing Notice of Appeal and accompanying documents were served upon the Petitioner pursuant to 37 C.F.R. 42.6(e)(1) via

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# **EXHIBIT A**

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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K/S HIMPP,  
Petitioner,

v.

III HOLDINGS 4, LLC  
Patent Owner.

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Case IPR2017-00781  
Patent 8,654,999 B2

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Before SALLY C. MEDLEY, DAVID C. MCKONE, and  
KIMBERLY MCGRAW, *Administrative Patent Judges*.

MCKONE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

## I. INTRODUCTION

### A. Background

K/S HIMPP (“Petitioner”) filed a Petition (Paper 3, “Pet.”) to institute an *inter partes* review of claims 1–9 and 16–19 of U.S. Patent No. 8,654,999 B2 (Ex. 1001, “the ’999 patent”). Petitioner indicates that GN Hearing A/S (formerly GN Resound A/S), GN Store Nord A/S, IntriCon Corporation, Sivantos GmbH, Sivantos Inc., Sonova Holding AG, Sonova AG (formerly Phonak AG), Starkey Laboratories, Inc. (aka Starkey Hearing Technologies), Widex A/S, and William Demant Holding A/S are also real parties in interest. Pet. 1. III Holdings 4, LLC (“Patent Owner”), filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314, in our Institution Decision (Paper 8, “Dec.”), we instituted this proceeding as to claims 1–9 and 16–19.

Patent Owner filed a Patent Owner’s Response (Paper 12, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner’s Response (Paper 15, “Reply”).

Patent Owner also filed a Motion to Exclude Evidence (Paper 17, “Mot. to Exclude”), Petitioner filed an Opposition to the Motion to Exclude (Paper 21, “Opp. to Mot. to Exclude”), and Patent Owner filed a Reply to the Opposition to the Motion to Exclude (Paper 22, “Reply Mot. to Exclude”).



Petitioner relies on the Declaration of Les Atlas, Ph.D. (Ex. 1008, “Atlas Decl.”).<sup>1</sup> Patent Owner relies on the Declaration of Clyde Brown (Ex. 2003, “Brown Decl.”).

An oral argument was held on May 1, 2018 (Paper 25, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–9 and 16–19. Based on the record before us, Petitioner has proved, by a preponderance of the evidence, that claims 1–9 and 16–19 are unpatentable.

*B. Related Matters*

Petitioner challenges claims 10–15 and 20 of the ’999 patent in *K/S HIMPP v. III Holdings 4, LLC*, Case IPR2017-00782 (PTAB). Pet. 2.

*C. Asserted Prior Art References*

Petitioner relies on the following prior art:

|                       |                    |  |
|-----------------------|--------------------|--|
| Ex. 1003 (“Fichtl”)   | US 8,787,603 B2    | July 22, 2014<br>(filed June 19, 2012) |
| Ex. 1004 (“Sacha”)    | US 2003/0215105 A1 | Nov. 20, 2003                          |
| Ex. 1006 (“Bisgaard”) | US 6,741,712 B2    | May 25, 2004                           |
| Ex. 1007 (“Mangold”)  | US 4,972,487       | Nov. 20, 1990                          |

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<sup>1</sup> Patent Owner argues that we should give Dr. Atlas’s Declaration no weight because it merely repeats the arguments in the Petition. PO Resp. 37–39. In the cases of both Dr. Atlas’s testimony and that of Mr. Brown (whose Declaration suffers from essentially the same defect Patent Owner ascribes to Dr. Atlas’s testimony) we evaluate the extent to which expert testimony discloses the underlying facts or data on which it is based as a factor in determining the weight to give that testimony. *See* 37 C.F.R. § 42.65(a). We are not persuaded to discount either expert’s testimony entirely.

Ex. 1009 (“DE961”)      DE 195 42 961 C1      May 15, 1997<sup>2</sup>

*D. The Asserted Grounds*

We instituted on the following grounds of unpatentability (Dec. 38):

| References                                  | Basis    | Claim(s) Challenged |
|---|----------|---------------------|
| Fichtl, Mangold, and Bisgaard               | § 103(a) | 1–5 and 16          |
| Fichtl, Mangold, Bisgaard, and Sacha        | § 103(a) | 18                  |
| Fichtl, Sacha, Mangold, and DE961           | § 103(a) | 6–9 and 17          |
| Fichtl, Mangold, Bisgaard, Sacha, and DE961 | § 103(a) | 19                  |

*E. The '999 Patent*

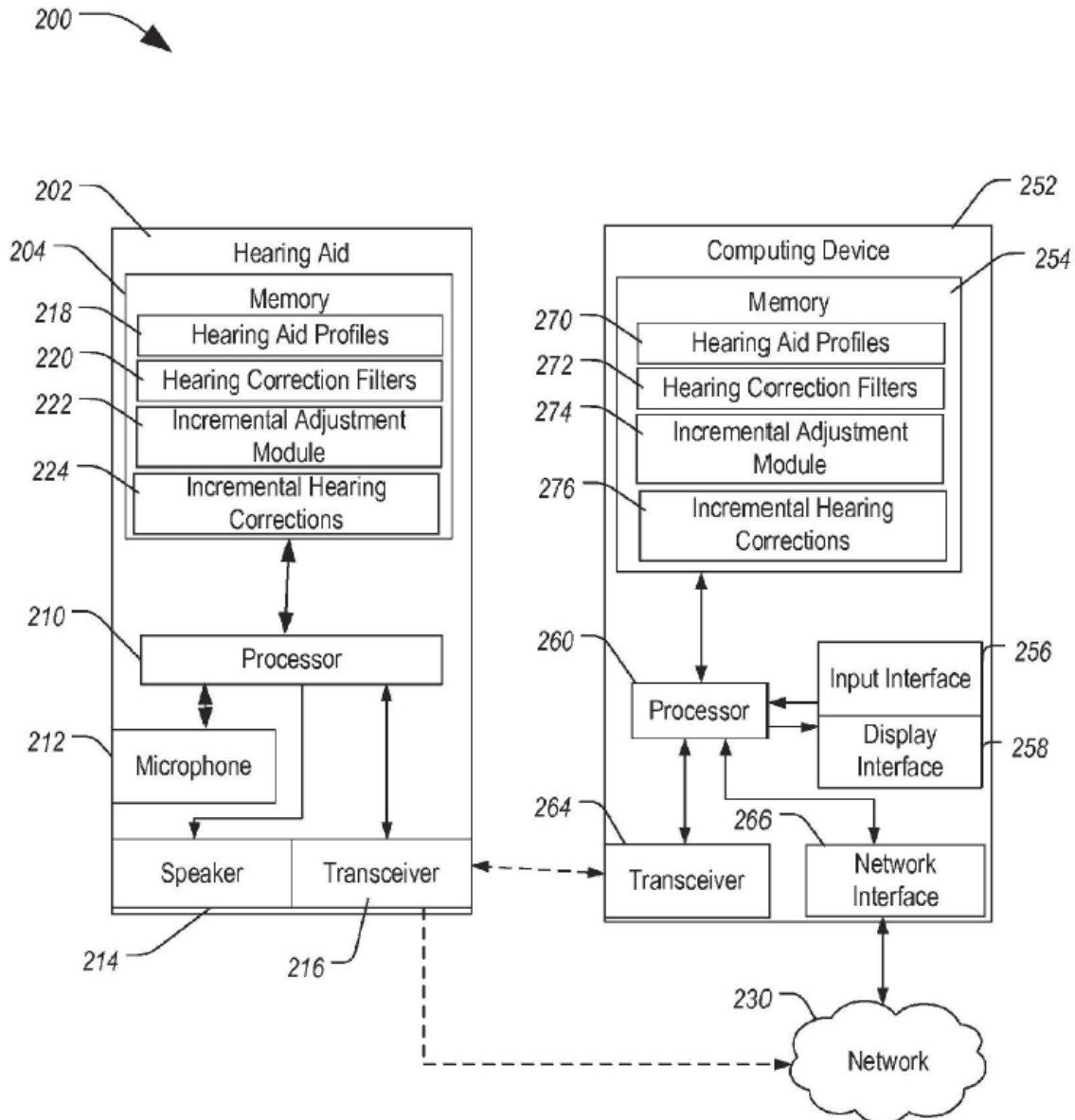
The '999 patent describes a hearing aid system. By way of background, the '999 patent explains that an individual's hearing loss can vary across audio frequencies and that an audiologist typically measures the individual's hearing capacities in various environments and tunes or calibrates a hearing aid for the individual to compensate for that individual's particular hearing loss. Ex. 1001, 1:46–55. The patent further notes that the

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<sup>2</sup> Petitioner relies on a verified English translation of a German publication. We cite to the English translation. Exhibit 1009 is a subject of Patent Owner's Motion to Exclude. Paper 17, 1–4. In particular, Patent Owner argues that the translator's verification is not compliant with 37 C.F.R. § 42.63. In response, Petitioner submitted Exhibit 1015, the same translation with a new verification compliant with Rule 42.63. We discuss the Motion to Exclude in detail below. To be consistent with the citations in the parties' papers, we cite to Exhibit 1009 when referring to DE961, although cites to Exhibit 1015 would be the same.

abrupt transition to a hearing aid can be traumatic or distressful for the individual. *Id.* at 1:58–67. To address this, the '999 patent describes a hearing aid system in which, “rather than abruptly implementing the hearing correction for the user immediately, the hearing aid progressively applies incremental adjustments to progressively or gradually adjust the user’s experience from an uncompensated hearing level to a fully compensated hearing level.” *Id.* at 2:30–34.

Figure 2, reproduced below, illustrates an embodiment of the hearing aid system of the '999 patent:



**FIG. 2**

Figure 2 is a block diagram of a hearing aid system. *Id.* at 2:10–12. Hearing aid 202 and computing device 252 (e.g., a personal digital assistant (PDA) or smart phone) communicate using transceivers 216 and 264, through a wired

or wireless channel (e.g., a Bluetooth channel or network 230). *Id.* at 5:49–61, 6:3–16. Hearing aid 202 includes memory 204 and processor 210 to store and process hearing aid profiles 218 and hearing correction filters 220. *Id.* at 5:61–6:2. Computing device 252 includes memory 254 and processor 260 for storing and processing hearing aid profiles 270 and hearing correction filters 272. *Id.* at 6:29–35.

