

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AVATION MEDICAL, INC.,

Petitioner,

v.

EMKINETICS, INC.,

Patent Owner

Review No. IPR2024-01378

U.S. Patent No. 9,002,477

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I. The Petition does not demonstrate a reasonable likelihood that Petitioner would prevail if trial were instituted.....	1
A. Grounds 1-3 of the Petition do not establish that Petitioner is likely to prevail because Petitioner has not shown that Svihra qualifies as prior art.....	2
B. Even if Svihra (Ex. 1004) were considered, Ground 1 fails because Svihra does not disclose all elements of claim 1.....	6
1. Svihra (Ex. 1004) does not disclose “detecting...”.....	6
2. Svihra (Ex. 1004) does not disclose “receiving...”	8
3. Svihra (Ex. 1004) does not disclose “adjusting...”.....	9
C. Even if Svihra (Ex. 1004) were considered, Ground 2 fails because Petitioner has not shown the obviousness of claim 1 of the ’477 Patent.....	10
D. Even if Svihra (Ex. 1004) were considered, Ground 3 fails because Petitioner has not shown the obviousness of claims 2-10 of the ’477 Patent.....	17
E. Ground 4 of the Petition fails because Petitioner has not shown the obviousness of claim 1	17
F. Ground 5 of the Petition fails because Petitioner has not shown the obviousness of claims 2-10	20
II. Conclusion.....	20

TABLE OF AUTHORITIES

Page(s)

Cases

<i>In re Bigio</i> , 381 F.3d 1320 (Fed. Cir. 2004).....	18-19
<i>FLIR Sys., Inc. v. Leak Surveys, Inc.</i> , Case IPR2014-00411, slip op. (PTAB Sept. 5, 2014) (Paper 9).....	3
<i>Ford Motor Co. v. Cruise Control Techs. LLC</i> , Case IPR2014-00291, slip op. (PTAB June 29, 2015) (Paper 44).....	3
<i>LG Electronics, Inc. v. Advanced Micro Devices, Inc.</i> , Case IPR2015-00329, slip op. (PTAB July 10, 2015) (Paper 13)	6
<i>Standard Innovation Corp. v. Lelo, Inc.</i> , Case IPR2014-00148, slip op. (PTAB Apr. 23, 2015) (Paper 41).....	4-5
<i>Virtek Vision Int’l ULC v. Assembly Guidance Sys., Inc.</i> , 97 F.4th 882 (Fed. Cir. 2024).....	15-16, 19

Statutes & Rules

35 U.S.C. § 102(b).....	2
37 C.F.R. § 42.107.....	1
37 C.F.R. § 42.120(a)	1

PATENT OWNER'S TABLE OF EXHIBITS

No exhibits are submitted by Patent Owner with this Preliminary Response. However, Patent Owner reserves the right to submit exhibits as may be necessary and appropriate should the Board institute proceedings.

Pursuant to 37 C.F.R. § 42.107, Patent Owner EMKinetics, Inc.

(“EMKinetics” or “Patent Owner”) files this Preliminary Response setting forth reasons why the Petition for *Inter Partes* Review (Paper 2) of claims 1-10 of U.S. Patent No. 9,002,477 (the “’477 Patent”), as requested by Avation Medical, Inc. (“Avation” or “Petitioner”), should be denied and no trial instituted.¹

I. The Petition does not demonstrate a reasonable likelihood that Petitioner would prevail if trial were instituted

As explained below, Petitioner fails to demonstrate a reasonable likelihood of success if *inter partes* review of the ’477 Patent were instituted. Petitioner relies heavily on Svihra (Ex. 1004) in Grounds 1-3 but fails to show that Svihra (Ex. 1004) was published or publicly accessible at the relevant time to constitute prior art. Even if Svihra were to qualify as prior art to the ’477 Patent, Petitioner has failed both to show that Svihra discloses each and every element of the claims of ’477 Patent (Ground 1) and to demonstrate that the prior art in total renders the challenged claims obvious (Grounds 2-3). Petitioner’s claim that a person of ordinary skill in the art would have been motivated to make multiple modifications

¹ By submitting this Preliminary Response, no waiver of any argument is intended by Patent Owner. Patent Owner will have a right to file a complete response to the Petition, should the Board institute *inter partes* review. 37 C.F.R. § 42.120(a).

to Svihra (Ex. 1004) to arrive at the claimed inventions lacks support in the record. And, for many the same reasons, Petitioner fails to show that a person of ordinary skill in the art would have been motivated to make those same modifications to Amarenco (Ex. 1005) to arrive at the claimed inventions. Patent Owner respectfully requests that institution be denied.

