

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PRECISION CANCER TECHNOLOGIES INC.,
Petitioner,

v.

ONCOUSTICS INC.,
Patent Owner.

IPR2025-00242
Patent 11,602,330 B2

Before MONICA S. ULLAGADDI, DAVID COTTA, and
MARY C. HOFFMAN, *Administrative Patent Judges*.

COTTA, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

On November 27, 2024, Precision Cancer Technologies Inc. (“Petitioner”)¹ filed a Petition to institute *inter partes* review of claims 1–20 of U.S. Patent No. 11,602,330 (Ex. 1001, “the ’330 patent”). Paper 2 (“Pet.” or “Petition”). Oncoustics Inc. (“Patent Owner”)² filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), *inter partes* review may not be instituted unless the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Petitioner has not established a reasonable likelihood of prevailing on its assertion that any of the challenged claims are unpatentable based on the grounds advanced here. Thus, for reasons explained below, we deny institution of *inter partes* review of claims 1–20 of the ’330 patent.

A. Related Matters

The parties identify U.S. Patent Application No. 18/620,419, a pending continuation application claiming priority from the ’330 patent, as a related matter. Pet. 3; Paper 5, 2.

B. The ’330 Patent

The ’330 patent relates to the use of “ultrasound for classification and identification of various physiological aspects of a living organism, including tissue and biomarker identification and classification.” Ex. 1001,

¹ Petitioner identifies itself as the real party-in-interest. Pet. 2.

² Patent Owner identifies itself as the real party-in-interest. Paper 5, 2.

1:20–23. The '330 patent describes “extracting, processing, and categorizing . . . normally-discarded information from the ultrasound RF [radio frequency] data,” which “can be analyzed using computer algorithms, such as ML [machine learning] or deep learning methods, to recover and reveal signal information that is beyond human perception.” *Id.* at 4:50–56. The use of “artificial intelligence/machine learning methods (‘ML’) to analyze the ultrasound data . . . allows for more accurate and specific classification and identification of tissue types and biomarkers related to tissue—including for disease states.” *Id.* at 5:4–11. The '330 patent explains that “applying the ML models to the raw data or the frequency spectrum data—rather than the images (e.g., B-mode) after processing—provides much more accurate results because the already heavily processed images have much of the important ultrasound data filtered out, including that which is useful for diagnosis and classification.” *Id.* at 5:11–19.

C. Challenged Claims

The '330 patent includes 20 claims, all of which are challenged in the Petition. Claim 1 is representative and reads as follows:

1. An ultrasound system comprising:
 - a transducer configured to output a single static set of raw ultrasound radio frequency (RF) data forming a single frame of a tissue area;
 - a memory containing machine readable medium comprising machine executable code having stored thereon instructions;
 - a signal processing unit comprising one or more processors coupled to the memory, the one or more processors configured to execute the machine executable code to the cause the one or more processors to:

receive the single static set of raw ultrasound RF data;
process the single static set of raw RF ultrasound data
with a machine learning model; and
output classification of the raw RF ultrasound data from
an output of the machine learning model.

Ex. 1001, 15:2–17.

D. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability in this
Petition (Pet. 5):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4, 5, 11, 14, 16	102 ³	Hope-Simpson ⁴
1, 2, 4, 5, 11, 14, 16	103	Hope-Simpson
3, 6–9, 12, 13, 15, 17–20	103	Hope-Simpson, Nair ⁵
10	103	Hope-Simpson, Nair, Azizi ⁶

Petitioner relies on the declaration of Dr. Naum Papanicolau, among
other evidence. Ex. 1002.

³ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Based on the earliest claimed priority date of the ’330 patent, i.e., December 12, 2017, we apply the AIA versions of §§ 102 and 103. *See* Ex. 1001, code (60), Pet. 5.

⁴ Hope-Simpson et al., International Publication No. WO 2018/127498 A1, published July 12, 2018 (Ex. 1005, “Hope-Simpson”).

⁵ Nair, U.S. Patent Publication No. US 2014/0180273 A1, published June 26, 2014 (Ex. 1006, “Nair”).

