

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GARMIN INTERNATIONAL, INC.,
Petitioner,

v.

CARDIACSENSE LTD.,
Patent Owner.

Case No. IPR2025-00195
U.S. Patent No. 7,980,998

**PATENT OWNER CARDIACSENSE'S
PRELIMINARY RESPONSE**

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Patent Owner's Exhibit List

Exhibit No.	Description
2001	Decision denying <i>Inter Partes</i> Review, IPR2016-00436, Paper No. 12
2002	Decision denying Motion to Dismiss, <i>Cardiacsense LTD v. Coros Wearables, Inc.</i> , Case No. 2:24-cv-11011, U.S. District Court Central District of California, DE #43

I. INTRODUCTION

Pursuant to 35 U.S.C. §313 and 37 C.F.R. §42.107, Patent Owner Cardiacsense Ltd. ("Patent Owner") respectfully submits the following Patent Owner's Preliminary Response ("Preliminary Response") to the petition for *inter partes* review ("Petition") of claims 1-8 and 10-16 of U.S. Patent No. 7,980,998 to Shemesh *et al.* (the '998 Patent", Exhibit 1001), Case No. IPR2025-00195. On December 12, 2024, the Board mailed a Notice of Filing Date Accorded to Petition. As this Preliminary Response is being submitted March 11, 2025, Patent Owner's Preliminary Response is timely pursuant to 37 C.F.R. §§1.7, 42.1, 42.107.

Petitioner's IPR is procedurally flawed and substantively meritless. The petition improperly relies on a § 112 challenge, which is outside the scope of IPR proceedings. Notwithstanding Petitioner's 112 challenge, the '998 patent is entitled to a priority date of September 11, 2006, based on the priority disclosures. As a result, the majority of Petitioner's cited references (Downey, MacIntosh, Burton, Takahashi, Ohgi) fail to qualify as prior art due to their filing dates after September 11, 2006, or due to insufficient evidence of public availability (in the case of Ohgi).

II. OVERVIEW OF THE '998 PATENT

The '998 patent is directed toward a personal device having specific recited components and specific functional interactions for measuring, processing analyzing and displaying data of training activity of a trainee in a manner not achievable by a human.¹ The '998 patent solves the problem of facilitating enhanced communication during a training activity that is inhibited by inherent physical communication barriers. *See* '998 patent at 3:57-64. For example, when a swimmer engages in a training session, inherent physical communication barriers exist because the swimmers are at least partially and intermittently submerged underwater during swimming. *Id.* This problem becomes exacerbated when a group of swimmers engage in a training session together. Monitoring and coaching a plurality of swimmers on their technique while each swimmer is moving underwater is nearly impossible even if each swimmer has an individual trainer assigned to watch and coach him.

The '998 patent provides an inventive personal device to solve these problems. The personal device includes an attachable sensing unit adapted to repeatedly measure, during the training activity, parameters (for example linear and angular acceleration) associated with movement of the trainee's body part. *Id.*

¹ As confirmed by the United States District Court for the Central District of California in denying dismissal of the '998 patent based on 35 USC sec. 101, *see* EX2002.

at 3:65-4:14. The personal device is adapted to receive data from the sensing unit and calculate specific training activity such as instantaneous speed, hand or leg lifting, height of strokes, distance traveled for each stroke, and comparative results to other participants. *Id.* at 12:40-43, Fig. 5-7. The '998 patent provides multiple embodiments of how this specific training data can be relayed to trainees in real-time, such as through vibratory pulses or audio signal to earphones. *Id.* at 13:26-32; 13:52-58, Fig. 8. These unique parameters of measuring individual body part movement relative to another body part were not collected and calculated in prior art devices even when using similar sensors. The '998 patent discloses a novel use and implementation of such sensing devices. It reflects a clear novel technological implementation of measuring devices.

A. Priority Date of the '998 Patent

Each Challenged Claim of the '998 patent is supported by provisional application No. 60/843,422 and is entitled to its priority date of September 11, 2006. Petitioner's assertion that the "'315 and '422 Applications do not provide written description for a sensing unit including a compass" is improper and contrary to well-established case law that "a petitioner in an inter partes review ... is not permitted to assert a ground of unpatentability under 35 U.S.C. § 112." *Dexcwin Golabl, Inc. v. Aribex, Inc.*, IPR2016-00436, Paper 12 (PTAB July

7, 2016). Moreover, Petitioner's allegation that neither the '422 Provisional Application nor the '315 PCT Application disclose a compass is simply wrong.