A. Grounds 1-3 of the Petition do not establish that Petitioner is likely to prevail because Petitioner has not shown that Svihra qualifies as prior art

Each of Grounds 1-3 of the Petition relies on Svihra (Ex. 1004). (Paper 2 at 3). Although the Petition asserts that “Svihra (Ex. 1004) published in 2002 and is therefore prior art under pre-AIA 35 U.S.C. § 102(b)” (Paper 2 at 14), the Petition does not identify any evidence that Svihra was, in fact, publicly accessible before the alleged critical date. On its face (Ex. 1004), Svihra appears to be a document entitled, “Neuromodulative treatment of overactive bladder – noninvasive tibial nerve stimulation.” (*Id.* at 480).

However, beyond potentially looking like an article, there is no evidence cited in the Petition that Svihra was publicly accessible at any time, let alone before the alleged critical date. To be clear, “there is no presumption in favor of ... finding a reference to be a printed publication.” *Hulu, LLC v. Sound View Innovations, LLC*, Case IPR2018-01039, slip op. at 16 (PTAB Dec. 20, 2019)

(Paper 29). Rather, the burden lies with Petitioner “to identify with particularity evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent.” *Id.*

Here, Petitioner does not identify any such evidence, with particularity or otherwise, and thus fails to meet its burden. Beginning with Svihra itself, it does not bear a copyright notice.² It does not include a publication page. It does not have an International Standard Book Number (ISBN) on it. It does not bear the name of any known publication. And, importantly, it does not state that it was published. Accordingly, on its face, Svihra fails to provide any indicia of its own public accessibility.

The Petition likewise does not identify any evidence outside the four corners of Svihra tending to establish the public accessibility of Svihra. For example, the attorney declaration submitted with the Petition declares, *in toto*, that “[a] true and

² The fact that Svihra does not contain a copyright notice distinguishes cases in which a copyright notice has been accepted as *prima facie* evidence of publication for purposes of institution. *See, e.g., Ford Motor Co. v. Cruise Control Techs. LLC*, Case IPR2014-00291, slip op. at 7-8 (PTAB June 29, 2015) (Paper 44) (citing *FLIR Sys., Inc. v. Leak Surveys, Inc.*, Case IPR2014-00411, slip op. at 18-19 (PTAB Sept. 5, 2014) (Paper 9)).

correct copy of [Svihra] is attached” to such declaration. (Ex. 1053 ¶ 6). The attorney declaration does not recite any further allegations concerning Svihra. It does not, for instance, declare that Svihra was publicly accessible prior to the alleged critical date. It does not, by way of further example, express any personal knowledge or explain how the copy of Svihra was obtained or when it was obtained, or provide or identify any evidence tending to establish that Svihra could have been obtained from a library, or some other qualifying public source, before the alleged critical date.

The expert declaration submitted with the Petition (Ex. 1003) similarly identifies no evidence tending to establish the public accessibility of Svihra. Although the expert claims that “Svihra published a study,” the expert does not allege that Svihra was publicly accessible before the alleged critical date or that Svihra was published in 2002. (*Id.* ¶ 44). Nor does the expert state, for example, that he personally recalls the publication of Svihra. And, like the attorney declaration (Ex. 1053), the expert declaration (Ex. 1003) does not explain why information concerning the source or publication of Svihra could not have been obtained by reasonable efforts.