⁶ Azizi et al., *Detection and Grading of Prostate Cancer Using Temporal Enhanced Ultrasound: Combining Deep Neural Networks and Tissue Mimicking Simulations*, 12 Int’l Journal of Computer Assisted Radiology & Surgery 1293–1305 (2017) (Ex. 1007, “Azizi”).

II. PATENTABILITY ANALYSIS

A. Principles of Law

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)).

“A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Whether a reference anticipates is assessed from the perspective of an ordinarily skilled artisan. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003).

A claim is unpatentable as obvious “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *see KSR Int’l Co. v. Teleflex*

Inc., 550 U.S. 398, 406 (2007). The question of obviousness is resolved 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 ordinary skill in the art; and (4) objective indicia of nonobviousness when presented.⁷ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Person of Ordinary Skill in the Art (“POSA”)

In determining the level of skill in the art, we consider the problems encountered in the art, the art’s solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

Petitioner contends that a POSA would be:

an individual having a post-undergraduate degree, *e.g.*, Ph.D., in Electrical and Computer Engineering, Computer Science, Biomedical Engineering, Biomedical Physics, or a comparable discipline, and at least 2 years of experience relating to the design, operation, and functioning of imaging systems and detecting tissue abnormalities using quantitative ultrasound.

Pet. 9.

Patent Owner does not contest Petitioner’s definition of the level of skill in the art. Prelim. Resp. 7 (“For purposes of this Preliminary Response, Patent Owner applies Petitioner’[s] proposed definition.”).

⁷ The current record in this proceeding does not include any argument or evidence directed to objective indicia of nonobviousness.

Petitioner's definition appears to be consistent with the level of skill reflected in the prior art of record and the disclosure of the '330 patent. Accordingly, for purposes of this Decision, we adopt Petitioner's proposed definition of the person of ordinary skill in the art.

C. Claim Construction

We interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2024). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*

Petitioner proposes that we construe the limitation "single static set of raw ultrasound radio frequency (RF) data forming a single frame" in independent claims 1, 6, 11, and 19 to mean "a single static set of ultrasound radio frequency (RF) data that is not pre-processed, forming a single frame." Pet. 10–11. Patent Owner does not challenge Petitioner's construction. Prelim. Resp. 7 (stating that "[f]or purposes of this Preliminary Response only, Patent Owner applies Petitioner's proposed claim constructions," but asserting that "Petitioner failed to meet its burden under those constructions").

As Patent Owner points out, Petitioner's proposed construction focuses on the term "raw" in the above limitation. Prelim. Resp. 8 ("The only difference between the express claim language and Petitioner's proposed construction are that the claims use the word 'raw,' whereas the proposed construction uses the phrase 'that is not pre-processed.'"). We do

not find it necessary to construe the term “raw” in resolving this dispute. However, Patent Owner’s argument that “Hope-Simpson does not disclose that the neural network processes a *single static set* of raw ultrasound RF data *forming a single frame*” (Prelim. Resp. 19) requires us to construe the “single static set” and “forming a single frame” aspects of this limitation.

We begin our analysis with the language of the claim. Claim 1 recites “one or more processors” that “process the single static set of raw RF ultrasound data.” Ex. 1001, 15:9–15. “[T]he single static set of . . . data” recited as being processed by the processor finds antecedent basis in earlier claim language that specifies that the single static set of raw data output by the transducer “form[s] a single frame of a tissue area.” *Id.* 15:3:5. Thus, the “single static set of raw RF ultrasound data” processed by the processor must, like the data output by the transducer, form a single frame of tissue area.

We next consider the intrinsic evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (“The specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’”). Here, the Specification offers little guidance on what is meant by “static set” or “single frame.” *See generally* Ex. 1001 (not even disclosing “static set” or “single frame” in the detailed description). Accordingly, we turn to the prosecution history.

The language “single static” and “forming a single frame of a tissue area” in the challenged claims was added by amendment. Ex. 1004, 181.⁸ In making the amendment, Applicant stated that the language added by amendment was intended to distinguish the pending claims over Uniyal,⁹ which Applicant characterized as disclosing a “time series” of ultrasound data.