Processor 210 of hearing aid 202 shapes acoustic signals according to a “hearing aid profile,” which the patent explains is “a collection of acoustic configuration settings,” and provides the shaped acoustic signals to a speaker or bone conduction element to correct a user’s hearing loss. *Id.* at 2:40–46. In one embodiment, processor 210 applies a “collection of hearing correction filters” that “include a series of hearing correction adjustments designed to be applied in a sequence over a period of time to provide incremental corrections for the user’s hearing loss.” *Id.* at 3:2–7. For example, “a first hearing correction filter attenuates the hearing aid profile by a pre-determined amount” and “[e]ach . . . subsequent hearing correction filter in the sequence increases the correction provided by (decreases the attenuation applied to) the hearing aid profile to some degree, until the sequence is complete and the hearing aid profile is fully applied to provide the desired hearing correction for the user.” *Id.* at 3:7–15. The processor can provide an alert to the user when the user’s hearing is at the desired level and the adjustment process is complete. *Id.* at 10:55–59. For example, “the alert may be an audible alert reproduced through a speaker of hearing aid” or “may be sent to the computing device for display on the display interface.” *Id.* at 10:59–62.

In one embodiment, processor 210 of hearing aid 202 selectively applies a hearing correction filter 220 to selected hearing aid profile 218 to provide hearing correction for a period of time before advancing to a next incremental hearing correction filter 220 in a sequence. *Id.* at 6:42–52. In another embodiment, hearing aid 202 receives a trigger from computing device 252 through the communication channel and selects a filter from hearing correction filters 222 for application to a selected hearing aid profile 218. *Id.* at 7:9–16. In some instances, hearing aid 202 can signal computing device 252 to retrieve an incremental hearing correction filter 276 from memory 254. *Id.* at 9:62–65.

Claims 1 and 6 are the only independent claims at issue in this proceeding. Claim 1, reproduced below, is illustrative of the invention:

1. A hearing aid comprising:
  - a microphone to convert sound into electrical signals;
  - a speaker to output audible sound;
  - a processor; and
  - a memory to store instructions, which when executed by the processor, cause the processor to:
    - receive a selection of a hearing aid profile from a plurality of hearing aid profiles, the selected hearing aid profile configured to modulate the electrical signals to a level to compensate for a hearing impairment of a user;
    - apply a first one of a sequence of incremental hearing correction filters to the modulated electrical signals to produce a modulated output signal to reduce the amplitude of the modulated electrical signals produced by the selected hearing aid profile to a first level that is less than a level to compensate for the hearing impairment of the user;

select a second one of the sequence of incremental hearing correction filters in response to receiving a trigger, the second one being designated to follow the first one in the sequence of incremental hearing correction filters and to reduce the amplitude of the modulated electrical signals produced by the selected hearing aid profile to a second level that is greater than the first level and less than the level to compensate for the hearing impairment of the user; and

cause the speaker to output an alert when a final one of the sequence of incremental hearing correction filters is being applied, the final one being the last hearing correction filter of the sequence of incremental hearing correction filters.

## II. ANALYSIS

### A. *Claim Construction*

We interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016). In applying a broadest reasonable construction, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

#### 1. *“hearing correction filter”*

In the Decision on Institution, we preliminarily construed “hearing correction filter” to mean “a filter that is applied by a processor within a

hearing aid to a hearing aid profile to reduce the level of correction provided to the user by application of the hearing aid profile.” Dec. 11. The parties’ primary dispute was whether an individual hearing correction filter itself must include a collection of filters, as Patent Owner advocates. *Id.* at 9–10. We rejected Patent Owner’s argument based on the preliminary record. *Id.* at 10–11. In its Response, Patent Owner asks us to revisit our construction and rule that a hearing correction filter requires a collection of filters. PO Resp. 14.

The ’999 patent describes “hearing correction filter” as follows:

As used herein, the term “hearing correction filter” refers to a collection of filters for hearing aid 202, which are applied by processor 210 within hearing aid 202 to a hearing aid profile to reduce the level of correction provided to the user by application of the hearing aid profile. The collection of hearing correction filters may include a series of hearing correction adjustments designed to be applied in a sequence over a period of time to provide incremental corrections for the user’s hearing loss to ease the user’s transition from uncompensated to corrected hearing.

Ex. 1001, 2:65–3:7. Patent Owner argues that the first sentence in this passage provides a clear definition that “hearing correction filter,” singular means a collection of filters, plural. PO Resp. 14.

“To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning. It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must ‘clearly express an intent’ to redefine the term.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366



(Fed. Cir. 2002) and *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008)). As a starting point, the Federal Circuit has “repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’” *Convolve, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313, 1321 (Fed. Cir. 2016) (quoting *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000)). According to the Federal Circuit, “[t]he exceptions to this rule are ‘extremely limited: a patentee must ‘evince [ ] a clear intent’ to limit ‘a’ or ‘an’ to ‘one.’”” *Id.* (quoting *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342 (Fed. Cir. 2008)). By the same reasoning, we look for a clear intent to limit “a” or “an” to more than one. Thus, we start with the premise that the language “a first one of a sequence of incremental hearing correction filters,” as recited in claim 1 and “a first hearing correction filter,” as recited in claim 6, identify one or more filters, and determine whether the specification evinces a clear intent to redefine these phrases to mean more than one filter.

The claim language supports our preliminary construction by reciting a hearing correction filter as a member of a collection of filters rather than itself including a collection of filters. For example, claim 1 recites “apply a first one of a sequence of incremental hearing correction filters” and “select a second one of the sequence of incremental hearing correction filters.” In these recitations, a collection of incremental hearing correction filters is recited as a set of individual filters (“first one,” “second one”) that are applied in a sequence. In contrast, claim 2, which depends from and limits claim 1, recites “wherein each of the incremental hearing correction filters

comprises a collection of acoustic configuration settings configured to modulate the electrical signal . . . .” To the extent that multiple acoustic configuration settings are modulated by multiple separate filters, claim 2’s express recitation of a hearing correction filter comprising multiple acoustic configuration settings suggests that a hearing correction filter, in claim 1, could include only one acoustic configuration setting, and, therefore, could be a single filter. Similar to claim 1, claim 6 recites “a first hearing correction filter” and “a second hearing correction filter,” implying individual members of a collection, rather than an individual filter that includes a collection of filters.

The specification also supports our preliminary construction. In the Decision on Institution, we recognized that the ’999 patent’s statement that “the term ‘hearing correction filter’ refers to a collection of filters” suggests that a single hearing correction filter actually is a collection of filters. Dec. 9 (quoting Ex. 1001, 2:65–66). Nevertheless, consistent with the claim language discussed above, we explained that the patent’s use of the term in context indicates that a hearing correction filter can be a single filter that is a member of a collection. *Id.* Specifically, the patent explains that “[t]he collection of hearing correction filters may include a series of hearing correction adjustments designed to be applied in a sequence over a period of time.” *Id.* at 3:2–5. This informs how the ’999 patent intends “collection of filters” to be understood. Here, the collection of hearing correction filters is a “series” of adjustments applied “in a sequence over a period of time,” not all at once. The patent then expands on this explanation of a collection of filters:

In such an instance, a first hearing correction filter attenuates the hearing aid profile by a pre-determined amount, limiting the adjustment provided by hearing aid 202. Each of subsequent hearing correction filter in the sequence increases the correction provided by (decreases the attenuation applied to) the hearing aid profile to some degree, until the sequence is complete and the hearing aid profile is fully applied to provide the desired hearing correction for the user.

Ex. 1001, 3:7–15. Here, the patent describes individual hearing correction filters that are part of a collection and are individually applied in sequence.

Patent Owner contends that these passages “merely describe[] how a larger collection contains smaller collections.” PO Resp. 16. Mr. Brown repeats this argument in his testimony without further elaboration, and states that they do not impact the definition of hearing correction filter. Ex. 2003 ¶ 31. Patent Owner also cites to Dr. Atlas’s cross-examination testimony that it would not be unusual to refer to a filter that includes multiple filters. PO Resp. 16 (citing Ex. 2005, 134:10–14 (“Q. In the world of audio devices in general, there would be nothing unusual about saying a filter comprises multiple other filters, is there? A. No, there wouldn’t be.”)). We disagree with Patent Owner’s reading of these passages and do not give substantial weight to Mr. Brown’s testimony. As explained above, the specification describes a collection of individual filters that are applied in a sequence, not a collection of collections of filters applied in a sequence. As to Dr. Atlas’s cross-examination testimony, even if it is acceptable to say that a filter contains multiple filters, the specification does not suggest that it must be understood this way. Ex. 1001, 3:2–15.

Patent Owner next argues (PO Resp. 16–17) that additional description in the specification supports its construction, namely:

Further, it should be understood that the filter or correction used to achieve the correction lines and ultimately the hearing aid profile is composed of a plurality of coefficients, parameters, or other settings that are applied by a processor of the hearing aid to alter various characteristics of the sounds to modulate them to compensate for the user's hearing impairment.

Ex. 1001, 5:42–48. As we noted in the Decision on Institution, this description on its face describes a single filter that is composed of multiple coefficients or parameters. Dec. 10. It does not state that a filter is comprised of multiple filters, each such filter corresponding to one of the coefficients or parameters. Patent Owner appears to disagree, arguing that “[t]o the extent that passage provides any context to how ‘hearing correction filter’ is used in the specification, it supports the express definition in the specification,” and otherwise provides no additional context. PO Resp. 16–17. In support, Patent Owner cites to Mr. Brown, who testifies that “[t]his passage merely explains how a correction line is achieved.” Ex. 2003 ¶ 32.

Patent Owner attempted to clarify its position at the oral argument, contending that “a single filter would only be able to achieve a correction of a single frequency band” while “a collection of hearing correction filters would be able to achieve the correction for multiple frequencies.”

Tr. 29:16–19.<sup>3</sup> Patent Owner, however, does not cite to persuasive evidence to support this argument. We find that this passage (Ex. 1001, 5:42–48) is consistent with either multiple filters, each adjusting a single characteristic,

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<sup>3</sup> Petitioner contended at the oral argument that adjustments to multiple coefficients or parameters could be implemented with a filter comprising multiple filters, but that the specification also describes implementing it with a single filter with multiple coefficients or parameters. Tr. 12:21–14:12.

or a single filter with multiple coefficients for adjusting multiple characteristics.