Thus, the entirety of Petitioner’s challenge under Grounds 1-3, insofar as it relies on Svihra qualifying as prior art, is based on the document submitted as Exhibit 1004. Accordingly, the dates in Svihra are hearsay. *See Standard*

Innovation Corp. v. Lelo, Inc., Case IPR2014-00148, slip op. at 13-16 (PTAB Apr. 23, 2015) (Paper 41) (determining that reliance on a copyright notice as evidence that a reference was a printed publication as of a particular date is inadmissible hearsay). Yet, the Petition does not acknowledge that the dates in Svihra are hearsay or even offer them as truth of the matter asserted. Nor does the Petition attempt to show that the dates in Svihra are admissible, even though hearsay, to prove any proposition, such as the publication date, if any, of Svihra. Instead, the Petition is silent on these issues.

Even if the dates in Svihra were admissible hearsay, they do not establish the public availability of Svihra before the alleged critical date. At most, Svihra states that it was “[r]eceived” and “[a]ccepted” in 2002 in connection with some entity known as “Bratisl Lek Listy.” (Ex. 1004 at 483). As mentioned above, Svihra does not state that it was published at any time. Thus, even if this hearsay were admissible and tended to establish the proof of the matter asserted (*e.g.*, that Svihra was received and accepted in 2002 by Bratisl Lek Listy), it does *not* establish that Svihra was published or otherwise publicly accessible before the alleged critical date, as receiving and accepting a document fall short of publishing one.

In short, the hearsay at issue, even if admissible and true, does not establish public accessibility. Moreover, even if this hearsay tended to prove publication of Svihra in 2002 (which it does not), the Board is free to conclude that the mere

presence of a date, without more, is insufficient evidence of public accessibility as of a particular date, given that the burden of proof always lies with Petitioner. *See, e.g., LG Electronics, Inc. v. Advanced Micro Devices, Inc.*, Case IPR2015-00329, slip op. at 10 (PTAB July 10, 2015) (Paper 13) (also recognizing that different panels of the Board have required varying levels of evidentiary rigor on institution).

Accordingly, Petitioner has failed to carry its burden of identifying, with particularity, evidence sufficient to establish a reasonable likelihood that Svihra was publicly accessible or that there is a reasonable likelihood that Svihra qualifies as a printed publication. Because each of Grounds 1-3 in the Petition relies on Svihra, the Petition fails to establish a likelihood of success on Grounds 1-3.

B. Even if Svihra (Ex. 1004) were considered, Ground 1 fails because Svihra does not disclose all elements of claim 1

As detailed below, even if Svihra were qualified as prior art to the '477 Patent, the Petition fails to show that Svihra discloses the necessary elements of Claim 1 of the '477 Patent so as to anticipate Claim 1.

1. Svihra (Ex. 1004) does not disclose “detecting...”

Claim 1 of the '477 Patent recites “detecting electrical conduction through the posterior tibial nerve or branch thereof or detecting a muscular response caused by an electrical conduction through the posterior tibial nerve or branch thereof via

at least one sensor positioned along a second portion of the body.” Petitioner fails to show that Svihra (Ex. 1004) discloses this claim element.

Petitioner incorrectly asserts that Svihra (Ex. 1004) discloses the “detecting” element, as claimed, because Svihra (Ex. 1004) allegedly discloses using an electromyographic (“EMG”) device to measure the maximal amplitude of response registered from the abductor hallucis muscle. (Paper 2 at 19 (citing Ex. 1004 at 481)). This is not true. Svihra (Ex. 1004) discloses using an EMG device to provide electrical stimulation, not to detect electrical conduction, as claimed. The parties agree that Svihra discloses that a response was “registered.” (Paper 2 at 19 (citing Ex. 1004 at 481). The parties also agree that “Svihra does not expressly state EMG sensors/electrodes were used.” (Paper 2 at 19).

While Petitioner claims that sensors “necessarily must have been used” in Svihra (*id.*), this is not in fact the case. Svihra explains that electrical conduction was “registered” by mere visual observation of “dorsal flexion of a thumb of left foot.” (Ex. 1004 at 481). Because mere visual observation does not involve “detecting electrical conduction ... via at least one sensor positioned along a second portion of the body,” Svihra does not disclose all elements of claim 1 of the ‘477 Patent, and Ground 1 of the Petition fails to demonstrate a likelihood of prevailing if trial were instituted.