Uniyal relies on a time series of ultrasound data. In order to distinguish Uniyal, the claims have been amended to recite a single static set of ultrasound RF data in a single frame of the tissue area. As explained in the Interview, the claims rely on a single [sic, single] “snapshot” frame of the ultrasound RF data rather than a time series or [sic, of] RF data as disclosed in Uniyal. Applicant respectfully submits the amended claims are allowable over all of the cited reference.

Id. at 186–187; *see also id.* at 185 (Applicant’s remarks accompanying amendment, stating: “As explained in the Interview, a static set of raw ultrasound RF signals is collected for an area. This is a snapshot of the tissue area as opposed to taking a time series of RF signals”), 191 (Examiner interview summary, stating: “Inventor noted that Uniyal uses a time series US [ultrasound] data whereas the invention uses images that are non-coherent in time (e.g., a static frame)”).

⁸ The portions of the Specification identified as supporting amending the claim to recite the phrases “single static” and “forming a single frame of a tissue area”—paragraphs 45, 54, and 56 as well as Fig. 4B—provide little guidance on how these phrases should be construed. Ex. 1004, 186 (identifying paragraphs 45, 54, 56, and Fig. 4B as supporting amendment).

⁹ Uniyal et al., *Ultrasound RF Time Series for Classification of Breast Lesions*, 34(2) IEEE Transactions on Medical Imaging 652–661 (2015) (Ex. 1012, “Uniyal”).

Uniyal describes a study in which ultrasound data from a SonixTouch ultrasound machine was used to classify malignant breast lesions. Ex. 1012, Abstract, 653. The SonixTouch collected “RF data at a frame-rate of 98 frames per second” with each frame having “a total of 128 scan-lines.” *Id.* at 653. In the study described in Uniyal, the authors “used only the first 128 frames of the data, which accounts for 1.3 s of acquisition, to form the RF time series.” *Id.* at 654.

Considering Applicant’s remarks in the context of Uniyal’s disclosure, we understand the language “single static set of raw ultrasound radio frequency (RF) data forming a single frame” to refer to something different from a series of frames of RF data taken consecutively over a period of time. This is consistent with the Examiner’s statement in the Notice of Allowability, where the Examiner explained:

The prior art of record teaches that it was known at the time the application was filed to process the raw ultrasound radiofrequency time series data with a machine learning model, e.g., SVM, to classify malignant vs. benign breast lesions.

However, the prior art, alone or in combination, does not appear to teach or suggest that a single static set of raw ultrasound radio frequency data is processed with a machine learning model to output the classification results.

Ex. 1004, 201. Accordingly, the prosecution history unambiguously shows that Patent Owner specifically disclaimed processing raw ultrasound radiofrequency “time series data.” We construe the language “process the single static set of raw RF ultrasound data” to exclude processing a time series of single frames of RF data.

Petitioner also proposes construction for the phrases “output classification,” “outputting a classification,” and “processing the single static set of ultrasound RF data as an input to a machine learning model.” Pet. 11–12. Patent Owner does not challenge Petitioner’s construction. Prelim. Resp. 7 (stating that “[f]or purposes of this Preliminary Response only, Patent Owner applies Petitioner’s proposed claim constructions,” but asserting that “Petitioner failed to meet its burden under these constructions”). We do not find it necessary to construe these terms. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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))).

D. Overview of Asserted Prior Art

1. Hope-Simpson

Hope-Simpson is an International Patent Application published on July 12, 2018. Ex. 1005, code (43). Hope-Simpson discloses “ultrasound systems and methods for obtaining ultrasonic images and/or tissue information using a neural network.” *Id.* ¶ 1. Hope-Simpson discloses “a system which utilizes a machine-trained neural network[] (e.g., a machine-trained algorithm) developed through one or more machine learning algorithms to output image data and/or a variety of tissue information.” *Id.* ¶ 5. “[T]he neural network may be a deep neural network capable of analyzing patterns using a with a multi-dimensional (2-or more dimensional) data set, which may also be thought of as localized data sets, and where the location of data within the data set and the data values may both contribute