Patent Owner also disagrees that claim 2 supports our preliminary construction. As noted above, claim 2 depends from claim 1 and adds “wherein each of the incremental hearing correction filters comprises a collection of acoustic configuration settings configured to modulate the electronic signal to a level that is within range between an uncompensated hearing level of the user and the level to compensate for the hearing impairment of the user.” Patent Owner argues that claim 2 supports its proposed construction because it shows that each filter includes a collection, not a single filter. PO Resp. 17. Mr. Brown repeats this argument in his testimony. Ex. 2003 ¶ 33. At the oral argument, Patent Owner clarified its argument, contending that all claim 2 adds is a lower boundary (“uncompensated hearing level of the user”) for the modulated electronic signal and otherwise confirms that a hearing correction filter comprises multiple filters. Tr. 35:12–36:4.

Claim 2 does not recite that each filter comprises a collection of filters; rather, it recites that each filter comprises a collection of acoustic configuration settings. Patent Owner does not explain persuasively why this requires multiple filters for each acoustic configuration setting rather than a single filter with multiple acoustic configuration settings. PO Resp. 17. As with the passage from the specification discussed above (Ex. 1001, 5:42–48), claim 2’s language is consistent with either view.

In a similar argument, Patent Owner contends that a hearing correction filter “impacts different frequencies of the signal in different ways.” PO Resp. 27. According to Mr. Brown, “applying a hearing

correction filter to a hearing aid profile for adjusting a signal provides a varying effect on different frequencies of the signal.” Ex. 2003 ¶ 49. The specification explains, “in the illustrated example [of Figure 1], the hearing sensitivity lines 110, 112, 114, 116, and 118 appear to indicate that the incremental hearing corrections adjust selected frequencies to the desired hearing level while providing less of an enhancement to other frequencies.” Ex. 1001, 4:35–39. According to Mr. Brown, a skilled artisan “would recognize that this means a collection of frequency adjustments not a single setting.” Ex. 2003 ¶ 49. However, the specification describes this as an “illustrated example,” not a limitation on the invention. Ex. 1001, 4:35.

Indeed, as Petitioner points out (Reply 7), directly below this passage, the specification makes clear that “it should be understood that other incremental hearing corrections could be used. For example, in one particular instance, the incremental hearing correction could dampen or otherwise apply filters to the selected hearing aid profile to incrementally adjust the hearing correction across the entire range of frequencies substantially evenly.” Ex. 1001, 4:39–44. The specification continues: “In another instance, the incremental hearing correction could adjust selected frequencies by different amounts, providing a non-uniform hearing correction.” *Id.* at 4:44–47. Here, the specification clearly distinguishes between uniform and non-uniform hearing corrections.

At the oral argument, Patent Owner argued “the ’999 patent discloses that the hearing correction filters can dampen an entire range of frequencies substantially evenly. Not entirely evenly. And dampening substantially evenly is done with a collection of filters.” Tr. 39:5–8. Patent Owner points to no evidence that the language “substantially evenly” was intended to draw

a distinction between one filter adjusting all frequencies perfectly evenly and a collection of filters adjusting all frequencies substantially evenly. Rather, the two passages together (Ex. 1001, 4:35–47) are consistent with the claims, for example claim 1 reciting one or more filters (e.g., one filter adjusting all frequencies substantially evenly) and claim 2 reciting a filter or collection of filters that adjust selected frequencies non-uniformly. These examples from the specification also support our preliminary construction and counsel against Patent Owner’s proposed alternative.

On the complete record, based on the language of the claims, the definition in the specification when viewed in its proper context, and the remaining consistent description in the specification, we maintain our construction of “hearing correction filter,” namely, “a filter that is applied by a processor within a hearing aid to a hearing aid profile to reduce the level of correction provided to the user by application of the hearing aid profile.”

In the Petition, Petitioner argued that a hearing correction filter should not be construed to cover a filter that is applied to modulate an audio signal that already has been modulated by the hearing aid profile, arguing that such a construction would be contradicted by the embodiments and definition provided by the specification. Pet. 14–15. We declined to place such a restriction on “hearing correction filter,” as the claims themselves recite the signals to which the hearing correction filter is applied. Dec. 11–12; *see also* claim 1 (“the selected hearing aid profile configured to modulate the electrical signals to a level to compensate for a hearing impairment of a user” and “apply a first one of a sequence of incremental hearing correction filters to the modulated electrical signals to produce a modulated output signal”), claim 6 (“apply a first hearing correction filter to the selected

hearing aid profile”). Patent Owner appears to dispute this aspect of our construction. PO Resp. 17–18. Nevertheless, neither party argues that any factual dispute turns on this aspect of our construction. Thus, we need not address it further. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

## 2. “*incremental hearing correction filter*”

In light of our construction of “hearing correction filter,” above, and additional description in the specification of “incremental hearing correction” (Ex. 1001, 3:24–36), we construed “incremental hearing correction filter” to mean a hearing correction filter (as construed above) that represents an intermediate hearing adjustment to provide a modulated output signal having a level that is within a range between an uncompensated output level and the desired output level. Dec. 12–13. The parties do not raise additional disputes for this term beyond those raised for “hearing correction filter.” Accordingly, we maintain our construction of “incremental hearing correction filter” on the complete record.

### *B. Asserted Grounds of Unpatentability*

A 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.” We resolve the question of obviousness on the basis of underlying factual determinations, including: (1) the scope and content of



the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.<sup>4</sup> *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

*1. Level of Skill in the Art*

Petitioner contends that a person of ordinary skill in the art “would have been someone with a bachelor’s degree in electrical or computer engineering, or the equivalent, and at least two years of experience in audio signal processing for audiological products” and that “[g]raduate education could substitute for work experience, and additional work experience/training could substitute for formal education.” Pet. 11 (citing Ex. 1008 ¶¶ 22–28). Petitioner relies on the Atlas Declaration, which states that a skilled artisan “would have had a B.S. degree in electrical or computer engineering, or the equivalent, and at least two years of experience in hearing aid systems.” Ex. 1008 ¶ 28. Patent Owner does not propose an alternative. We adopt Petitioner’s proposed level of skill and find that it is consistent with the level of ordinary skill reflected by the prior art of record. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of skill in the art).

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<sup>4</sup> The complete record does not include allegations or evidence of objective indicia of nonobviousness.

2. *Alleged Obviousness over Fichtl, Mangold, and Bisgaard*

Petitioner contends that claims 1–5 and 16 would have been obvious over Fichtl, Mangold, and Bisgaard. Pet. 18–45. For the reasons given below, we agree.

a. *Scope and Content of the Prior Art*

(1) *Overview of Fichtl*

Fichtl describes a hearing device that implements an acclimatization algorithm. Ex. 1003, Abstract. Acclimatization is the process by which, over the course of several weeks to half a year, the intensity of a hearing device gradually is increased from an initially low intensity to a target intensity. *Id.* at 1:19–26.

Fichtl’s hearing device is depicted in Figure 1, reproduced below:

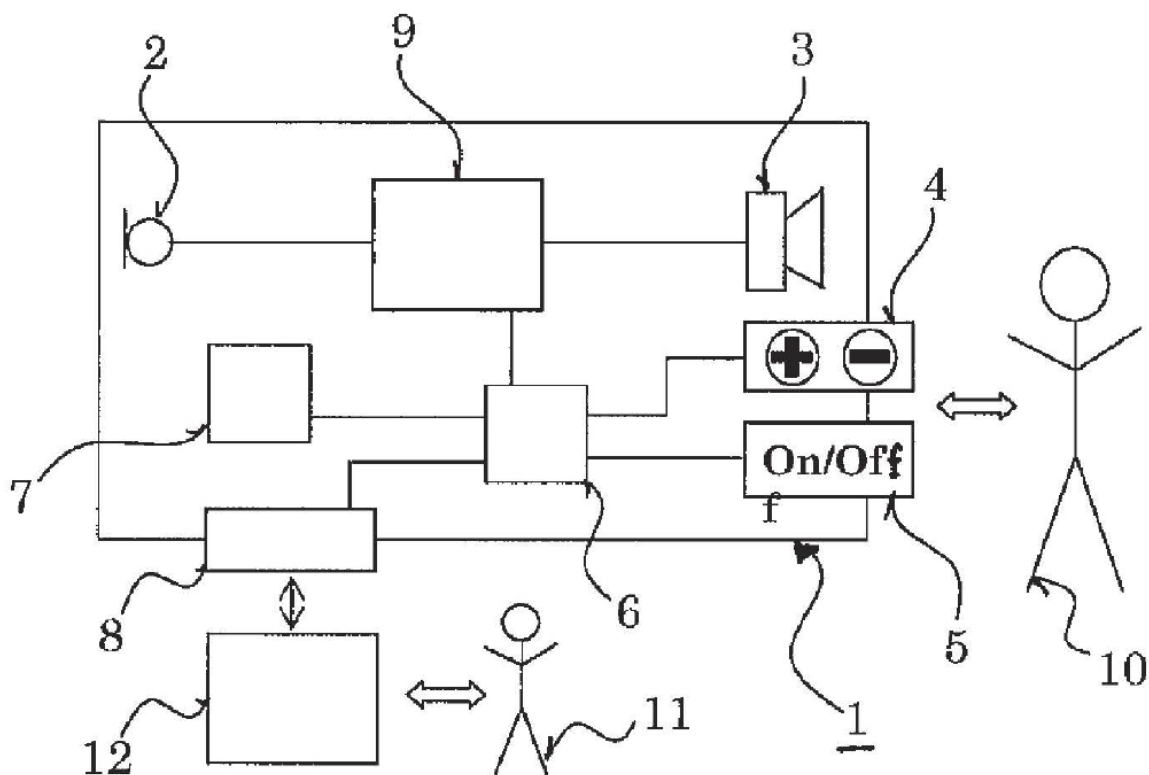


Fig. 1



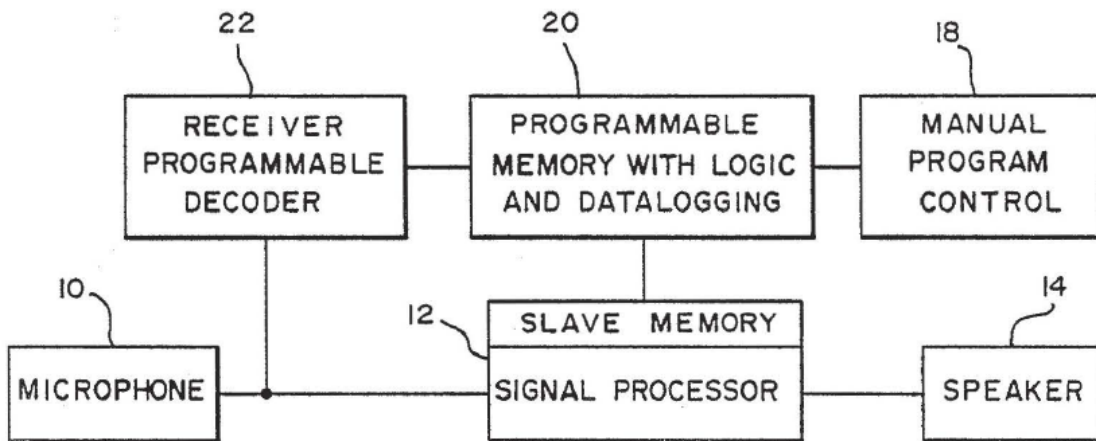
Figure 2 is a graph that depicts how an audio processing parameter (“APP”) is changed over time in a hearing aid. *Id.* at 3:3–5. Examples of APP include volume, treble, and noise cancelling. *Id.* at 3:42–47.

