

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MIM SOFTWARE INC.,
Petitioner.

v.

PROGENICS PHARMACEUTICALS, INC.,
Patent Owner.

IPR2025-00725
Patent 11,424,035 B2

Before JAMESON LEE, ANNETTE R. REIMERS, and
CHRISTOPHER G. PAULRAJ, *Administrative Patent Judges*.

PAULRAJ, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

MIM Software, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–38 and 41–43 of U.S. Patent Number 11,424,035 B2 (Ex. 1001, “the ’035 patent”). Paper 2 (“Petition” or “Pet.”). Progenics Pharmaceuticals, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 10 (“Prelim. Resp.”).

We have the authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314; 37 C.F.R. §42.4(a). For the reasons discussed below, we determine it is appropriate to deny the Petition.

B. *Real Parties in Interest*

Petitioner identifies itself, MIM Software Inc., its parent company, GE HealthCare Technologies Inc., and its insurer, AIG Specialty Insurance Company, as real parties-in-interest. Pet. 1. Patent Owner identifies Progenics Pharmaceuticals, Inc. and Lantheus Holdings, Inc. as the real parties-in-interest. Paper 3, 2. Patent Owner further provides that EXINI Diagnostics AB (“EXINI”) is co-plaintiff in the related district court litigation. *Id.*

C. *Related Matters*

The parties identify *Pharmaceuticals, Inc. et al. v. MIM Software Inc.*, 1:24-cv-10437-PBS (D. Mass.), as a related matter. Pet. 1; Paper 3, 2. Patent Owner further identifies U.S. Patent Applications Nos. 62/413,936 (provisional), 15/794,220, and 16/418,993 as related applications from which the challenged patent claims priority. Paper 3, 2–3. We further note that Petitioner filed petitions for *inter partes* review for two other related patents: U.S. Patent 10,665,346 in IPR2025-00630 and U.S. Patent

11,894,141 in IPR2025-00726. We issue our institution decisions in those proceedings concurrently with this decision.

D. The '035 Patent (Ex. 1001)

1. Specification

The '035 patent is titled “Network for Medical Image Analysis, Decision Support System, and Related Graphical User Interface (GUI) Applications.” Ex. 1001, code (54). The '035 patent issued from Appl. No. 16/938,488, which was filed on July 24, 2020. *Id.* at codes (21), (22). The '035 patent claims priority to Provisional Appl. No. 62/413,936, filed on October 27, 2016. *Id.* at code (60).

The '035 patent describes the automatic analysis of medical images in a database and “computation of risk information comprising one or more risk indices, a risk field, or a risk map using data from the database.” *Id.* at 4:15–29. According to certain embodiments described in the '035 patent, the value of the “risk index” is computed by “determining, for each of the one or more regions, a corresponding cancerous tissue level within the region based on the intensity values of the nuclear medicine image within the boundary of the region” and “computing the value of the risk index based on the determined cancerous tissue levels within the one or more regions.” *Id.* at 5:14–26. Machine learning algorithms, such as those utilizing artificial neural networks (ANNs) or convoluted neural networks (CNNs), may be used for image segmentation and/or the calculation of the risk index. *Id.* at 27:23–33.

2. *Illustrative Claim*

Petitioner challenges claims 1–38 and 41–43 of the '035 patent. Claims 1, 18, 36, and 41 are independent claims. Claim 1, reproduced below, is representative for purposes of our analysis:

1. A network-based decision support system comprising:

a processor; and

a memory having instructions stored thereon, wherein the instructions, when executed by the processor, cause the processor to:

- (i) receive and store a plurality of medical images in a database, each medical image associated with a corresponding patient;
- (ii) access one or more of the medical images associated with a particular patient from the database upon user request for transmission to the user for display on a user computing device;
- (iii) automatically analyze the one or more medical images using a machine learning algorithm; and
- (iv) generate a radiologist report for the particular patient according to the one or more medical images for the patient,

wherein the one or more medical images comprise a composite image of the particular patient, the composite image comprising a CT scan overlaid with a nuclear medicine image obtained at a substantially same time as the CT scan and following administration to the patient of an imaging agent comprising a Prostate Specific Membrane Antigen (PSMA) binding agent comprising a radionuclide, wherein the instructions cause the processor to automatically analyze the composite image by:

- (a) using the composite image to geographically identify a 3D boundary for each of one or more regions of imaged tissue within the nuclear medicine image; and

(b) computing, using the nuclear medicine image with the identified 3D boundary(ies) of the one or more region(s)

a risk map comprising a graphical denotation marking a region of risk of cancer or risk of recurrence of cancer.

