

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUM INDUSTRIAL TECHNOLOGY, INC.,
Petitioner,

v.

AMSTED RAIL COMPANY, INC.,
Patent Owner.

IPR2023-00540
Patent 10,137,915 B2

Before JAMES P. CALVE, KEVIN W. CHERRY, and MICHAEL L. WOODS,
Administrative Patent Judges.

CHERRY, *Administrative Patent Judge.*

PRELIMINARY GUIDANCE
PATENT OWNER'S MOTION TO AMEND

I. INTRODUCTION

On August 11, 2023, we instituted trial as to claims 1, 21–30, 36, and 37 of U.S. Patent No. 10,137,915 B2 (“the ’915 patent”). Paper 10 (“Inst. Dec.” or “Decision”). After institution, Patent Owner filed a Motion to Amend that is contingent on the patentability of claims 1, 21–30, 36, and 37. Paper 16 (“Motion” or “Mot.”). Petitioner filed an Opposition on January 26, 2024. Paper 19 (“Opposition” or “Opp.”)

In the Motion, Patent Owner requested that we provide preliminary guidance concerning the Motion in accordance with the Board’s pilot program concerning motion to amend practice and procedures. Mot. 1; *see also Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board*, 84 Fed. Reg. 9,497 (Mar. 15, 2019) (providing a patent owner with the option to receive preliminary guidance from the Board on its motion to amend) (“Notice”). We have considered Patent Owner’s Motion and Petitioner’s Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review and whether Petitioner (or the record) establishes a reasonable likelihood that the substitute claims are unpatentable. *See* Notice, 84 Fed. Reg. at 9,497 (“The preliminary guidance . . . provides preliminary, non-binding guidance from the Board to the parties about the [motion to amend]”); *see also* 35 U.S.C. § 316(d) (statutory requirements for a motion to amend); 37 C.F.R. § 42.121 (regulatory requirements and burdens for a motion to amend); *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-

01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) (providing information and guidance regarding motions to amend).

For purposes of this Preliminary Guidance, we focus on the proposed substitute claims, and specifically on the amendments proposed in the Motion. *See* Notice, 84 Fed. Reg. at 9,497. We do not address the patentability of the originally challenged claims. *Id.* Moreover, in formulating our preliminary views on the Motion and Opposition, we have not considered the parties' other substantive papers on the underlying merits of Petitioner's challenges. We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including any revision to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision. *See id.* at 9,500.

II. PRELIMINARY GUIDANCE

A. Statutory and Regulatory Requirements

For the reasons discussed below, at this stage of the proceeding, and based on the current record, it appears that Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend.

1. Reasonable Number of Substitute Claims

Does Patent Owner propose a reasonable number of substitute claims? (35 U.S.C. § 316(d)(1)(B))
Yes, Patent Owner proposes no more than 1 substitute claim for each challenged claim. Patent Owner proposes to substitute claims 1, 21–26, 29, 30, 36, and 37 (eleven claims) with claims 38 through 48 (eleven claims). ¹

¹ Patent Owner does not propose substitute claims for claims 27 and 28.

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2. Respond to Ground of Unpatentability

Does the Motion respond to a ground of unpatentability involved in the trial? (37 C.F.R. § 42.121(a)(2)(i))
Yes. Patent Owner responds to the grounds of unpatentability. Mot. 4. At least one amendment presented is responsive to a ground of unpatentability. Petitioner does not argue otherwise.

3. Scope of Amended Claims

Does the amendment seek to enlarge the scope of the claims? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))
No. Each of the proposed substitute claims includes narrowing limitations. Mot. 4. For example, proposed substitute independent claim 38 further narrows the claimed sensor to be a tri-axis sensor. Petitioner does not argue otherwise.

4. New Matter

Does the amendment seek to add new subject matter? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))
No. On this record, we find Patent Owner has set forth written description support for the proposed amendments at Motion 5–15. For example, the proposed amendment for independent substitute claims 38, 46, and 47 changes “sensors” to “wireless sensor nodes.” The ’915 patent discloses “A wireless sensor node (‘WSN’).” Ex. 1001, 4:47. The independent claims further define the sensor as a “tri-axis” sensor. The ’915 patent discloses that “accelerometer 404 passes data on to three sensor sections” and that each section “selects data from the longitudinal direction,” the “lateral direction,” or the “vertical direction.” Ex. 1001, 13:37–51. We agree that this appears to provide support for a tri-axis sensor. Petitioner does not identify any particular limitations for which support is lacking.

