UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GARMIN INTERNATIONAL, INC.,
Petitioner

v.

CARDIACSENSE LTD.,
Patent Owner

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

PATENT OWNER'S SUR-REPLY TO
PATENT OWNER'S PRELIMINARY RESPONSE

Patent Owner's Preliminary Response ("POPR") (Paper 6) demonstrates that the '(998 Patent is entitled to the priority date of the '422 Application, which is fully and clearly supported by evidence. And, Petitioner's Reply to the POPR confirms that the priority claim is supported by the disclosure.

Petitioner's Reply (Paper #8) acknowledges that the priority application (Ex. 1004, Fig 6 and the accompanying text) teach that the device needs to know "the X [axis] pointing in the swimming direction." (Ex. 1004 at p. 11, line 10.) It is apparent that the patent is teaching that the direction of swimming (X-axis) is to be determined by a compass or other means which measure the direction relative to a fixed or known direction, such as North. Without that reference (to North, e.g.) there is no way to define the X-axis (or any other axis) with a consistent reference and thus with any degree of accuracy. As the swimmer moves his arm, the accelerometer changes orientation and with it the X-axis, causing increasing complexity in the device being able to recognize the "true" X direction. For example, without the fixed reference (via compass) a deficiency in the swimmer's stroke that causes the swimmer's arm to not swing along the expected line could cause the swimmer to drift significantly off-course. Reference to an external ordinal system to recognize the swimmer's drift is necessary to capture meaningful measurement.

Likewise, the Petitioner's argument that movement along all three axes can be determined without a compass is a vast oversimplification of the concepts disclosed in the patent. In order to take advantage of the invention, the user must have accurate and precise measurements of the swim strokes. It is not enough just to have a vague idea of the direction of movement along the three axes. Instead, the user has to know with considerable certainty at

each instance of measurement, not just the general direction the arm (or leg, or head) is moving, but exactly which direction it is moving, how much it is moving, and how that direction changes at each instance. (*See, e.g.,* Ex. 1001 at 9:50-67.) Without reference to a fixed ordinal system, such as provided with a compass, the requisite detail is not provided. In addition, any measurement of accelerometers and gyroscopes will require constant recalibration. Without a fixed external reference, as provided by a compass, the orientation of the X-axis will drift. A compass is needed and taught to recalibrate that drift.

Petitioner's argument that "it is the accelerometer aligned with the swimming direction and can sense movement ***only*** along this axis" further reenforces the evidence that a reference direction must be known, otherwise there is no way for the accelerometer to know which direction is X.

Contrary to the assertion of Petitioner, nothing in column 10 of the patent describes an embodiment without a compass that can measure all necessary parameters. The specification does not say that the embodiment does not include a compass and it is error to assume as much. Rather, the specification clearly states that the cited discussion of sensors 11 is "a more detailed description" of "sensing unit 11." The specification describes "sensing unit 11" as "adapted to measure any such parameter(s) P, as will be further detailed below." (Exh. 1001 at 7:59-60.) And, as "further detailed below," column 10 of the Patent discusses the need for a compass to provide relative orientation for swimming: "whose advantage is in that its measurements are provided relative to the earth electromagnetic field as an external reference point (outside the sensor)." (Ex. 1001 at 10:50-53.)

Patent Owner asserts that the disclosure of a compass is clearly understood from a

reading of the disclosure and the need for a consistent reference point which in turn provides consistent measurable data relating to the swimmer's movement. Patent Owner believes that the specification is sufficiently clear on this point; however, Patent Owner reserves the right to submit evidence from expert testimony and from a person or ordinary skill in the art in support of Patent Owner's Response, should one be necessary.

Dated: April 4, 2025

Respectfully submitted,

By: /s/ *Benjamin C. Deming*

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CERTIFICATE OF SERVICE ON PETITIONER
UNDER 37 C.F.R. § 42.105

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on April 4, 2025, a true and correct copy of the foregoing PATENT OWNER'S SUR-REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE was served electronically on counsel for Patent Owner at the following addresses

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Dated: April 4, 2025

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