2. Svihra (Ex. 1004) does not disclose “receiving...”

Claim 1 of the '477 Patent recites “receiving a signal from the at least one sensor indicative of the detected electrical conduction or muscular response thereby providing feedback about the efficacy of the applied electrical stimulation therapy.” Petitioner fails to show that Svihra (Ex. 1004) discloses this claim element.

Petitioner incorrectly asserts that Svihra (Ex. 1004) discloses the “receiving” element, as claimed, because “Svihra necessarily received results from the EMG device.” (Paper 2 at 19). Again, not true. While Svihra may disclose using an EMG device to provide electrical stimulation, even at less than maximal intensity, that is not to say anything about detecting electrical conduction. As before, Petitioner overlooks Svihra’s teaching that a response to stimulus was “registered” visually by observing “flection” of the foot. (Ex. 1004 at 481). Thus, it is not “necessary,” contrary to Petitioner’s claims, that Svihra used any sensors for detection. Moreover, Petitioner makes no effort to show that this visual information “provid[ed] feedback about the efficacy of the applied electrical stimulation therapy,” as claimed. Because Svihra (Ex. 1004) does not expressly or inherently disclose the “receiving” element of claim 1, Svihra does not disclose all elements of claim 1 of the '477 Patent as necessary for anticipation. Ground 1 of the Petition therefore fails to demonstrate a likelihood of prevailing if trial were instituted.

3. Svihra (Ex. 1004) does not disclose “adjusting...”

Claim 1 of the '477 Patent recites “adjusting the current via a controller in communication with the electrical stimulator based on the feedback.” Petitioner fails to show that Svihra (Ex. 1004) discloses this claim element.

Petitioner incorrectly asserts that Svihra (Ex. 1004) discloses the “adjusting” element, as claimed, simply because Svihra (Ex. 1004) discloses varying the level of electrical stimulation provided. (Paper 2 at 20). Claim 1 of the '477 patent recites more than what Petitioner finds in Svihra, namely, claim 1 recites “adjusting the current via a controller in communication with the electrical stimulator based on the feedback.” Petitioner does not disclose any teaching in Svihra wherein current was adjusted via a controller in communication with the electrical stimulator based on the feedback from a sensor, as claimed. Although Petitioner implies a controller was used, Petitioner does not assert that such a controller was necessarily present in Svihra. Stating that “the intensity (*i.e.*, current) of the electrostimulation necessarily was adjusted via a controller” does not make it factually so. (Paper 2 at 20).

Rather, Petitioner asserts that adjusting stimulation to any level less than the maximum level of stimulation, prior to treatment, means adjusting stimulation during treatment based on feedback. (Paper 2 at 20). This is not the case. Petitioner, building on its incorrect assumption that Svihra necessarily used sensors

to detect electrical conduction, then incorrectly concludes that Svihra somehow used the feedback from those sensors to adjust the stimulation applied. (*Id.*). None of these teachings are found in Svihra. (Ex. 1004). In Svihra, the operator of the EMG device simply adjusts the stimulation applied and visually observes the effects of stimulation. (Ex. 1004 at 481). This does not involve “adjusting the current via a controller in communication with the electrical stimulator based on the feedback,” as claimed. Indeed, Svihra explains that intensity was constant at 25mA, *i.e.*, not adjusted, throughout the procedure, and no adjustments were made based on any basis, whether feedback or otherwise. (*Id.*).

Because Svihra (Ex. 1004) does not expressly or inherently disclose the “adjusting” element of claim 1, Svihra does not disclose all elements of claim 1 of the ‘477 Patent as necessary for anticipation, and Ground 1 of the Petition fails to demonstrate a likelihood of prevailing if trial were instituted.

**C. Even if Svihra (Ex. 1004) were considered, Ground 2 fails because
Petitioner has not shown the obviousness of claim 1 of the ‘477
Patent**

In Ground 2, Petitioner incorrectly asserts that a person of ordinary skill in the art would have been motivated to modify Svihra (Ex. 1004) to include the “detecting,” “receiving,” and “adjusting” elements of claim 1 of the ‘477 Patent. (Paper 2 at 27-28). Whether these modifications would have been obvious is the

main issue raised by the Petition. Yet Petitioner treats the topic in a single paragraph (*id.*) that fails to articulate any specific motivation to combine the references to arrive at the claimed invention, as explained below.