Ex. 1001, 36:18–52.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–38 and 41–43 are unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
A	1–7, 9–24, 26–35	103	Maier ² , Huang, ³ Armor ⁴
B	5–8, 22–25	103	Maier, Huang, Armor, Neumaier ⁵
C	36, 41	103	Huang, Armor
D	37, 38, 42, 43	103	Huang, Armor,

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’223 patent claims priority to a provisional application filed before the effective date of the applicable AIA amendments (March 16, 2013), we refer to the pre-AIA versions of the statutes throughout this Decision.

² U.S. Patent Application Publication No. 2016/0203263 (Ex. 1005) (“Maier”)

³ U.S. Patent Application Publication No. 2007/0081712 (Ex. 1006) (“Huang”)

⁴ PCT Patent Application Publication No. 2015/058151 (Ex. 1007) (“Armor”)

⁵ U.S. Patent No. 10,112,974 (Ex. 1008) (“Neumaier”)

Ground	Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
			Giesel, ⁶ Weinseisen ⁷

Pet. 10. To support these challenges, Petitioner relies on the declaration of Dr. Bruce Rosen (Ex. 1002). In its Preliminary Response, Patent Owner relies on the declaration of Dr. Milan Sonka (Ex. 2014).

II. ANALYSIS

A. *The Petition's Non-Compliance with 37 C.F.R. § 42.104(b).*

A petition must identify “[h]ow the challenged claim is be construed.” 37 C.F.R. § 42.104.

In its Petition, Petitioner contends that the term “risk map” recited in the challenged claims “does not have a well-established ordinary and customary meaning.” Pet. 10. Instead of proposing a single construction, however, Petitioner contends that the term “risk map” may be construed according to any of the following interpretations or definitions:

- (1) “an image corresponding to a patient organ or other tissue that indicates areas and/or degrees of cancer risk with graphical denotations such as texture or color,” consistent with the Patent specification;
- (2) “a visual representation of tissue overlaid with graphical denotations marking one or more regions of cancer or risk of recurrence of cancer,” consistent with the definition in the Patent claims; and

⁶ Giesel et al., “¹⁸F-Labelled PSMA-1007 shows similarity in structure, biodistribution and tumour uptake to the theragnostic compound PSMA-617,” *European Journal of Nuclear Medicine and Molecular Imaging* 43(10):1929-1930 (June 2016) (Ex. 1010) (“Giesel”)

⁷ Weineisen et al., “⁶⁸Ga- and ¹⁷⁷Lu-Labeled PSMA I&T: Optimization of a PSMA-Targeted Theranostic Concept and First Proof-of-Concept Human Studies,” *Journal of Nuclear Medicine* 56(8):1169-1176 (2015) (Ex. 1011) (“Weineisen”)

(3) “a visual representation of tissue overlaid with segmented lesions,” consistent with Patent Owner’s allegations in litigation against Petitioner.

Id. at 12. Petitioner contends that “[t]hese constructions differ, if at all, only in the degree to which they expressly recite particular details.” *Id.*

We agree that these constructions for “risk map” differ in several “particular details,” but those details matter and can make a difference in our patentability analysis, especially given Petitioner’s acknowledgment that there is no well-established ordinary and customary meaning for the term. In taking this “choose-your-own-adventure” approach to claim construction, Petitioner fails to satisfy the requirements of 37 C.F.R. § 42.104(b)(3)–(4), which specify the content of the petition. In particular, Rule 42.104(b)(3) requires the petition to identify “[h]ow the challenged claim is to be construed,” while Rule 42.104(b)(4) requires the petition to identify “[h]ow the construed claim is unpatentable” under either 35 U.S.C. § 102 or § 103. Moreover, by proposing these “choose-your-own-adventure” constructions, Petitioner obfuscates which claim construction the Board is being asked to apply, and under what circumstances each proposed construction should be applied.