Finally, none of Petitioner's cited art references of Downey, MacIntosh, or Burton, qualify as prior art because there were not publicly available prior to the September 11, 2006 prior art date of the '998 patent. As a result, none of the asserted grounds in the Petition (which all rely on some combination of these references) should be instituted. The entire petition should be rejected on this basis alone.

i. Improper § 112 Challenge

The Petition is improper because it impermissibly relies on a ground of unpatentability under 35 U.S.C. § 112 not available in IPR proceedings, contrary to the Patent Trial and Appeal Board's (PTAB) holding in *Dexcowin Global, Inc. v. Aribex, Inc.*, IPR2016-00436, Paper 12 (PTAB July 7, 2016). In *Dexcowin*, the PTAB made clear that "a petitioner in an inter partes review... is not permitted to assert a ground of unpatentability under 35 U.S.C. § 112." This restriction aligns with the statutory scope of IPR proceedings, which limits challenges to patent validity to prior art-based grounds under 35 U.S.C. §§ 102 and 103. *See* 35 U.S.C. § 311(b). Issues under § 112, including the adequacy of written description, are outside the PTAB's jurisdiction in an IPR.

Here, the petitioner explicitly invokes a § 112 issue (while avoiding naming the statute) by arguing that:

“the '315 and '422 Applications do not provide written description support for a personal device with a sensing unit including a compass for measuring movement during a training activity.” Pet. at 5.

This contention directly challenges the sufficiency of the written description in the priority applications under § 112(a) by asserting that the challenged claims of the '998 Patent cannot claim priority to the filing dates of the '315 or '422 Applications as a result. Patent Owner maintains that the written description of the priority application does clearly support the compass recited in the issued claims. Petitioner then uses this alleged § 112 deficiency to improperly shift the priority date of the '998 Patent to March 11, 2009. By framing the priority dispute in terms of inadequate written description—a quintessential § 112 inquiry—the petitioner introduces a ground that the PTAB expressly prohibits in IPR proceedings.

While priority disputes can arise in IPRs when determining the applicability of prior art under §§ 102 or 103, such disputes must be resolved based on the effective filing date supported by the patent's disclosure, not through a substantive § 112 analysis. The petitioner's reliance on *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1296 (Fed. Cir. 2002), does not alter this conclusion, as that case addressed priority in the context of district court litigation, not the limited

scope of IPRs. The petitioner's attempt to embed a written description challenge within its priority assertion exceeds the PTAB's authority, rendering the petition improper.

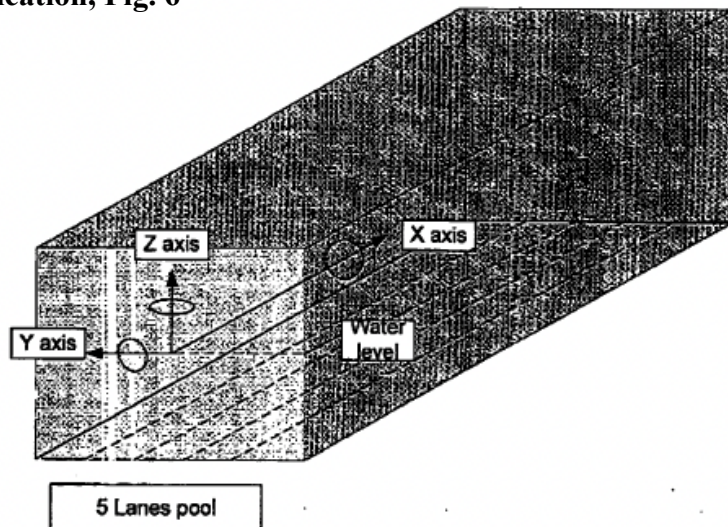
Consequently, the PTAB should decline to institute review. Because Petitioner's prior art challenges under §§ 102 or 103 are contingent upon the resolution of this impermissible § 112 argument—i.e., the determination of the disclosures of the priority applications—then the petition as a whole fails to present a valid basis for institution and should be denied outright. At a minimum, any § 112-based contentions must be disregarded as beyond the scope of IPR proceedings.

ii. Disclosure of the Priority Documents

The disclosure of each application relied upon for priority must reasonably convey to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date sought. *See* 35 U.S.C. § 120; *Arthrex, Inc. v. Smith & Nephew, Inc.*, 35 F.4th 1328, 1343 (Fed. Cir. 2022). Earlier applications satisfy the enablement requirement only if one skilled in the art, after reading their disclosures, could practice the invention (make and use the full scope of the invention) claimed in the later-filed patent without undue experimentation. *See Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997).

Here, the '422 provisional application conveys to one skilled in the art, at the time of the disclosure, the use of all the sensors claimed in the patent i.e (sensing unit, accelerometer, compass, gyroscope, etc.). Petitioner incorrectly asserts that the use of a compass to measure swim direction is absent from the '422 application. Reference is made to Fig 6 and to the text adjacent to Fig 6 which explains the figure.