B. Patentability

For the reasons discussed below, at this stage of the proceeding, and based on the current record,² it appears that Petitioner (or the record) has shown a reasonable likelihood that proposed substitute claims 38–48 are unpatentable.

Does the record establish a reasonable likelihood that the proposed substitute claims are unpatentable?

Yes, as to claims 38–48. On this record, it appears that Petitioner (or the record) has shown a reasonable likelihood that claims 38–48 are unpatentable as obvious.
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Petitioner sets forth seven grounds of unpatentability under 35 U.S.C. § 103(a). Opp. 1–2.
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Ground 1: Claims 38, 40, 42, 43, and 45–48 based on Armitage ³ and Barone. ⁴
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Ground 2: Claims 38, 40, 42, 43, 45–48 based on Armitage, Barone, and Leitel. ⁵
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Ground 3: Claim 39 based on Armitage, Barone, LeFebvre, ⁶ and Leitel.
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Ground 4: Claims 41 and 44 based on Armitage, Barone, Leitel, and Winfree. ⁷

Ground 5: Claims 38, 39, 40, 42, 43, 45–48 based on LeFebvre, Barone, and Armitage.

Ground 6: Claims 38, 39, 40, 42, 43, 45–48 based on Lefebvre, Barone, Armitage, and Leitel.

² We express no view on the patentability of original claims 1, 21–30, 36, and 37 in this Preliminary Guidance. Instead, we focus on limitations added to those claims in the Patent Owner’s Motion to Amend.

³ US 2011/028540 A1, published Nov. 17, 2011 (Ex. 1006, “Armitage”).

⁴ US 2007/0208841 A1, published Sept. 6, 2007 (Ex. 1007, “Barone”).

⁵ US 2011/0231039 A1, published Sept. 22, 2011 (Ex. 1029, “Leitel”).

⁶ US 2007/0152107 A1, published July 5, 2007 (Ex. 1005, “LeFebvre”).

⁷ US 7,706,213 B2, issued Apr. 27, 2010 (Ex. 1008, “Winfree”).

Ground 7: Claims 41 and 44 based on LeFebvre, Barone, Armitage, and Winfree.

Armitage, Barone, LeFebvre, and Winfree were cited previously as discussed below.

Leitel is a newly cited reference as further discussed below.

Claims 38, 46, and 47 are independent. Petitioner addresses new limitations of claims 38–48 not previously addressed for claims 1, 21–30, 36, and 37 below, and groups together Grounds 1, 2 5, and 6, all of which discuss the independent claims. Opp. 3–24. Petitioner cites to the Declaration of Steven Ricca, which was filed with and in support of the Opposition. Ex. 1028.

Claim 38

Limitation 38(b) changes “sensors” to “wireless sensor nodes” and specifies that configured to measure accelerations of the railcar is “along a plurality of axes comprising a first axis extending along a length of the railcar, a second axis extending across a width of the railcar, and a third axis extending along a height of the railcar”

Petitioner asserts that “Armitage discloses a railcar monitoring system comprising a plurality of sensor nodes,” that “communicate wirelessly” and that “may comprise an accelerometer.” Opp. 4–5 (citing Ex. 1006 ¶¶ 4, 12, 14–16, 20, 25–27, 29–31, 33–35, 45, 46, 50, 53, 56, Figs. 1, 3, 5; Ex. 1028 ¶ 21). Petitioner also asserts that Armitage discloses that the accelerometer may be “a three-dimensional accelerometer, such as a solid state accelerometer device.” *Id.* at 5 (citing Ex. 1006 ¶ 45).

Alternatively, Petitioner asserts that LeFebvre “discloses a wireless system” that “includes a multiplicity of instrumented pads (i.e., wireless sensor nodes),” which “may include a variety of sensors, including accelerometers.” *Id.* at 5–6 (citing Ex. 1005 ¶¶ 6, 21, 24–26, 31–32, Fig. 1; Ex. 1028 ¶¶ 23–24). According to Petitioner, although LeFebvre does not disclose a triaxial accelerometer, as claimed, LeFebvre discloses that its communication management unit may comprise “a triaxial accelerometer . . . for triggering certain analysis modes.” *Id.* at 6. Based on this disclosure and in light of Armitage’s disclosure that a triaxial accelerometer is capable of monitoring a wider variety of conditions, Petitioner posits that an ordinary artisan would have selected “a triaxial accelerometer for use in LeFebvre’s sensor nodes due to its simplicity, ease of installation, and cost-effectiveness.” *Id.* at 7. Petitioner’s

assertions are supported by the testimony of Mr. Ricca as to this limitation. Ex. 1028 ¶¶ 23–27.