In the algorithm of Figure 2, at time A, an audiologist (11 in Figure 1) programs into memory 7 initial power-on value iPOV and target power-on value tPOV for the APP, for example tPOV being 10 dB higher than iPOV. *Id.* at 3:42–48. At time B, user 10 switches the hearing aid on and the APP is set to iPOV. *Id.* at 3:49–53. An intermediate value of APP, X, is increased slowly during time C. *Id.* at 3:54–57. During time D, the user selects the APP to be two steps higher than the original audio processing parameter,  $APP_{ref}$ , and X is increased faster. *Id.* at 3:58–61. During time E, the user selects the APP to be one step lower than  $APP_{ref}$ , and X is increased more slowly. *Id.* at 3:62–65.

The user switches the hearing aid off at time F and intermediate value X is stored in memory 7 as the first replacement power-on value  $rPOV_1$ . *Id.* at 3:66–4:4. The user switches the hearing aid back on at time G and the APP is set to  $rPOV_1$  and intermediate value X is increased. *Id.* at 4:5–7. At time H, intermediate value X reaches tPOV and is not changed anymore, at which time the acclimatization phase ends. *Id.* at 4:8–11. When the user switches the hearing aid off, as at time I, the value stored in memory 7, second replacement value  $rPOV_2$ , is tPOV. *Id.* at 4:12–15. According to Fichtl, “[i]t is to be noted that the increase of the intermediate value X as well as the power-on-value POV is shown exaggerated for illustrative purposes. Usually, the acclimatization phase will take few weeks up to several months and not only one and a half days as in the example.” *Id.* at 4:16–20.

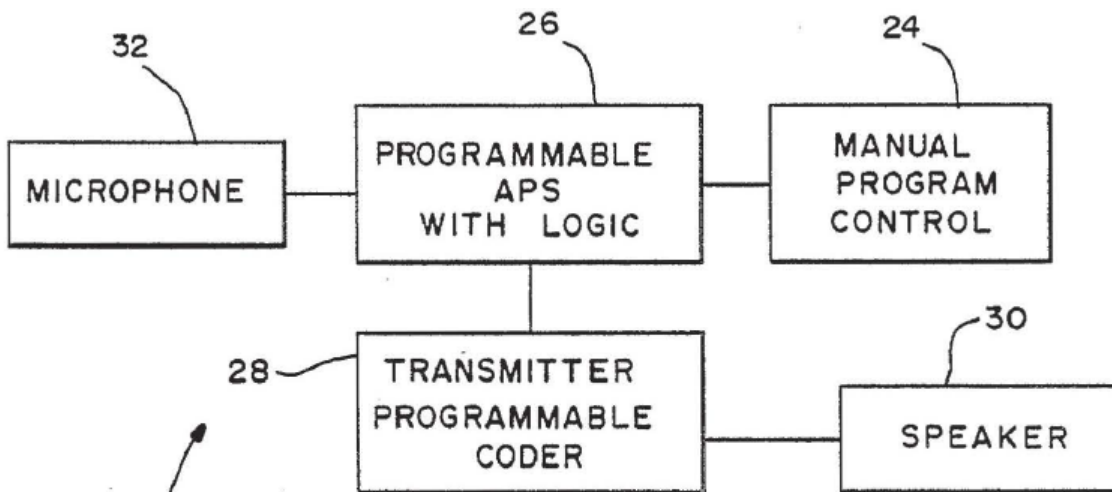
*b. Overview of Mangold*

Mangold describes an auditory prosthesis (hearing aid) with datalogging capability. Ex. 1007, Abstract. Figures 2 and 3, reproduced below, illustrate an example:



4

**FIG.—2**



6

**FIG.—3**

Figure 2 is a functional block diagram of remote-controlled programmable hearing aid 4 and Figure 3 is a functional block diagram of remote control unit 6 for use with hearing aid 4. *Id.* at 2:42–48.

Hearing aid 4 includes microphone 10, signal processor 12 with slave memory, speaker 14, and programmable memory with logic 20, which includes logic for datalogging capability. *Id.* at 3:22–29. Remote control 6 is worn on a user’s wrist or placed in a pocket. *Id.* at 3:38–40. Remote control 6 includes programmable block 26 with an automatic program selector (“APS”) to automatically select a program in response to the ambient noise level as detected by microphone 32. *Id.* at 3:49–52.

“Programs,” as used in Mangold, are “one or more of: specific settings of a limited number of parameters; selection of a processing configuration of strategy; modification of a prosthesis control program; or setting of coefficients in a prosthesis program.” *Id.* at 2:28–33. The selected program is transmitted to the hearing aid where the program is entered. *Id.* at 3:57–59.

In its datalogging capability, memory 20 of hearing aid 4 records environmentally selected events, such as selection of programs based on a current sound environment. *Id.* at 1:40–49. After a period of time, the dispenser of the hearing aid can connect to the hearing aid, read out the data stored in memory 20, and determine a new set of operating parameters for the hearing aid based on the degree to which the user has used the original programs. *Id.* at 2:3–11.

In an alternative embodiment (depicted in Figures 4 and 5), the functions of datalogging unit 20 of the hearing aid of Figure 2 are placed in

programmable APS with logic unit 26 in remote control unit 9 of Figure 5.  
*Id.* at 4:11–21.

*c. Overview of Bisgaard*

Bisgaard describes a hearing aid intended to be used in a subscription arrangement. Ex. 1006, 1:32–38. The hearing aid is programmed by an audiologist with programs and data necessary for operation and also a time limit value that can be set for a subscription period. *Id.* at 2:1–5, 6:33–41. The subscription period can correspond to a “habituation” period, during which the hearing aid undergoes a gradual transition from no compensation to full compensation for the user’s hearing loss. *Id.* at 2:48–56, 6:41–44. After the subscription period expires, the user is notified by an alarm (e.g., a series of audio signals) and the hearing aid can be deactivated. *Id.* at 2:15–22, 6:45–57.

Bisgaard identifies the hearing aid of Mangold as an example in which its invention can be used. *Id.* at 1:5–15.

*d. Differences Between the Claimed Subject Matter and the Prior Art, and Reasons to Modify or Combine*

*(1) Claims 1 and 2*

Claim 1 recites “[a] hearing aid comprising: a microphone to convert sound into electrical signals; a speaker to output audible sound; a processor; and a memory to store instructions.” We find that these structural aspects of claim 1 are taught by Fichtl’s disclosure of a hearing device (“hearing aid”) that includes microphone/input transducer 2 (the “microphone to convert sound into electrical signals”), output transducer 3 (the “speaker to output

audible sound”), controller 6 and signal processor 9 (together, the “processor”), and non-volatile memory 7 (the “memory to store instructions”). Ex. 1003, Fig. 1, 1:19–27, 3:23–34, 4:25–51, 13:31–44; Pet. 18–21. Patent Owner does not dispute that Fichtl teaches these structural aspects of claim 1.

As to instructions, executed by the processor, causing the processor to “receive a selection of a hearing aid profile from a plurality of hearing aid profiles, the selected hearing aid profile configured to modulate the electrical signals to a level to compensate for a hearing impairment of a user,” Petitioner cites a combination of Fichtl and Mangold. The specification states that “the term ‘hearing aid profile’ refers to a collection of acoustic configuration settings for a hearing aid, . . . which are used by a processor . . . to shape acoustic signals to correct for a user’s hearing loss.” Ex. 1001, 2:40–44. As shown in Figure 2 of Fichtl, reproduced above, Fichtl describes an algorithm for changing over time an APP corresponding to a user’s hearing loss. Ex. 1003, 3:35–4:15. Petitioner contends that Fichtl’s algorithm would be applied to multiple APPs, constituting a collection of acoustic configuration settings for a hearing aid, that would correspond to a “hearing aid profile,” as recited in claim 1. Pet. 22. As Petitioner notes (*id.*), Fichtl describes processing a signal “based on audio processing parameters,” that the controller is “adapted to set such parameters, for example, when the hearing device 1 is switched on or when the volume control 4 is actuated,” and that non-volatile memory 7 stores “parameters while the hearing device 1 is switched off.” Ex. 1003, 3:23–32. Based on Fichtl’s repeated references to plural parameters, we find that Fichtl



describes a system that processes multiple APPs as part of a collection of acoustic configuration settings, i.e., a hearing aid profile.

Petitioner further contends that Mangold describes programming multiple hearing aid profiles, such as those described in Fichtl, and receiving a selection of a profile from among those stored to compensate for a user's hearing impairment. Pet. 22–23 (citing Ex. 1007, 1:9–29, 2:28–33, 4:47–58). Mangold describes its programs as including “one or more of: specific settings of a limited number of parameters; selection of a processing configuration strategy; modification of a prosthesis control program; or setting of coefficients in a prosthesis program.” Ex. 1007, 2:28–33. Based on this description, we find that Mangold's stored programs are “hearing aid profiles,” as recited in claim 1, and correspond to Fichtl's collection of APPs.

Mangold describes a programmable memory that “stores a plurality of programs for controlling the signal processor 12 in operating on signals from microphone 10” and a manual program control switch “for the user of the device to select from among the several programming options stored in memory.” Ex. 1007, 3:10–15. The stored programs are “for controlling a signal processor for different processing of audio signals.” *Id.* at 1:17–19. Based on these descriptions, we find that Mangold teaches “receive a selection of a hearing aid profile from a plurality of hearing aid profiles, the selected hearing aid profile configured to modulate the electrical signals to a level to compensate for a hearing impairment of a user,” as recited in claim 1.