Petitioner focuses on the DiLorenzo reference (Ex. 1054 at 4:38-5:38) to claim that a person of ordinary skill in the art would have modified Svihra (Ex. 1004) to add the “detecting,” “receiving,” and “adjusting” elements of claim 1 of the ’477 Patent missing from Svihra (Ex. 1004) because DiLorenzo (Ex. 1054) supposedly describes “numerous benefits” of systems having these features. (Paper 2 at 27-28). DiLorenzo relates to invasive “intracranial stimulation for optimal control of movement disorders and other neurological disease” such as Parkinson’s disease. (Ex. 1054 at 1:18-19). In the portion cited by Petitioner (Ex. 1054 at 4:38-5:38), DiLorenzo lists certain benefits of the entire systems and methods disclosed therein, not the “detecting,” “receiving,” or “adjusting” elements of claim 1 of the ’477 Patent missing from Svihra (Ex. 1004).

Specifically, DiLorenzo discloses “incorporating quantitative and qualitative measures of patient symptomatology and neuromotor circuitry function in the regulation of treatment magnitude.” (Ex. 1054 at 4:38-43). In DiLorenzo, patient symptomatology describes the set of symptoms being experienced by the patient, and neuromotor circuitry function is the ability of the patient’s brain to coordinate muscle movements. (*See id.* at 1:37-41). DiLorenzo suggests that a system could

beneficially utilize measurements of these characteristics to improve treatment of neurological disease. (*Id.* at 4:38-5:38).

However, incorporating information about these characteristics into treatment is not the same as “detecting electrical conduction [resulting from delivering an electrical stimulus] ... via at least one sensor positioned along a second portion of the body,” “receiving a signal from the at least sensor indicative of the detected electrical conduction,” and “adjusting the current via a controller in communication with the electrical stimulation based on the feedback,” as claimed in the ’477 Patent. Even where DiLorenzo discusses “[s]ensory feedback signals,” it is not for the purpose of “adjusting the current via a controller in communication with the electrical stimulator based on the feedback.” Rather, it is simply to inform the clinician about the characteristics of the existing patient’s symptomatology and motor function, and “to augment their manual selection of optimum treatment magnitude and pattern.” (*Id.* at 4:65-5:1).

None of characteristics upon which these treatment changes are made is the same as the detection of electrical conduction via sensors, receiving feedback signals from such sensors, or adjusting the electrical stimulation based on such feedback signals, as claimed. In short, while DiLorenzo discloses the benefits of their entire system, none of those benefits have to do with the “detecting,”

“receiving,” or “adjusting” elements of claim 1 and missing from Svihra (Ex. 1004).

The other references cited by Petitioner fare no better. Bourget (Ex. 1056) relates to implantable medical devices such as pacemakers and drug pumps. (Ex. 1056 at 1:14-18). As with DiLorenzo (Ex. 1054), Petitioner confuses measuring and incorporating patient parameters, as disclosed in Bourget (Ex. 1056), with the “detecting,” “receiving,” or “adjusting” elements of claim 1. Exemplary patient parameters disclosed in Bourget include “posture, activity, heart rate, temperature, respiration rate, and pH.” (*Id.* at 2:17-18). While some of these parameters are electrical in nature (*e.g.*, heart rate), Bourget does not disclose, and Petitioner does not identify, any teaching of detecting electrical conduction resulting from the delivery of electrical stimulation via sensors, receiving feedback signals from such sensors, or adjusting treatment based on such sensors. Rather, like DiLorenzo, Bourget discloses better understanding and incorporating the patient’s existing symptoms and functions, not measuring electrical conduction resulting from the delivery of electrical stimulation to adjust the current delivered to improve therapy.