At this preliminary stage of the proceeding, we agree with Petitioner. Armitage discloses “accelerations monitored by the 3-D accelerometer,” in which “vibration is monitored along a single axis, such as a z-axis aligned with the axle of a particular wheel or wheel assembly,” and “including an x-axis aligned with the horizontal and a y-axis aligned with the vertical with respect to the railway car or wheel.” Ex. 1006 ¶ 45. In addition, because the LeFebvre grounds (Grounds 5 and 6) also include Armitage, Petitioner has shown a reasonable likelihood that limitation 38(b) is disclosed or suggested by the combined teachings of LeFebvre and Armitage. At this stage of the proceeding, we are persuaded by the testimony of Mr. Ricca as to this limitation.

Limitation 38(c): “one or more sensor sections . . . comprise a plurality of filters that are each configured to filter at least a portion of the accelerations by receiving an output signal directly from the tri-axis sensor and selecting ones of the accelerations in the output signal that were measured in a dimension represented by a respective axis of the plurality of axes”

Petitioner asserts that “Armitage’s preferred embodiment processes the output of the three-dimensional accelerometer—selecting data corresponding to one axis and ignoring or discarding data corresponding to the other two axes—is precisely the type of filtering that is encompassed by Limitation 38(c).” Opp. 8–9. Petitioner asserts that contrary to Patent Owner’s assertion that isolating vibrations for a single axis teaches away from the claimed triaxial filtering, an ordinary artisan would have viewed Armitage as pertinent to each axis, “because each axis was known to be associated with one or more common problem conditions on a railcar.” *Id.* at 10–11 (citing Ex. 1005 ¶¶ 54, 61–62; Ex. 1029 ¶¶ 64, 66; Ex. 1028 ¶¶ 31–32). Petitioner asserts, moreover, that monitoring three axes would also be a mere duplication of parts. *Id.* at 11. Additionally, Petitioner asserts that Barone teaches conditioning the output of an accelerometer and uses “high-pass, low-pass, and/or band-pass filters to remove unwanted data and/or amplify particularly relevant accelerations data (e.g., using software running on micro-controller 177).” *Id.* at 12 (citing Ex. 1007 ¶¶ 114–116, 172–185, Fig. 8; Ex. 1028 ¶¶ 35–36).

Alternatively, Petitioner asserts that Leitel “discloses monitoring acceleration data corresponding to each of the x-, y-, and z-axes” as part of

a wireless system for monitoring railcars. *Id.* at 13–14 (citing Ex. 1029 ¶¶ 4, 10, 13, 35, 44, 56, 60, 62, 66, 71, 73, 77, 122, 125, 128, 134, 151–164; Ex. 1028 ¶¶ 39–41). Petitioner asserts that Leitel’s data is filtered, and that Leitel discloses that it is “desirable to filter out vibrations or disturbances that are unrelated to the conditions being monitored.” *Id.* at 15–16 (citing Ex. 1029 ¶ 28). According to Petitioner, Leitel’s disclosure is relevant to “monitoring accelerations collected by the tri-axis accelerometer,” because Leitel explains that “acceleration sensors can be used to determine vibrations.” *Id.* at 16 (citing Ex. 1028 ¶¶ 44–45, 91–93).

As to Grounds 5 and 6, Petitioner asserts that LeFebvre’s disclosure of a triaxial accelerometer (Ex. 1005 ¶ 37) coupled with the disclosure of sensors to “detect longitudinal, lateral and yawing forces” (*id.* ¶ 62), suggests “analyzing accelerations along the x, y, and z axes as measured by a triaxial accelerometer.” Opp. 17–18. Petitioner’s assertions are supported by the testimony of Mr. Ricca as to this limitation. Ex. 1028 ¶¶ 47–53.

At this preliminary stage of the proceeding, we agree with Petitioner. In the Petition, Petitioner had equated Armitage’s “sampling” to the claimed “filtering.” Pet. 25. In the Decision, we determined that “merely sampling data, as taught in Armitage, is not the claimed filtering.” Inst. Dec. 25. However, Petitioner now relies on a different portion of Armitage, and Patent Owner’s limitation 38(c) appears to amend original claim 1 consistent with the disclosure in Armitage upon which Petitioner now relies. Specifically, limitation 38(c) recites, “selecting ones of the accelerations in the output signal that were measured in a dimension represented by a respective axis of the plurality of axes.” We agree with Petitioner that Armitage’s disclosure that “vibration is monitored along a single axis, such as a z-axis aligned with the axle of a particular wheel or wheel assembly, and vibrations in other axes are ignored” is selecting one of the axes, namely, the z-axis. That Armitage ignores the other data is irrelevant, because the data (from a 3-D accelerometer) is still there, but is being ignored. As to Barone, we disagree with Patent Owner that Barone is limited to the particular accelerometer disclosed therein. Mot. 18–19. Petitioner is relying on the filtering technique of Barone, and does not propose to use the specific accelerometer of Barone in Armitage’s system. Opp. 12–13. In addition, Petitioner adds Leitel, which discloses as “outputs three