'422 Application, Fig. 6



10 Fig 6. is a schematic view of a 5 lanes pool. The XYZ axes are viewed with X pointing in the swimming direction, Y in the cross movement axis on the same plane with the X axis and Z which is perpendicular to X and Y defines the height (usually the origin of axes lays in the center of each lane at the water level). If gyroscopes are added, they will measure circular movements with regard to the limb
15 they are attached to. In case the limb is the head and the swimmer is a crawl swimmer, the gyroscope will measure the circular turns of the head which are perpendicular to the X axis.

Fig. 6 depicts a schematic view of a 5-lane pool with X, Y, and Z axes for analyzing swimmer movement. As stated in the text *“The XYZ axes are viewed with X pointing in the swimming direction.”* One of ordinary skill would

understands that measuring swimming direction is part of the tracking device and that measurement of direction, before the addition of a gyroscope ("If gyroscopes are added . . .") requires a compass. Also, one would connect the use of gyroscopes and orientation tracking to the disclosure of a compass via the coordinate system and orientation. This would not have required undue experimentation and one of ordinary skill would have recognized the disclosure of a compass from the '422 provisional application.

Fig. 6 discloses a 3D Cartesian coordinate system (X, Y, Z axes) to describe spatial orientation and movement within the pool. One of ordinary skill would recognize a compass is a navigational tool that typically relies on detecting the Earth's magnetic field to determine direction (usually relative to magnetic north).

One of ordinary skill would also recognize that the X-axis, described as pointing in the "swimming direction," is referring to a directional reference based upon the orientation of the pool (i.e. north or south on a compass). Additionally, the text mentions adding gyroscopes to measure circular movements of a swimmer's limbs, head, and torso with respect to the X-axis. Gyroscopes are sensors that detect angular velocity and orientation, which are compatible with electronic compasses in inertial navigation systems.

Alternatively, one of ordinary skill would understand that a gyroscope, which is integrated into this system, can be used to determine compass orientation or heading, by pairing with a magnetometer to create a compass. Just as the coordinate system and gyroscopes track orientation and movement in the pool, a compass tracks orientation relative to a global reference. Here, the swimming direction is a global reference from which the other directions are measured relative.

Accordingly, the Petition should be denied in its entirety because it contains an improper 112 argument. Notwithstanding this, the '998 patent clearly claims priority to the original filing date of the '422 provisional application because the '422 application discloses to one of ordinary skill the use of a compass in the invention. Thus, each of the claims of the '998 patent is entitled to a priority date of September 11, 2006. Based on the priority date of the '998 patent, none of Downey, MacIntosh, Burton, or Takahashi qualify as prior art because they were all filed after September 11, 2006.

Patent Owner respectfully requests the Board deny the Petition on the grounds of an improper 112 challenge and confirm the September 11, 2006 priority date of the '998 patent.

III. LEVEL OF SKILL IN THE ART

For the purposes of this Preliminary Response only, Patent Owner does not dispute the level of skill identified in the Petition (Petition at 6) because the prior art fails to invalidate under any possible level of skill. Patent Owner reserves the right to dispute the level of ordinary skill in Patent Owner's Response, should institution be granted.

IV. CLAIM CONSTRUCTION

Petitioner alleges there is ambiguity in the recitation of “each of the measurements” in claims 1 and 8. Patent owner submits there is no ambiguity. Petitioner alleges “means for attaching” is a means-plus-function claim. Patent owners submits that there is no need to limit the term as proposed by Petitioner. Importantly, Patent owner submits that claim construction is unnecessary at this stage because the prior art fails to invalidate under any reasonable construction of the claims. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

V. THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS OF ANY GROUND

A. Ground 1: Downey does not qualify as prior art and cannot form the basis of an obviousness rejection under pre-AIA 35 U.S.C. § 103

Downey has a filing date of May 29, 2008. As discussed in detail above, the '998 patent is entitled to a priority date of September 11, 2006. Thus, Downey is not prior art against the '998 patent and each ground which relies upon Downey must be denied.

B. Grounds 2-3 and 5 fail for the same reasons as Ground 1

Grounds 2-3 and 5 all rely on combining a secondary reference under Section 103 with Downey, which is not a qualifying prior art reference to the '998 patent. For this reason alone, each of Grounds 2-3 and 5 should be denied.

Moreover, MacIntosh and Burton, which Grounds 2 and 3 rely on, respectively, also do not qualify as prior art as each was filed after the September 11, 2006 priority date. MacIntosh was filed May 16, 2008 and Burton claims priority to December 17, 2009. Thus, neither of these references qualify as prior art because they were filed after the '998 priority date of September 11, 2006. For these reasons as well, Grounds 2-3 should be denied.