Petitioner argues that, in light of Mangold's teachings, it would have been obvious to store collections of APP values in Fichtl's memory 7 and for

Fichtl's controller to receive a selection from among those collections or profiles in order to better compensate for the user's hearing loss in a particular sound environment. Pet. 30–31. Petitioner points to disclosure in Fichtl identifying benefits of its acclimatization algorithm, including greater comfort and reduction in the number of visits to an audiologist. *Id.* at 32–33 (citing Ex. 1003, 1:19–34). For example, Fichtl states that “[i]n order to reduce the number of visits necessary and to make the adjustment more steady, it has been proposed to increase the intensity of hearing device automatically, a feature which is termed in this document ‘automatic acclimatization management’.” Ex. 1003, 1:30–34. We find that the benefits expressly articulated in Fichtl would have been equally applicable to the hearing aid system of Mangold. Thus, a skilled artisan would have had reasons to combine the teachings of Fichtl and Mangold. We note that Patent Owner does not contest that a skilled artisan would have had reasons to combine Fichtl and Mangold.

Petitioner cites Fichtl for instructions that cause the processor to:  
apply a first one of a sequence of incremental hearing correction filters to the modulated electrical signals to produce a modulated output signal to reduce the amplitude of the modulated electrical signals produced by the selected hearing aid profile to a first level that is less than a level to compensate for the hearing impairment of the user,

and

select a second one of the sequence of incremental hearing correction filters in response to receiving a trigger, the second one being designated to follow the first one in the sequence of incremental hearing correction filters and to reduce the amplitude of the modulated electrical signals produced by the selected hearing aid profile to a second level that is greater than

the first level and less than the level to compensate for the hearing impairment of the user,

as recited in claim 1. Petitioner contends that, because “Fichtl’s acclimatization algorithm corresponds to adjustments applied by controller 6 to the collection of APPs of processor 9 to reduce the level of correction provided to the hearing device user by application of the hearing aid profile,” the algorithm comprises a sequence of hearing correction filters. Pet. 26. Petitioner further contends that, because the Fichtl algorithm outputs intermediate APP values with reduced amplitudes relative to tPOV, the algorithm reduces the “amplitude of the modulated electrical signals produced by the selected hearing aid profile to a first level that is less than a level to compensate for the hearing impairment of the user,” as recited in claim 1. *Id.* at 27–28. According to Petitioner and Dr. Atlas, applying Fichtl’s acclimatization algorithm to modulated electrical signals output by a hearing aid profile or to the hearing aid profile itself would have been mathematically equivalent. *Id.* at 28–29; Ex. 1008 ¶¶ 123–124.

Petitioner further argues that a subsequent APP value, e.g., the second APP value rPOV<sub>1</sub> shown in Fichtl’s Figure 2, is the next in a sequence of incremental hearing correction filters, and is designated to follow the initial APP value iPOV. Pet. 30. According to Petitioner, iPOV is “a first one of a sequence of incremental hearing correction filters” and rPOV<sub>1</sub> is “a second one of the sequence of incremental hearing correction filters,” as recited in claim 1. *Id.* Petitioner argues that the second of the incremental hearing correction filters, rPOV, is designated to follow the first, iPOV. *Id.*

Patent Owner raises several arguments as to these aspects of claim 1. Patent Owner characterizes Fichtl as describing “a series of disjointed

volume adjustment events during each of which a volume of a hearing device is adjusted based on a user-provided adjustment command,” and argues that “[a]djusting a volume is not the same as applying [a hearing correction filter] for a hearing aid profile because changing a volume does not change frequency characteristics of the underlying audio signal, and changing volumes does not involve a ‘collection of filters.’” PO Resp. 25–26. This argument has two aspects, both based on Patent Owner’s proposed construction of “hearing correction filter.”

First, Patent Owner argues that Fichtl’s algorithm operates on a single APP, for example volume, and that “[u]nder the correct claim construction, as set forth above, Fichtl’s application of its algorithm to an APP does not teach or suggest the limitations of the claim, as the disclosure of Fichtl does not include ‘*a collection of filters* applied by a processor to a hearing aid profile to reduce the level of correction provided to a user by application of the hearing aid profile.’” *Id.* at 26. As explained in Section II.A.1 above, an individual “hearing correction filter” is “a filter that is applied by a processor within a hearing aid to a hearing aid profile to reduce the level of correction provided to the user by application of the hearing aid profile,” and need not be a collection of such filters.

Second, Patent Owner contends that a hearing correction filter must “impact[] different frequencies of the signal in different ways,” for example adjusting one set of selected frequencies to a desired hearing level while providing less enhancement to other frequencies. *Id.* at 27. In contrast, Patent Owner argues, “adjusting a volume at any given disjointed volume adjusting event disclosed by Fichtl does not provide varying effects on different portions of the underlying audio signal of the hearing device.” *Id.*

As explained in Section II.A.1 above (at 15–17), however, a hearing correction filter need not provide such varying effects.<sup>5</sup>

On the complete record, we find that Fichtl teaches storing intermediate power-on values of an APP upon a user turning off the hearing aid and that these power-on values (e.g., iPOV, rPOV) are applied to an APP when the hearing aid is turned on to reduce the level of correction provided to the user. Ex. 1003, 3:42–4:15. We find that each of these power-on values represents an intermediate hearing adjustment to provide a modulated output signal having a level that is within a range between an uncompensated output level and the desired output level (tPOV) and, thus, is an “incremental hearing correction filter.”

We also find that, even under Patent Owner’s proposed construction of “hearing correction filter,” Fichtl teaches a collection of filters applied by a processor to a hearing aid profile. As explained above, we find that Fichtl describes a system that processes multiple APPs as part of a collection, rather than the single volume audio parameter value discussed in the example of Figure 2. Ex. 1003, 3:27–32.

Patent Owner takes issue with the specific APP examples, beyond volume, identified in Fichtl. Fichtl states that “[t]he audio processing

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<sup>5</sup> Patent Owner argues that “[t]he Petitioner provides no evidence that changing a volume is understood by a person of ordinary skill in the art to implicate a ‘filter’ much less a collection of filters as claimed.” PO Resp. 28. This argument is unclear. Nevertheless, Petitioner contends that a filter is simply an “adjustment” applied to a hearing aid profile. Pet. 21 (quoting Ex. 1001, 2:65–3:7). At the oral argument, Patent Owner disagreed that “filter” and “adjustment” are synonymous, but admitted that it did not provide a construction for “filter” or raise it as a dispute. Tr. 30:24–35:10.

parameter APP is typically volume but may also be something else, as, for example, treble or noise cancelling.” Ex. 1003, 3:44–47. Patent Owner argues that “[o]ne of ordinary skill in the art understands that adjusting treble takes place without using a collection of filters, but instead, as described in Fichtl, will be adjusted via an APP value.” PO Resp. 29. In support, Mr. Brown testifies, without elaboration or citation to evidence, that a skilled artisan “would not understand a treble adjustment, as referred to in Fichtl, to be a collection of filters.” Ex. 2003 ¶ 53. However, applied together with adjusting volume, adjusting treble would adjust multiple frequency ranges differently. Mr. Brown admits that this would be a hearing correction filter:

Q. . . . We’ve got the overall gain adjustment. We’ve got a set of higher frequencies that gets adjusted. And this takes place during the acclimatization process. Would you agree that those two adjustments constitutes a hearing correction filter?

THE WITNESS: I would agree that the modifications of the high-frequency bands could constitute a hearing correction filter.

Ex. 1016, 54:24–55:8 (objections omitted). Thus, Patent Owner’s argument is not persuasive.

Patent Owner also argues that “[n]oise cancellation is a pre-processing technique that is applied to a signal before the signal is provided to a hearing aid profile, and is also adjusted via an APP value.” PO Resp. 29. In support, Mr. Brown testifies, again without citation to evidence, that a skilled artisan

would understand that noise cancellation adjustments typically take place before the signal is provided to a hearing aid profile, as this pre-processing is needed to remove the extraneous frequencies. After this pre-processing, typically the signal is

then sent to the hearing aid profile for any profile adjustment to the signal.

Ex. 2003 ¶ 54. Patent Owner, however, does not explain why this should affect our analysis. In any case, Fichtl does not describe treating noise cancellation differently from volume and treble, the other example APPs it describes. Ex. 1003, 3:44–47. Thus, Patent Owner’s argument is unpersuasive.

Patent Owner also argues that Fichtl, Mangold, and Bisgaard do not teach “a second one of the sequence of incremental hearing correction filters . . . *being designated to follow the first one in the sequence of incremental hearing correction filters,*” as recited in claim 1. PO Resp. 31–34. Patent Owner contends that the progression of a sequence must be predictable from the first step to the next in a sequence and that Fichtl is different in that it describes a user-provided adjustment to the volume of a hearing aid, where that adjustment “at any one point in time is solely based on a user-provided command indicating the user’s hearing preferences at that particular moment in time.” *Id.* at 31. According to Patent Owner, “there is no teaching or suggestion in Fichtl that allows a person of ordinary skill in the art to determine or predict the order of subsequent adjustments.” *Id.* at 32. As a result, Patent Owner argues, “the first and second APPs are not determined in advance, are not predictable, and are not designated to be applied sequentially,” but rather “[t]he implementation of the first APP is the earliest that the second APP can be calculated.” *Id.*

At the hearing, Patent Owner clarified that it is arguing that the entire sequence of hearing correction filters must be determined before the first hearing correction filter is applied. Tr. 50:1–4 (“JUDGE McKONE: So it’s

your position that the entire sequence of hearing correction filters has to be determined before you apply the first one? MS. SAVEE: Yes, it has to be determined in advance.”). Nevertheless, Patent Owner does not contend that this turns on an issue of the construction of the term “sequence” (which Patent Owner says it is not disputing<sup>6</sup>). *Id.* at 50:9–17. Rather, according to Patent Owner, its position stems from “[t]he fact that the claims do recite a first hearing correction filter and a second hearing correction filter in the claims of this system, this device.” *Id.* at 50:18–23. Patent Owner argues that the ’999 patent describes an example of a collection of hearing correction filters that are known in advance and does not have any examples in which the hearing correction filters are not known in advance. *Id.* at 51:1–10; PO Resp. 32–33 (citing Ex. 1001, 2:65–3:40). The specification describes, for example:

In one embodiment, the incremental hearing corrections can be formed by applying one or more hearing correction filters to a selected hearing aid profile to produce the intermediate hearing aid profiles. In another embodiment, the incremental hearing corrections can be programmed by a hearing health professional. In still another embodiment, the incremental hearing corrections can be calculated dynamically as a function of a difference in decibels between the uncompensated level and the desired output level.