to the analyzed result.” *Id.*

2. Nair

Nair is a U.S. Patent Application published on June 26, 2014. Ex. 1006, code (43). Nair is directed to “tissue ablation procedures and imaging with tissue characterization to guide the ablation therapy.” *Id.* ¶ 2. Nair discloses “utilizing active tissue characterization” that “can assist the user in one or more of the following: evaluation of tissue to be ablated, the amount of energy to utilize, the extent of the area to be ablated, damage to adjacent tissue, the direction of the tissue to be ablated, and the depth of ablation.” *Id.* ¶ 9. The system in Nair “can include an ablation element configured to emit ablative energy toward a tissue of interest and an imaging apparatus configured to emit energy and collect imaging data including reflected signals from the tissue of interest,” as well as “a signal analyzer for analyzing the imaging data and determining one or more signal properties from the reflected signals[] and a correlation processor configured to associate the one or more signal properties to pre-determined tissue signal properties of different tissue components through a pattern recognition technique.” *Id.* ¶ 10.

3. Azizi

Azizi is a journal article dated June 2017. Ex. 1007, 1. Azizi discloses that “Temporal Enhanced Ultrasound (TeUS) has been proposed as a new paradigm for tissue characterization based on a sequence of ultrasound radio frequency (RF) data.” *Id.*, Abstract. Azizi discloses an example in which the spectrum of TeUS data is calculated using “Discrete

Fourier Transforms (DFT) of all zero-mean US [ultrasound] time series corresponding to the RF samples in each ROI [region of interest], normalized to the frame rate.” Ex. 1007, 1295–96.

E. Anticipation by Hope-Simpson (Ground 1)

Petitioner contends that Hope-Simpson discloses all of the limitations of claims 1, 2, 4, 5, 11, 14 and 16. Pet. 20–39. Patent Owner contends that Petitioner’s showing is deficient for several reasons. Prelim. Resp. 9–22. Because it is dispositive, we focus on Patent Owner’s argument that Petitioner has not sufficiently established that Hope-Simpson’s processor “process[es] the single static set of raw RF ultrasound data.” *Id.* at 11–15, 19–20.

Claim 1 is directed to an “ultrasound system” and requires a transducer that “output[s] a single static set of raw ultrasound radio frequency (RF) data forming a single frame of tissue area” (“the transducer limitation”) and a “signal processing unit” configured to execute a code that causes a processor to “process the single static set of raw RF ultrasound data with a machine learning model” (“the processor limitation”). Ex. 1001, 15:2–17. As discussed in connection with our claim construction above, the language reciting that the processor “process[es] the single static set of raw RF ultrasound data” excludes processing a time series of single frames of RF data.

The data processed by Hope Simpson’s processor is generated—at least initially—by its transducer. Ex. 1005 ¶ 6. Accordingly, in considering whether Petitioner has carried its burden to show that Hope Simpson’s processor “process[es] the single static set of raw RF ultrasound data,” we

first consider the data provided to the processor by the transducer.

Petitioner contends that Hope Simpson’s transducer works like a conventional transducer. Specifically, Petitioner contends that conventional transducers acquire “raw RF data in discrete sets” and that it is “standard” for transducers to output “data forming a single frame of tissue area.” Pet. 21. According to Petitioner and its declarant, Dr. Papanicolau, the way an ultrasound transducer acquires data is “analogous to how a camera works.” *Id.* at 22 (citing Ex. 1002 ¶ 84). Dr. Papanicolau elaborates, “many cameras are capable of outputting pictures, which are single frames of data, or videos, which are sets of data which are formed by multiple single frames.” Ex. 1002 ¶ 84.

Petitioner cites the ultrasound machine used in Moradi¹⁰ as an example of an ultrasound transducer that acquires raw RF data in “discrete static frames of data”—like a camera. Pet. 40. Moradi describes a study in which ultrasound data was gathered from patients who had undergone “radical prostatectomy” using a Sonix RP ultrasound machine that “was set to provide a maximum of 63 RF frames collected with the rate of 8 frames per second” where “[e]ach RF frame . . . consisted of 256 lines of RF signal.” Ex. 1016 ¶¶ 123–125. Moradi is similar to the Uniyal reference distinguished during prosecution in that they both describe ultrasound systems that acquire a series of frames of RF data taken consecutively over a period of time. *Compare* Ex. 1012, 653–654, *with* Ex. 1016 ¶¶ 124–125.