C. Ground 4 and 5: Ohgi was not publicly available prior to September 11, 2006

Petitioner has failed to establish that Ohgi is prior art against the '998 patent. Petitioner alleges that Ohgi was publicly available no later than July 22, 2003 and relies on the November 18, 2024 declaration of June Ann Munford [EX1031] as support. Pet. at 18. However, Munford's declaration fails to establish that Ohgi

was publicly available prior to September 11, 2006 because the declaration does not state that the document was publicly available, but instead indirectly relies on a conference program called “*Proceedings of the International Society of Biomechanics XIXth Congress: the Human Body in Motion*” allegedly catalogued in the University of Otago library. EX1031, ¶ 8. There is no assertion that the Ohgi paper was also catalogued, only unsupported supposition.

There are numerous problems with Petitioner's declaration of Ohgi's alleged public date. First, there is no direct evidence that Ohgi was publicly available prior to September 11, 2006. Petitioner's circumstantial evidence is that a different and separate document (the Proceedings of the International Society of Biomechanics program) was available in the library on July 22, 2003. But the program is not the Ohgi publication. Moreover, just because Ohgi's name is listed in a program does not mean Ohgi actually presented or that the publication was available on the alleged date of the conference. Nor does it mean that, if present, the information that Ohgi presented was the same information found in the published document Petitioner relies on here. One can imagine many scenarios where Ohgi did not present or was at the conference, but the publication was not made publicly available.

It is equally plausible that Ohgi was a scheduled presenter, but did not actually attend the conference. It may also be the case that Ohgi's conference presentation was of more limited scope, such as describing results but not apparatus or procedure. Or, perhaps Ohgi discussed preliminary results but had not put his research into written format. There are more equally plausible explanations for why the recitation of Ohgi's name on the conference program does not suffice as proof that Ohgi presented the same material as in the later dated paper on which Petitioner relies.

Munford's declaration does not establish that the Ohgi reference itself was publicly available on the date of the conference. It simply establishes that a conference program, which allegedly references a presentation by Ohgi, was catalogued in the library at some point. This is far from sufficient evidence to establish a prior art date of the Ohgi publication. Petitioner has failed to meet its burden of showing that the Ohgi publication was publicly available prior to the priority date.

Here, in comparison to *In re Hall*, the Ohgi publication was **not** indexed or shelved in a library, which might lend credence to Petitioner's theory. *In re Hall*, 781 F.2d 897, 228 USPQ 453 (Fed. Cir. 1986). There is no case law that supports Petitioner's contention that because a document in a library merely references a

presentation that *may have* included the contents of a different non-document, that publication of the other document is thereby proved by being mentioned in that other document. There is no proof that the actual reference was sufficiently available to the public at any time prior to the priority date.

Moreover, the Ohgi reference could not have been found by one of ordinary skill because it was not indexed. This is similar to *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773, USPQ2d 1507, 1514 (Fed. Cir. 2018), where the court agreed with the Board that an electronic technical report did not constitute a “printed publication” because an interested skilled artisan, using reasonable diligence, would not have been able to find the technical report on the CSE Technical Reports Library website despite some indexing and search functionality on the website that permitted technical accessibility. Like *Acceleration Bay*, the Ohgi reference would not have been discoverable even with reasonable diligence even though it was the conference program that was indexed, not the Ohgi reference. Had one come across the *Proceedings of the International Society of Biomechanics* on July 22, 2003, they would not have had a copy of Ohgi nor any of the information presented therein.

Accordingly, Petitioner has failed to establish that Ohgi is prior art against the '998 patent. Grounds 4 and 5 which rely on Ohgi must be denied because

Petitioner has failed to carry its burden of proving Ohgi's publication date and accessibility to the public.

Thus, Grounds 1 – 5 fail for the reasons noted above and are fatally deficient. Patent Owner respectfully submits institution of an *inter partes* review proceeding on these Grounds should be denied.

VI. CONCLUSION

For at least the foregoing reasons, the Petition has failed to show that any claim is invalid, and the Board should deny the Petition.

Respectfully submitted,

Dated: March 11, 2025

By: /Erik N. Lund/
Erik N. Lund (Reg. No. 77,473)
Counsel for Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), this is to certify that on this 11th day of March, 2025, I caused a true and correct copy of the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** to be served by e-mail on the following counsel of record (as agreed in the Service Information section of the Petition):

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Date: March 11, 2025

Respectfully submitted,

By: /Erik N. Lund/
Erik N. Lund (Reg. No. 77,473)

CERTIFICATE OF COMPLIANCE

This preliminary response complies with the word count limits set forth in 37 C.F.R. § 42.24(a)(1)(i) & (b)(1), because this preliminary response contains 3,058 words, excluding the parts of the preliminary response exempted by 37 C.F.R. § 42.24(a)(1) and determined using the word count provided by Microsoft Word, which was used to prepare this preliminary response.

Dated: March 11, 2025

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