Ex. 1001, 3:33–41. This description does not indicate any requirement that all hearing correction filters be determined in advance of applying the first filter. To the contrary, the description of calculating the hearing corrections

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<sup>6</sup> Petitioner cites a dictionary definition of “sequence” as “the following of one thing after another in chronological, causal, or logical order.” Reply 10 (citing WEBSTER’S NEW COLLEGE DICTIONARY 2007, Ex. 1017, 1308).



“dynamically” suggests that, in one example, hearing correction filters are not determined in advance, but rather as they are needed.

Patent Owner also supports its argument with the testimony of Mr. Brown. PO Resp. 33 (citing Ex. 2003 ¶¶ 59–60). Here, Mr. Brown testifies that the ’999 patent describes a processor providing a series of generated hearing correction filters designated to be sequentially applied to a hearing aid profile, but does not testify as to when those filters must be generated, and specifically does not testify that all such filters must be generated or determined in advance of applying the first filter. Ex. 2003 ¶ 59. Thus, Mr. Brown’s testimony does not support the requirement Patent Owner proposes, as we understand that requirement from Patent Owner’s clarification at the oral argument. Moreover, as Petitioner points out (Reply 1–12), Mr. Brown conceded on cross-examination that Fichtl’s power-on values  $iPOV$ ,  $rPOV_1$ , and  $rPOV_2$  form a sequence. Ex. 1016, 61:1–17.

Patent Owner’s argument is unpersuasive, as it relies implicitly on limitations that are not present in claim 1, either expressly or by virtue of disclosure in the specification. As Petitioner argues, “each power-on value (POV) [of Fichtl] follows one after another in time, where each POV corresponds to a hearing correction filter.” Reply 11. Moreover, we agree with Petitioner (*id.* at 12) that Fichtl’s power-on values are determined in advance of when they are applied, as they are stored when the user powers off the device and applied when the device is turned back on. Ex. 1003, 3:42–53. Upon consideration of the complete record, we find that Fichtl describes hearing correction filters, such that the second one (e.g.,  $rPOV_2$ ) is

designated to follow the first one (e.g., rPOV<sub>1</sub>) in the sequence of incremental hearing correction filters.

Regarding instructions, executed by the processor, causing the processor to “cause the speaker to output an alert when a final one of the sequence of incremental hearing correction filters is being applied, the final one being the last hearing correction filter of the sequence of incremental hearing correction filters,” as recited in claim 1, Petitioner cites Bisgaard as an example of executing an audible alarm when a habituation period ends. Pet. 31–32. Dr. Atlas testifies that a skilled artisan would have incorporated this feature in the system of Fichtl and Mangold “so the user knows that he or she should now be hearing at a fully compensated level and can alert their audiologist if the operation does not seem right.” Ex. 1008 ¶ 129; Pet. 32. We credit Dr. Atlas’s testimony, which is uncontroverted. Petitioner also notes that Bisgaard expressly states that its system can be used with the hearing aid of Mangold. *Id.* at 33. According to Bisgaard, its invention

concerns a hearing aid of the kind which comprises a sound transducer, an analogue-digital converter, a digital processing and adjustment circuit for the processing of digital signals, corresponding to audio signals which are received by the transducer, memory units for the storage of data and programmes for the digital processing and adjustment circuit, a digital-analogue converter and a speaker.

A hearing aid of this known kind is described for example in the U.S. Pat. No. 4,972,487 [Mangold], which concerns a programmable hearing aid which also contains data logging means.

Ex. 1006, 1:5–15. We find that Bisgaard contains an express teaching to use its technology in systems such as those described in Fichtl and Mangold. In light of Dr. Atlas’s testimony and Bisgaard’s express teaching, we find that a

skilled artisan would have had reasons to combine Bisgaard with Fichtl and Mangold to arrive at the subject matter of claim 1.

Claim 2 depends from claim 1 and recites “each of the incremental hearing correction filters comprises a collection of acoustic configuration settings configured to modulate the electrical signal to a level that is within a range between an uncompensated hearing level of the user and the level to compensate for the hearing impairment of the user.” As explained above, we find that Fichtl’s algorithm operates on multiple parameters. *See also* Pet. 36–37; Ex. 1008 ¶¶ 136–138. Fichtl’s intermediate power-on values (iPOV, rPOV<sub>1</sub>, rPOV<sub>2</sub>) are in a range between an uncompensated hearing level of the user and the level to compensate for the hearing impairment of the user (tPOV). Ex. 1003, 3:35–4:15, 4:52–67. Accordingly, on the complete record, we find that Fichtl, Mangold, and Bisgaard teach the additional limitation of claim 2.

### (2) Claims 3–5

Claim 3 depends from claim 1 and adds, *inter alia*, “a transceiver coupled to the processor and configurable to communicate with a computing device through a communication channel during operation, the transceiver to receive a signal from the computing device and to provide the signal to the processor.” For example, as shown in Figure 2, the ’999 patent describes a hearing aid that communicates with a computing device, such as a smart phone or PDA. Ex. 1001, 6:3–16.

As shown in Figure 1, Fichtl describes a remote control as part of its hearing device and depicts external device 12 interfacing with its hearing aid 10. Pet. 38–39. Petitioner argues that Mangold has a more detailed

disclosure of use of a remote control with a hearing aid. *Id.* at 39. Petitioner cites disclosure in Mangold that selected programs can be stored in memory in the hearing aid or in memory in the remote control. *Id.* (citing Ex. 1007, 3:10–13, 3:27–29, 4:11–21, Figs. 2, 5). Dr. Atlas testifies that, in a combination of Fichtl and Mangold, a skilled artisan would have understood that either a POV or an indicator of a POV would have been sent by a remote control to the hearing aid, depending on whether the memory storing POVs was located in the remote control or the hearing aid. Ex. 1008 ¶ 143. We credit this testimony, which is uncontested. As Petitioner points out (Pet. 40–41), Mangold expressly states benefits of implementing some of the functionality of a hearing aid system in a remote control, namely, hearing aids that are “smaller, lighter in weight, and less visible” and remote controls that can execute more advanced functionality without the same size constraints. Ex. 1007, 1:67–2:2. In light of this evidence, we find that Fichtl, Mangold, and Bisgaard teach “a transceiver coupled to the processor and configurable to communicate with a computing device through a communication channel during operation, the transceiver to receive a signal from the computing device and to provide the signal to the processor.”

As to “wherein the processor applies the selected one of the sequence of incremental hearing correction filters in response to receiving the signal,” as recited in claim 3, Dr. Atlas testifies that it would have been obvious to locate Fichtl’s on/off switch in the remote control, which would result in a signal from the remote control instructing the processor in the hearing aid to apply a selected incremental hearing correction filter. Ex. 1008 ¶ 145; Pet. 41. Dr. Atlas further testifies that it was known to include components such as manual control switches in a remote control unit to save space in a

hearing aid. Ex. 1008 ¶ 144. We credit Dr. Atlas's uncontroverted testimony and find that Fichtl, Mangold, and Bisgaard teach "wherein the processor applies the selected one of the sequence of incremental hearing correction filters in response to receiving the signal," as recited in claim 3.

Claim 4 depends from claim 3 and recites "wherein the signal includes the selected one of the sequence of incremental hearing correction filters." As explained above, Mangold's selected programs can be stored in memory in the hearing aid (20) or in memory in the remote control (26). Ex. 1007, 3:10–13, 3:27–29, 4:11–21, Figs. 2, 5. Dr. Atlas testifies that, in a combination of Fichtl and Mangold where POVs are stored in the remote control, the signal from the remote control to the hearing aid in the Fichtl/Mangold combination would include the next selected POV. Ex. 1008 ¶ 146 ("Because this signal sent from the remote control to the hearing aid comprises an adjustment that the hearing aid processor applies to its processing of signals to reduce the level of correction provided to a user, the signal includes the selected one of the sequence of incremental hearing correction filters."). We credit Dr. Atlas's uncontroverted testimony, which has rational underpinning, and find that Fichtl, Mangold, and Bisgaard teach the additional limitation of claim 4.

Claim 5 depends from claim 3 and recites, "a memory to store the sequence of incremental hearing correction filters," "wherein the signal includes an indicator identifying the selected one of the incremental hearing correction filters within the sequence," and "wherein, in response to receiving the signal, the processor retrieves the selected one of the incremental hearing correction filters from the memory and applies the selected one to the modulated electrical signals." In other words, claim 5 is

an alternative to claim 4, in which the memory storing hearing correction filters is on the hearing aid and the hearing aid receives from the computing device an indicator of the next hearing correction filter to apply, rather than the filter itself. As explained above, Mangold's selected programs can be stored in memory in the hearing aid (20) or in memory in the remote control (26). Ex. 1007, 3:10–13, 3:27–29, 4:11–21, Figs. 2, 5. As Petitioner points out (Pet. 42–43), Fichtl's hearing aid includes a memory (non-volatile memory 7 shown in Figure 1) that stores incremental hearing correction filters (e.g., rPOV). Ex. 1003, 3:50–51, 4:2–4, 4:12–15, 4:33–36. Dr. Atlas testifies that, in the case where POVs are stored in the hearing aid, the signal from the remote control to the hearing aid in the Fichtl/Mangold combination would include an indicator identifying the POV, and that, in response to the signal, Fichtl's processor would retrieve the identified POV from the memory and apply it. Ex. 1008 ¶¶ 148–149. We credit Dr. Atlas's uncontroverted testimony, which has rational underpinning, and find that Fichtl, Mangold, and Bisgaard teach the additional limitation of claim 5.

We note that Patent Owner does not present separate argument for claims 3–5.

In sum, we find that a combination of Fichtl and Mangold would result in a hearing aid that communicates with a remote control, that it would have been obvious to send a signal from the remote control to the hearing aid (claim 3), and that signal would have included an incremental hearing correction filter if the filters were stored in the remote control (claim 4) or would have included an indicator if the filters were stored in the hearing aid (claim 5).

(3) Claim 16

Claim 16 depends from claim 1 and adds (emphasis added):

instructions that, when executed by the processor, cause the processor to generate the sequence of incremental hearing correction filters *based at least in part on a magnitude of a difference between a hearing aid profile and a hearing loss level associated with the user of the hearing aid*, the sequence of incremental hearing correction filters including at least the first hearing correction filter and the second hearing correction filter.