With respect to Gerber (Ex. 1055), Petitioner cites a single sentence in this reference that speaks to “adjustments to provide an adaptive neurostimulation therapy.” (Paper 2 at 28 (citing Ex. 1055 at 2:14-16)). Gerber explains that these adjustments can be based on information from a variety of sources, such as simply

asking the patient. (Ex. 1055 at 2:8). Gerber provides a listing of the information upon which treatment may be adjusted, such as voiding attempts, involuntary leakage, and discomfort. (Ex. 1055 at 2:17-28). At no point does Gerber teach or suggest “detecting electrical conduction through the posterior tibial nerve or branch thereof ... via at least one sensor positioned along a second portion of the body,” “receiving a signal from the at least one sensor indicative of the detected electrical conduction or muscular response thereby providing feedback about the efficacy of the applied electrical stimulation therapy,” or “adjusting the current via a controller in communication with the electrical stimulator based on the feedback,” as claimed. Like DiLorenzo (Ex. 1054) and Bourget (Ex. 1056), Gerber (Ex. 1055) focuses on incorporating information about the patient, not information about “an electrical conduction through the posterior tibial nerve or branch,” as claimed.

Petitioner’s treatment of the final reference (Mann, Ex. 1084) is also incorrect. Petitioner cites a single sentence in Mann explaining that “[i]t is a further object of this invention to teach a method whereby a patient can receive one or more patterns of neural stimulation that can be prescribed by a physician and administered without continuous oversight by a clinical practitioner.” (Paper 2 at 28 (citing Ex. 1084 at 10:12-16)). Petitioner does not explain how this excerpt from Mann discloses the “detecting,” “receiving,” or “adjusting” elements of claim

1. (Paper 2 at 28). Nor does Petitioner otherwise correlate these claim elements to the alleged benefits that would have been achieved by combining Mann with Svihra (Ex. 1004). (Paper 2 at 28). As Petitioner acknowledges, Mann was already cited and considered during prosecution (Paper 2 at 28). Certainly, the Petition does not identify evidence that the original examiner erred in allowing claim 1 over the Mann reference.

In sum, Petitioner has not shown that a person of ordinary skill in the art would have been motivated to combine Svihra (Ex. 1004) with any of the secondary references cited in the Petition to arrive at the invention recited in claim 1. At most, these secondary references suggest incorporating patient information into a treatment plan. They stand for the unremarkable proposition that medical treatments may work better when the patient's symptoms and features are better understood and incorporated into the treatment plan. They do not disclose that such information constitutes information about "electrical conduction through the posterior tibial nerve or branch thereof or detecting a muscular response caused by an electrical conduction through the posterior tibial nerve or branch thereof," that such conduction information is "detect[ed] ... via at least one sensor," or that current is adjusted via a controller based on the feedback.

The deficiencies in the Petition here are similar to the circumstances in *Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc*, 97 F.4th 882 (Fed. Cir.

2024). There, the Federal Circuit concluded that the Board’s determination that certain patent claims would have been obvious was not supported by substantial evidence where: (1) no argument about common sense was presented in the petition or in the expert declaration; (2) “[t]here was no evidence that there are a finite number of identified, predictable solutions”; and (3) “there [was] no evidence of a design need or market pressure.” *Id.* at 886-88.

Here, the same is true. First, neither Petitioner nor its expert makes any argument about common sense (although Petitioner’s expert acknowledges that “common sense” is an important consideration in an obviousness analysis, Ex. 1003 ¶ 29). Second, Petitioner does not claim that there are a finite number of identified, predictable solutions, only that the systems “could be implemented in any type of electrical stimulation or system.” (Paper 2 at 26). Petitioner’s argument is tantamount to saying that any electrical component can be connected to any other electrical component, and that all electrical inventions are invalid as obvious. Third, and lastly, Petitioner does not provide any evidence of a design need or market pressure, only that there were “known” systems that “could be” been combined. (Paper 2 at 26-27). *Virtek Vision*, 97 F.4th at 887 (“The mere fact that these possible arrangements existed in the prior art does not provide a reason that a skilled artisan would have substituted [them].”).

Accordingly, Petitioner has not shown that it is likely to prevail based on Ground 2, and the Petition should be denied.