signals SX, SY and SZ associated with the axes (3-dimensional sensor)” for which “certain error signals (blockage of the wheels) could be calculated and/or transmitted with time designations such as point of time and/or duration of the error.” Ex. 1029 ¶¶ 122, 125. Leitel also discloses that a movement sensor “determines a movement value, which is filtered and evaluated in order to block out simple vibrations or disturbances.” *Id.* ¶ 28. Thus, the newly formulated grounds based on Armitage, in conjunction with the disclosure of Barone or the disclosure of newly cited Leitel, appear to disclose this limitation. For Grounds 5 and 6, we agree with Petitioner that LeFebvre’s disclosure of sensors that “detect longitudinal, lateral, and yawing forces” (Ex. 1005 ¶ 62) suggests three-dimensional monitoring. Opp. 17–19. We also find persuasive the testimony of Mr. Ricca as to this limitation.

Accordingly, for the foregoing reasons, Petitioner has shown a reasonable likelihood that the newly added limitations of proposed substitute claim 38 are disclosed or suggested by the combined teachings of Armitage and Barone, or Armitage, Barone, and Leitel. Given that Petitioner also includes the teachings of Armitage and Barone in Ground 5 and additionally Leitel in Ground 6, at this stage of the proceeding, Petitioner has shown a reasonable likelihood that the limitations of proposed substitute claim 38 are disclosed or suggested by the combined teachings of LeFebvre, Barone, and Armitage, or LeFebvre, Barone, Armitage, and Leitel.

Independent Claims 46 and 47

Petitioner asserts that claims 46 and 47 include similar limitations to those discussed for claim 38, and that “Patent Owner acknowledges that ‘[claims 46 and 47 are] limited similar to independent substitute claim 38.’” Opp. 20–21 (citing Mot. 20).

Dependent Claims 39–45 and 48

Petitioner asserts that “Patent Owner has not identified any features of dependent claims 39–45 or 48 that patentably distinguish the prior art, beyond the features of the independent claims from which they depend.” Opp. 21. According to Petitioner, the limitations added by dependent claim 39, 40, 42, 43, 45, and 48 are disclosed by Armitage and Barone, by Armitage, Barone, and LeFebvre, or by LeFebvre and Barone. Opp. 21–24.

Petitioner asserts that the limitations added by dependent claims 41 and 44 are disclosed by Armitage, Barone, and Winfree, or by LeFebvre, Barone, Armitage, and Winfree. Opp. 22–23.

At this juncture of the proceeding, we are persuaded that Petitioner has shown a reasonable likelihood that claims 38–40, 42, 43, and 45–48 are unpatentable over Armitage, Barone, and Leitel or over LeFebvre, Barone, Armitage, and Leitel. We also are persuaded that Petitioner has shown a reasonable likelihood that claim 39 is unpatentable over Armitage, Barone, LeFebvre, and Leitel, and that claims 41 and 44 are unpatentable over Armitage, Barone, Leitel, and Winfree or LeFebvre, Barone, Armitage, and Winfree.

We acknowledge that Patent Owner has not yet had the opportunity to address Petitioner’s contentions in regards to proposed substitute claims 38–48. In particular Patent Owner has not had the opportunity to address Leitel, or the Opposition Declaration of Mr. Ricca in support of Petitioner’s Opposition (Ex. 1028), which were filed with and relied on in Petitioner’s Opposition. Opp. 2–24. Patent Owner will have the opportunity to do so in its Reply to Petitioner’s Opposition (or in a revised motion to amend) in this proceeding.

III. CONCLUSION

This concludes the Preliminary Guidance, which is Patent Owner’s first option under the Board’s pilot program. Notice, 84 Fed. Reg. at 9,497. Patent Owner has an additional option under the Board’s pilot program to file a revised MTA by DUE DATE 3. Paper 11.

In addition to those two options under the Board’s pilot program, Patent Owner is reminded that amendments of the challenged claims may also be pursued in a separate reissue or reexamination proceeding before, during, or after an AIA trial proceeding, including subsequent to the issuance of the Final Written Decision. We draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019).

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If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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