Petitioner contends that, because, in Fichtl's system, initial iPOV is selected to provide a smaller level of compensation than tPOV (the target value corresponding to the hearing aid profile), all incremental adjustments are generated to provide values between iPOV and tPOV. Pet. 44–45. Thus, Petitioner argues, the sequence of incremental hearing correction filters of Fichtl is generated based at least in part on the magnitude of the difference between tPOV and iPOV. *Id.*

In one example, Fichtl provides:

The threshold value T be the target power-on value tPOV itself or it can be calculated from it by a formula:

$$T = tPOV - \text{dist},$$

in particular with

$$\text{dist} = p * (tPOV - iPOV)$$

iPOV is an initial power-on value. For example, dist is equal to 1 dB, and p is equal to 0.1, for example.

Ex. 1003, 4:57–67. Dr. Atlas testifies that “the iPOV and all incremental adjustments in-between the iPOV and the tPOV are generated to provide values between the hearing loss level associated with the user (determined during the initial fitting) and the hearing aid profile (tPOV).” Ex. 1008

¶ 151. We note that Patent Owner does not present separate argument for claim 16.

Based on the disclosure of Fichtl and Dr. Atlas's uncontroverted testimony, we find that Fichtl's incremental hearing correction filters are based on a magnitude of a difference between a hearing aid profile and a hearing loss level associated with the user of the hearing aid. Thus, we find that Fichtl teaches the additional limitation of claim 16.

*e. Conclusion of Obviousness*

As explained above, Fichtl, Mangold, and Bisgaard teach each limitation of claims 1–5 and 16. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Fichtl, Mangold, and Bisgaard. Patent Owner does not argue or introduce evidence of objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that claims 1–5 and 16 would have been obvious over Fichtl, Mangold, and Bisgaard.

*3. Alleged Obviousness over Fichtl, Mangold, Bisgaard, and Sacha*

Petitioner contends that claim 18 would have been obvious over Fichtl, Mangold, Bisgaard, and Sacha. Pet. 45–47. For the reasons given below, we agree.



*a. Scope and Content of the Prior Art—Overview of Sacha*

Sacha describes a hearing aid that compensates for a patient's hearing deficit gradually over time. Ex. 1004, Abstract. The hearing aid is programmed with a group of parameter sets representing optimal and sub-optimal parameter sets, based on testing of the patient's hearing. *Id.* ¶ 12. The hearing aid selects parameter sets by sequencing through the parameter sets over time, for example in order of increasing amplification gain. *Id.* The hearing aid includes a timer that records the time during which the hearing aid is powered on and stores that value in a flash memory when the device is powered off. *Id.* ¶ 15. The progression from one parameter set to the next can occur after a specified time interval has elapsed. *Id.*

*b. Differences Between Claim 18 and the Prior Art, and Reasons to Modify or Combine*

Claim 18 depends from claim 1 and adds instructions that “cause the processor to: determine an amount of time during which the first hearing correction filter is applied; and apply the second hearing correction filter when the amount of time exceeds a pre-determined threshold.”

Petitioner cites Sacha for an acclimatization program that determines an amount of time during which a first hearing correction is applied and applying a second hearing correction after the amount of time exceeds a pre-determined threshold. Pet. 45–46. Sacha states that its “device may successively select a new parameter set after a specified operating time interval has elapsed” and that “[t]he progression from each parameter set to another may occur after the same operating time interval, or different operating time intervals may be defined for each parameter set.” Ex. 1004

¶ 15. We find that this teaches determining an amount of time during which a first hearing correction is applied and applying a second hearing correction when the amount of time exceeds a pre-determined threshold.

Petitioner, relying on Dr. Atlas's testimony, contends that a skilled artisan would have recognized that power-on events (Fichtl) and operating time (Sacha) are common, alternative mechanisms for triggering incremental corrections during an acclimatization process. Pet. 46 (citing Ex. 1008 ¶ 154). According to Dr. Atlas, Sacha's teaching would have prevented Fichtl's acclimatization process from occurring too quickly or slowly in instances where a user powers the hearing aid on and off too frequently or infrequently. Ex. 1008 ¶ 154. Dr. Atlas also testifies that triggering based on time intervals would have allowed control over which corrections are applied for longer or shorter time intervals depending on how close the algorithm is to full compensation. *Id.* We credit Dr. Atlas's uncontroverted testimony, which has rational underpinning. Accordingly, we find that Sacha teaches the additional limitations of claim 18 and that a skilled artisan would have had reasons to apply Sacha's teachings to Fichtl, Mangold, and Bisgaard. We note that Patent Owner incorporates its claim 1 arguments as to claim 18 (arguing that Sacha is not cited as meeting any of the alleged deficiencies of Petitioner's combination for claim 1), but does not present separate arguments for claim 18. PO Resp. 34.

*c. Conclusion of Obviousness*

As explained above, Fichtl, Mangold, Bisgaard, and Sacha teach each limitation of claim 18. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Fichtl,

Mangold, Bisgaard, and Sacha. Patent Owner does not argue or introduce evidence of objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that claim 18 would have been obvious over Fichtl, Mangold, Bisgaard, and Sacha.

*4. Alleged Obviousness over Fichtl, Sacha, Mangold, and DE961*

Petitioner contends that claims 6–9 and 17 would have been obvious over Fichtl, Sacha, Mangold, and DE961. Pet. 47–55. For the reasons given below, we agree.

*a. Scope and Content of the Prior Art—Overview of DE961*

DE961 describes a technique for adjusting operating parameters of a hearing aid in uniform steps, occurring in time intervals, using a controller with a timing element that has time constants for the operating parameters. Ex. 1009, 3:3–6, 5:11–13. Once the time constants have been set, the patient can choose a different time constant. *Id.* at 3:8–11, 4:30–5:4. For example, “[f]or the case when an adjustment of the operating parameters of the starting situation to the target situation occurs too rapidly for the patient, the patient can select a slower time constant of the circuit.” *Id.* at 5:1–4.

*b. Differences Between Claims 6–9 and 17 and the Prior Art, and Reasons to Modify or Combine*

Independent claim 6 recites a non-transitory computer-readable device with instructions that overlap with those of claims 1 and 18, discussed

above. For these limitations, the parties incorporate their respective arguments advanced for claims 1 and 18.

Specifically, Petitioner contends that the following limitations of claim 6 are taught in Fichtl and Mangold for the reasons given for claim 1:

- select a hearing aid profile from a plurality of hearing aid profiles, the selected hearing aid profile configured to modulate an audio signal to a level to compensate for a hearing impairment of a user;
- apply a first hearing correction filter to the selected hearing aid profile to reduce the amplitude of the modulated audio signal produced by the selected hearing aid profile to a first level that is less than the level to compensate for the hearing impairment of the user

Pet. 48.

As to the limitation “determine an amount of time during which the first hearing correction filter is applied,” Petitioner incorporates its argument as to the similar limitation of claim 18, discussed above. Pet. 48. Similarly, for the limitation of claim 6,

- selectively apply a second hearing correction filter to the selected hearing aid profile to reduce the amplitude of the modulated audio signal produced by the selected hearing aid profile to a second level that is greater than the first level and less than the level to compensate for the hearing impairment of the user *when the amount of time exceeds a pre-determined threshold,*

Petitioner incorporates its analysis of claims 1 and 18, discussed above.

*Id.* at 49 (emphasis added to identify language implicated by Petitioner’s claim 18 contentions).

- Patent Owner incorporates its argument as to the claim limitation apply a first one of a sequence of incremental hearing correction filters to the modulated electrical signals to produce

a modulated output signal to reduce the amplitude of the modulated electrical signals produced by the selected hearing aid profile to a first level that is less than a level to compensate for the hearing impairment of the user,

as recited in claim 1, but does not otherwise present separate argument for claim 6. PO Resp. 35. We agree with Petitioner’s identification of overlap between claim 6 and claims 1 and 18. For the reasons given for claims 1 and 18, we find that the limitations of claim 6 that overlap with claims 1 and 18 are taught in Fichtl, Mangold, and Sacha, and that a skilled artisan would have combined the teachings of these references.

Claim 6 further recites “the pre-determined threshold is programmable by the user.” Petitioner contends that this limitation is taught by DE961, pointing to DE961’s disclosure of time constants programmable directly by a user of a hearing aid. Pet. 49–50. For example, DE961 explains,

[i]t is possible with the timer 15 for the patient to preferably select alternatively a plurality of time constants. For the case when an adjustment of the operating parameters of the starting situation to the target situation occurs too rapidly for the patient, the patient can select a slower time constant of the circuit.

Ex. 1009, 4:31–5:4. We find that this is an example of a pre-determined threshold that is programmable by a user.

Dr. Atlas testifies that DE961’s teaching would have allowed a device to take user preferences into account, per Fichtl’s teaching, and would have allowed the user to ensure that the acclimatization program was not adjusting the hearing aid too slowly or too quickly, thereby encouraging the user to use the hearing aid. Ex. 1008 ¶ 165; Pet. 51–52. DE961 states, for example in the passage quoted above (Ex. 1009, 4:31–5:4), that its solution is beneficial to allow the user to select a slower time constant when

adjustments are happening too quickly. In light of DE961's disclosure and Dr. Atlas's uncontroverted testimony, we find that a skilled artisan would have applied DE961's teaching to the combination of Fichtl, Mangold, and Sacha to allow the user to slow the adjustments and thereby encourage use of the hearing aid.

On the complete record, we find that Fichtl, Sacha, Mangold, and DE961 teach each limitation of claim 6 and that a skilled artisan would have had reasons to combine these references.

Claim 7 depends from claim 6 and recites "wherein the pre-determined threshold is configurable by the user." Petitioner argues that, because DE961 teaches that a user can select a time constant to change the pre-determined threshold, that threshold is configurable by the user. Pet. 52 (citing Ex. 1008 ¶¶ 167–168). We agree, and find that DE961 teaches the additional limitation of claim 7.

Claim 8 depends from claim 6 and recites "instructions that, when executed by the processor, cause the processor to receive the first hearing correction filter and the second hearing correction filter from a transceiver configured to communicatively couple to a computing device during operation." Petitioner contends that claim 8 is substantially similar to claims 3 and 4 and incorporates its analysis of those claims for claim 8. Pet. 53. We agree, and find that Fichtl and Mangold teach the additional limitations of claim 8 for the reasons given above for claims 3 and 4.

Claim 9 depends from claim 6 and recites

instructions that, when executed by the processor, cause the processor to dynamically generate the first hearing correction filter and the second hearing correction filter based on at least one of the hearing impairment of the user and a hearing aid

profile including a collection of acoustic configuration settings for producing the modulated output signal at the corrected hearing level.