D. Even if Svihra (Ex. 1004) were considered, Ground 3 fails because Petitioner has not shown the obviousness of claims 2-10 of the '477 Patent

As explained in Part I.B above, Svihra (Ex. 1004) does not disclose all elements of claim 1 of the '477 Patent and therefore does not anticipate claim 1 of the '477 Patent. As explained above in Part I.C above, Petitioner has not shown that claim 1 of the '477 Patent is obvious over Svihra in view of any other reference. Accordingly, Petitioner has not shown that the inventions recited in claims 2-10 of the '477 Patent would have been obvious either. Ground 3 therefore fails for at least the same reasons as Grounds 1 and 2.

E. Ground 4 of the Petition fails because Petitioner has not shown the obviousness of claim 1

Ground 4 of the Petition fails at least the same reasons as Ground 2. In Ground 4, like Ground 2, Petitioner suggests that a person of ordinary skill in the art would have been motivated to modify the primary reference (Amarenco, Ex. 1005) with any of several secondary references to supply the “detecting,” “receiving,” or “adjusting” elements of claim 1 and missing from Amarenco (Ex. 1005).

In Ground 4, Petitioner repeats the same arguments as Ground 2, which, as explained above, do not establish a likelihood that Petitioner would prevail if trial were instituted. Petitioner first argues that the primary and secondary references are directed to “similar fields.” (Paper 2 at 47). Absent a showing that the reference is reasonably pertinent to the problem faced by the inventor, the legal question is whether the references are from the “same field of endeavor.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). Here, Petitioner makes no effort to show that these references are from “same field,” as the law requires, only “similar fields,” which is insufficient for this prong of the analysis.

Petitioner next argues that it is incorrect to argue that “Amarenco would not be considered with these [secondary] references.” (Paper 2 at 48). As set forth above, if the references are from different fields, the question is the “whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d at 1325. On this issue, Petitioner insufficiently claims only that the secondary references “could be implemented” and “could be employed.” (Paper 2 at 48). Petitioner does not discuss any problems with which the inventor is involved, only that the systems shown in the secondary references could have been implemented. This is plainly insufficient to show the secondary references constitute analogous art, particularly where Petitioner

acknowledges a difference *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).
between invasive implants and the non-invasive methods claimed.

After arguing without showing that the cited references are analogous art, Petitioner then argues that a person of ordinary skill in the art would have been motivated to modify the primary reference (Amarenco, Ex. 1005) with any of several secondary references to supply the “detecting,” “receiving,” or “adjusting” elements of claim 1 and missing from Amarenco (Ex. 1005). As above, the secondary references at most suggest incorporating patient information into a treatment plan. They stand for the unremarkable proposition that medical treatments may work better when the patient’s symptoms and features are better understood and incorporated into the treatment plan. They do not disclose that such information constitutes information about “electrical conduction through the posterior tibial nerve or branch thereof or detecting a muscular response caused by an electrical conduction through the posterior tibial nerve or branch thereof,” that such conduction information is “detect[ed] ... via at least one sensor,” or that current is adjusted via a controller based on the feedback. A finding of obviousness on such a scant record would contravene Federal Circuit precedent, *see, e.g., Virtek Vision*, 97 F.4th at 886-88.

Ground 4 therefore fails, and the Petition should accordingly be denied.

F. Ground 5 of the Petition fails because Petitioner has not shown the obviousness of claims 2-10

As explained in Part I.E above, Petitioner has not shown that claim 1 of the '477 Patent is obvious over Amarenco (Ex. 1005) in view of any other reference. Accordingly, Petitioner has not shown that the inventions recited in claims 2-10 of the '477 Patent would have been obvious either. Ground 5 therefore fails.

II. Conclusion

For at least the foregoing reasons, the Petition (Paper 2) should be denied and no trial instituted.

Respectfully submitted,

Date: December 20, 2024

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CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE complies with the type-volume limitation in 37 C.F.R. § 42.24(b)(1). According to the word-processing system's word count, the brief contains 4,542 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

Date: December 20, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on December 20, 2024, a complete and entire copy of this Patent Owner's Preliminary Response was provided via email to the Petitioner by serving the email correspondence addresses of record as follows:

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