¹⁰ Moradi et al., U.S. Patent Publication No. 2010/0063393 A1, published March 11, 2010 (Ex. 1016, “Moradi”).

Petitioner contends that Hope-Simpson discloses a transducer that provides “conventional output.” Pet. 22. Thus, we understand Petitioner to contend that Hope-Simpson’s transducer outputs data in the same way as, for example, Moradi. *See, id.* at 40 (Petitioner’s obviousness mapping, citing Moradi as an example of a “normal ultrasound transducer,” and asserting “to the extent that Hope-Simpson does not already expressly acquire raw RF data in discrete static sets comprising single frames, it would have been obvious to do so, *i.e.*, to use the normal manner of acquiring raw ultrasound data”). To the extent this is the type of data that Hope Simpson provides to its processor, on this record, it does not appear to constitute a “single static set” of raw RF ultrasound data “forming a single frame.”

In its mapping of Hope-Simpson’s disclosure to the claimed transducer, Petitioner points to Hope-Simpson’s teaching that its neural network may be “capable of ‘analyzing patterns using a with a [sic] multi-dimensional (2-or more dimensional) data set, which may also be thought of as localized data sets.’” *Id.* at 22 (quoting Ex. 1005 ¶ 6; alteration by Petitioner). Petitioner then asserts that “[t]he localized data sets described by Hope-Simpson are equivalent to the claimed ‘single set of raw ultrasound [RF] data forming a single frame of a tissue area.’” Pet. 22 (citing Ex. 1002 ¶ 86 (testimony of Dr. Papanicolau)). But Petitioner does not explain why Hope-Simpson’s “localized data sets” equate with a single frame of a tissue area rather than, for example, a time series of frames taken at the same location. Pet. 22. Petitioner cites the testimony of Dr. Papanicolau, but Dr. Papanicolau’s testimony lacks both technical reasoning and evidentiary support; it simply mirrors the statement in Petition. Ex. 1002 ¶ 86. For this

reason, we give Dr. Papanicolau's *ipse dixit* testimony little weight. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (Decision Denying Institution) (precedential) (finding that conclusory testimony that "does not cite to any additional supporting evidence or provide any technical reasoning to support [that testimony] . . . is entitled to little weight"); *see also*, 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."). Accordingly, to the extent this is the data that Hope Simpson provides to the processor, on this record, Petitioner has not sufficiently established that it constitutes a "single static set" of raw RF ultrasound data "forming a single frame."

Petitioner's mapping for the processor limitation similarly fails to establish that the data processed by Hope-Simpson's neural network "form[s] a single frame." *See* Pet. 27–28. Petitioner's only reference to the "single static set" claim language in connection with Hope Simpson's processor is in its citation to Hope-Simpson's Figure 7. *Id.* ("As established previously, the processors in question are those implicated by Step 710 of Figure 7 and process the single static set of raw RF ultrasound data with a machine learning model."). But, as Patent Owner points out, "Hope-Simpson does not disclose the format of the 'RF signals' that are processed by the neural network" for the Figure 7 embodiment, "let alone whether that the 'RF signals' are a single static set that forms a single frame." Prelim. Resp. 19. The Petition, thus, does not sufficiently support that the data processed by Hope-Simpson's processor is a "single static set" that "forms a single frame" as claimed.

Accordingly, on the present record, Petitioner has not carried its burden to establish a reasonable likelihood that it will prevail in showing that Hope-Simpson discloses an ultrasound system that meets the requirement that the processor “process the single static set of raw RF ultrasound data.”

Claim 11, the only other independent claim challenged in Ground 1, includes a limitation corresponding to the limitation requiring that the processor “process the single static set of raw RF ultrasound data” of claim 1. Ex. 1001, 16:6–7 (reciting “processing the single static set of ultrasound RF data”). For this limitation, Petitioner refers back to its mappings for claim 1, cites the same testimony from Dr. Papanicolau, and repeats the same assertions regarding Hope-Simpson. Pet. 33–36. For the same reasons discussed in connection with claim 1, Petitioner has not carried its burden with respect to claim 11.