Petitioner contends that Fichtl's APP values are dynamically generated based on the target power-on value tPOV, which forms part of the hearing aid profile. Pet. 54. Petitioner argues that replacement power-on values rPOV are generated dynamically using recursive functions based on the preceding power-on value. *Id.* (citing Ex. 1003, 5:20–34, 5:53–6:19). Petitioner supports its arguments with Dr. Atlas's testimony (Ex. 1008 ¶¶ 171–172), which is uncontroverted. We credit Dr. Atlas's testimony and find that Fichtl teaches the additional limitation of claim 9. Moreover, as explained above, Fichtl's APP is part of a collection of APPs designed to correct for hearing loss. Thus, we find that the collection of APPs is a collection of acoustic configuration settings for producing the modulated output signal at the corrected hearing level. We further note that Patent Owner does not present separate arguments for claim 9. On the complete record, the subject matter of claim 9 is taught by Fichtl, Sacha, Mangold, and DE961.

Claim 17 depends from claim 6 and adds a limitation substantially similar to that of claim 16, which we analyze above and find taught by Fichtl. Petitioner incorporates its claim 16 arguments for claim 17. Pet. 55. Patent Owner does not present separate arguments for claim 17. For the reasons given for claim 16, we find that Fichtl teaches the additional limitation of claim 17. Accordingly, the subject matter of claim 17 is taught by Fichtl, Sacha, Mangold, and DE961.

*c. Conclusion of Obviousness*

As explained above, Fichtl, Sacha, Mangold, and DE961 teach each limitation of claims 6–9 and 17. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Fichtl, Sacha, Mangold, and DE961. Patent Owner does not argue or introduce evidence of objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that claims 6–9 and 17 would have been obvious over Fichtl, Sacha, Mangold, and DE961.

*5. Alleged Obviousness of Claim 19 over Fichtl, Sacha, Mangold, Bisgaard, and DE961*

*a. Differences Between Claim 19 and the Prior Art, and Reasons to Modify or Combine*

Petitioner contends that claim 19 would have been obvious over Fichtl, Sacha, Mangold, Bisgaard, and DE961. Pet. 55–56. Claim 19 depends from claim 18 and adds “wherein the pre-determined threshold is adjustable by the user.” This limitation is substantially similar to that of claim 6, addressed above. As with the parallel limitation of claim 6, Petitioner cites DE961. For the reasons given for claim 6, we find that DE961 teaches this limitation and would have been combined with Fichtl, Sacha, Mangold, and Bisgaard.

*b. Conclusion of Obviousness*

As explained above, Fichtl, Sacha, Mangold, Bisgaard, and DE961 teach each limitation of claim 19. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the



teachings of Fichtl, Sacha, Mangold, and DE961. Patent Owner does not argue or introduce evidence of objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that claim 19 would have been obvious over Fichtl, Sacha, Mangold, Bisgaard, and DE961.

### III. Patent Owner's Motion to Exclude Evidence

Patent Owner moves to exclude Exhibit 1009 (DE961), Mot. to Exclude 1–4, as well as Exhibits 1011 and 1012, *id.* at 4–7. Our decision does not rely on Exhibits 1011 or 1012. Accordingly, we dismiss the Motion to Exclude as moot as to these two exhibits. We focus our analysis on Patent Owner's Motion as to Exhibit 1009.

Exhibit 1009 is a translation of a German patent specification into English. It includes the following certification from the translator:

The undersigned declares that:

I am a professional translator with English as a native language and German as an acquired language. I have over 20 years of full-time translating experience in general, medical, technical, chemical and related fields.

To the best of my knowledge and belief, the attached is a true, accurate and complete English translation of the above-referenced German document.

Ex. 1009, 10. On August 10, 2017, Patent Owner objected to Exhibit 1009 as not being in accordance with 37 C.F.R. § 1.68, 37 C.F.R. §§ 42.2, 42.63(b), and 28 U.S.C. § 1746. Paper 10, 2. Patent Owner also objected to Exhibit 1009 as not being properly authenticated under Federal Rules of Evidence 901 and 902. *Id.*

Rule 42.63(b) provides “[w]hen a party relies on a document or is required to produce a document in a language other than English, a translation of the document into English and an affidavit attesting to the accuracy of the translation must be filed with the document.” Rule 42.2 defines “affidavit” as “affidavit or declaration under § 1.68 of this chapter.” Rule 1.68, in turn, states:

Any document to be filed in the Patent and Trademark Office and which is required by any law, rule, or other regulation to be under oath may be subscribed to by a written declaration. Such declaration may be used in lieu of the oath otherwise required, if, and only if, the declarant is on the same document, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. The declarant must set forth in the body of the declaration that all statements made of the declarant’s own knowledge are true and that all statements made on information and belief are believed to be true.

Section 1746 states that a sworn declaration may be supported with a statement in the following form: “If executed without the United States: ‘I declare (or certify, verify, or state) under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on (date). (Signature)’.” Patent Owner contends that the verification of Exhibit 1009 does not comply with these rules and, thus, Exhibit 1009 must be excluded. Mot. to Exclude 1–4.

In response to Patent Owner’s objections to Exhibit 1009, Petitioner served Exhibit 1015 as supplemental evidence. Opp. to Mot. to Exclude 2; Ex. 1018 (Aug. 24, 2017, email to Patent Owner attaching Ex. 1015). *See also* 37 C.F.R. § 42.64(b)(2)(“**Supplemental evidence**. The party relying on evidence to which an objection is timely served may respond to the

objection by serving supplemental evidence within ten business days of service of the objection.”). Exhibit 1015 is a copy of the translation of Exhibit 1009 that includes the following verification:

The undersigned declares that:

I am a professional translator with English as a native language and German as an acquire[d] language. I have over 20 years of full-time translating experience in general, medical, technical, chemical and related fields.

To the best of my knowledge and belief, the attached is a true, accurate and complete English translation of the above-referenced German document.

I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 U.S.C. 1001.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

Ex. 1015, 10. Petitioner argues that Exhibit 1015 complies with the above-quoted rules and was timely served. Opp. to Mot. to Exclude 2–3.

In reply, Patent Owner argues that Petitioner failed to cure its objections to Exhibit 1009 and that, “[t]o cure the identified deficiencies, Petitioner needed to provide evidence that the originally filed translation in Exhibit 1009 was proper. Instead, Petitioner is improperly attempting to add untimely and unrelated new evidence to this proceeding.” Reply Mot. to Exclude 1–2. Patent Owner argues that Exhibit 1015 is not supplemental evidence because “Exhibit 1015 never addresses the declaration originally filed in 1009, and provides no insight into accuracy of the originally filed translation.” *Id.* at 2. Patent Owner argues:

On its face, the only connection between Exhibit 1009 and Exhibit 1015 is that the same foreign document is translated. However, beyond this fact, Petitioner makes no representations regarding how Exhibit 1015 is related to Exhibit 1009 and provides no evidence that Exhibit 1009 was true and correct when it was filed.

*Id.* See also *id.* at 4 (“[E]ven new declarations filed as supplemental information provide a direct link to the evidence relied upon in the Petition.”).

We are not persuaded by Patent Owner’s argument. Exhibit 1015 clearly is a duplicate translation of the underlying document of Exhibit 1009, with a new verification, by the same translator, that complies with our Rules. Petitioner’s service email (Ex. 1018) clearly stated that Exhibit 1015 was being served pursuant to Patent Owner’s August 10, 2017, Objections. Patent Owner cites no authority for its argument that supplemental evidence must on its face include a “direct link” to the objected-to evidence. In any case, we see no ambiguity in the relationship between Exhibits 1009 and 1015. We also find that the verification in Exhibit 1015 complies with our rules and cures the basis for Patent Owner’s authenticity objection to Exhibit 1009.

Patent Owner also argues that Exhibit 1015 is not “offered solely to support admissibility,” and thus is not supplemental evidence. Reply Mot. to Exclude 2 (quoting *Handi Quilter, Inc. v. Bernina International AG*, Case IPR2013-00364 (PTAB June 12, 2014) (Paper 30), slip op. at 2–3 (“The difference is that supplemental *evidence*—served in response to an evidentiary objection and filed in response to a motion to exclude—is offered solely to support admissibility of the originally filed evidence and to defeat a motion to exclude that evidence, and not to support any argument

on the merits (i.e., regarding the patentability or unpatentability of a claim). Supplemental *information*, on the other hand, is evidence a party intends to support an argument on the merits.”)). It is clear that Exhibit 1015 was served to fix the form of the translator’s verification, and cure an evidentiary objection, not to introduce new substantive evidence to the case. Thus, Patent Owner’s argument is not persuasive.

Patent Owner cites *R.J. Reynolds v. Fontem Holdings*, Case IPR2016-01272 (PTAB Mar. 22, 2017) (Paper 27), slip op. at 3, for the proposition that “[w]hen a party files a new declaration to cure failures under 37 C.F.R. §42.63(b), the Board considers these new declarations supplemental information.” Reply Mot. to Exclude 3. In fact, *R.J. Reynolds* determined that such a new declaration is supplemental evidence, despite that the petitioner sought to file it as supplemental information. Case IPR2016–01272, Paper 27, slip op. at 3 (“Here, the material that Petitioner seeks to file is evidence offered in response to objections raised by Patent Owner. Thus, we determine that the pertinent documents are supplemental evidence.”). Thus, Patent Owner’s argument is not persuasive.

Patent Owner further argues that a new declaration filed in support of a translation must attest to the translation originally filed. Reply Mot. to Exclude 4. In this case, the new declaration in Exhibit 1015, by the same translator as Exhibit 1009, attests to the accuracy of the same translation as that of Exhibit 1009. Therefore, we find that the new declaration does attest to the translation originally filed.

In sum, we find that Exhibit 1015 was served properly as supplemental evidence and that it cures the deficiency in the translator’s verification statement objected to by Patent Owner. Patent Owner’s

authenticity objections to Exhibit 1009 are overruled and the Motion to Exclude is denied as to Exhibit 1009.

#### IV. CONCLUSION

Petitioner has proved by a preponderance of the evidence that claims 1–9 and 16–19 are unpatentable.

Patent Owner’s Motion to Exclude is dismissed-in-part and denied-in-part.

#### V. ORDER

For the reasons given, it is:

ORDERED, based on a preponderance of the evidence, that claims 1–9 and 16–19 are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Exclude Evidence is *dismissed-in-part and denied-in-part*; and

FURTHER ORDERED, because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2017-00781  
Patent 8,654,999 B2

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