F. Obviousness over Hope-Simpson (Ground 2)

Petitioner asserts that claims 1, 2, 4, 5, 11, 14 and 16 would have been obvious over Hope-Simpson and sets forth an element-by-element comparison of the challenged claims to the asserted art. Pet. 39–41. As relates to the deficiencies discussed in connection with Ground 1, Petitioner’s showing for Ground 2 is largely unchanged. In Ground 2, Petitioner adds the assertion that “to the extent that Hope-Simpson does not already expressly acquire raw RF data in discrete static sets comprising single frames, it would have been obvious to do so, *i.e.*, to use the normal manner of acquiring raw ultrasound data.” Pet. 40. But neither this assertion, nor any other additions Petitioner makes in Ground 2, improves

the supporting evidence for Petitioner’s assertions in Ground 1 that the Hope-Simpson’s processor “process[es] the single static set of raw RF ultrasound data.” Accordingly, we find that Petitioner has not carried its burden to establish a reasonable likelihood that it will prevail in its assertion that claims 1, 2, 4, 5, 11, 14 and 16 would have been obvious over Hope-Simpson for the same reasons discussed in connection with Ground 1.

G. Obviousness over Hope-Simpson and Nair (Ground 3)

Petitioner asserts that claims 3, 6–9, 12, 13, 15, and 17–20 would have been obvious over the combination of Hope-Simpson and Nair and sets forth an element-by-element comparison of the challenged claims to the asserted art. Pet. 42–68. Claims 6 and 19, the only independent claims among the claims challenged in Ground 3, include limitations corresponding to the limitation of claim 1 requiring that the processor “process[es] the single static set of raw RF ultrasound data.” For these limitations, Petitioner asserts that “[i]t would have been obvious—to the extent that Hope-Simpson does not already inherently do so—to use Nair’s conventional processing of data into windows and power spectrums for each window in the system of Hope-Simpson.” Pet. 49. As relates to its suggestion that Hope-Simpson inherently discloses the limitation corresponding to the processing limitation, Petitioner does not add persuasive evidence to its mapping for claim 1, and, thus, its showing is deficient for the reasons already discussed. The addition of Nair does not address this deficiency because Petitioner does not explain how Nair teaches that its data forms a single frame as claimed. See Pet. 47–50. In addition, as Patent Owner points out, including Nair appears to create additional problems because Nair’s data is plotted over

time, and thus not “static” as required by the claim. Prelim. Resp. 26; Ex. 1006, Fig. 7 (figure relied upon by Petitioner plotting voltage over time), ¶ 88 (discussing Nair’s figure 7).

Accordingly, we find that Petitioner has not carried its burden to establish a reasonable likelihood that it will prevail in its assertion that claims 3, 6–9, 12, 13, 15, and 17–20 would have been obvious over the combination of Hope-Simpson and Nair.

H. Obviousness over Hope-Simpson, Nair, and Aziza (Ground 4)

Petitioner asserts that claim 10 would have been obvious over the combination of Hope-Simpson, Nair, and Aziza, and sets forth an element-by-element comparison of the challenged claims to the asserted art. Pet. 68–69. Claim 10 depends from claim 6, and Petitioner relies on its showing for Ground 3 to address the limitations incorporated from claim 6. Petitioner does not rely on Aziza to address any of the deficiencies discussed above. Accordingly, we find that Petitioner has not carried its burden to establish a reasonable likelihood that it will prevail in its assertion that claim 10 would have been obvious over the combination of Hope-Simpson, Nair, and Aziza for the same reasons discussed in connection with Ground 3.

III. CONCLUSION

On this preliminary record, Petitioner has not established a reasonable likelihood of prevailing in showing that at least one of the challenged claims is unpatentable based on the grounds advanced in the Petition.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied, and we do not institute *inter partes* review of claims 1–20 based on the grounds asserted in this Petition.

IPR2025-00242
Patent 11,602,330 B2

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