To be sure, we do not find that alternative claim constructions are *per se* improper. Nonetheless, there must be reasoning to explain the circumstances under which each alternative construction should be applied or an explanation of how the prior art renders the claims unpatentable under alternative constructions. For instance, Petitioner may assert one construction on the basis that a claim term should be construed as a means-plus-function term under 35 U.S.C. § 112(f), but also propose an alternative construction to be applied if the term is not found to be a means-plus-

function term. Unlike this example, however, Petitioner does not provide *any* rationale here for including three alternative constructions. Instead, Petitioner indicates there is no well-established ordinary and customary meaning for the term, and incorrectly contends that the three alternative constructions are not significantly different without explaining why three different constructions are being proposed or under what circumstances one construction should be applied over the other two constructions.

Contrary to Petitioner’s conclusory suggestion that the proposed constructions are not meaningfully different, we find that the “particular details” recited in the different constructions could affect our patentability analysis. For example, construction (1) above recites an “an image corresponding to a patient organ or other tissue,” while constructions (2) and (3) recite “a visual representation of tissue.” It is not clear that a “visual representation” (which may be a “3D representation”) is necessarily synonymous with an “image.” Ex. 1001, 4:3–4. Furthermore, construction (1) recites that the image “indicates areas and/or degrees of cancer risk with graphical notations such as texture or color.” On the other hand, construction (2) recites the visual representation is “overlaid with graphical denotations marking one or more regions of cancer or risk of recurrence of cancer,” while construction (3) only requires that the visual representation is “overlaid with segmented lesions.”

The Petition does not reference its different constructions when applying the prior art to the claims. We find, however, that whether or not the graphical information in the prior art can qualify as a “risk map” may well depend on the particular construction that is applied. For example, with regard to the challenges of independent claims 1 and 18, Petitioner points to Maier’s Figure 3, and the corresponding teaching of a system that calculates

certain quantitative health status and risk metrics, as meeting the requirement of a risk map. Pet. 38, 40. While Maier lists “lung cancer” among the conditions that may be assessed, the corresponding description for Figure 3 only indicates that the image section “provides visual feedback and quantitative health status metrics related to the areas of ‘likely emphysema.’” Maier, ¶ 41. Emphysema is not a type of cancer. Although Maier’s Figure 3 may satisfy the third proposed construction’s more generic requirements of “a visual representation of tissue overlaid with segmented lesions,” it is not clear how Maier teaches a graphical denotation marking regions of “cancer risk” as required under the first and/or second proposed constructions.

We have similar concerns with regard to Petitioner’s reliance on Huang to satisfy the “risk map” term for independent claims 36 and 41. Pet. at 41, 65–66 (contending that Huang teaches “quantify[ing] changes for the hot-spot based on the segmentation results and produc[ing] reports,” including “a visualization of the segmented results,” and that a “POSITA would recognize this as computing a risk map”) (citing Ex.1006 ¶¶ 78–79). The cited teachings in Huang discuss providing a visualization of a change in tumor size over time, but it is not clear how this information depicts areas (or regions) and/or degrees of cancer risk, as required by some (but not all) of the proposed constructions.

The Petition takes a similar approach with regard to the terms “risk indices” and “risk index.” Petitioner contends that these terms also “do not have a well-established ordinary and customary meaning,” and then goes on to propose three different constructions:

- (1) “numeric value(s) indicative of cancer state and/or progression in the patient within one or more regions,” which is consistent with the Patent specification;
- (2) “value(s) indicative of cancer state and/or progression in the patient within one or more regions,” which is consistent with the definition in the Patent claims; and
- (3) “value(s) indicative of cancer state and/or progression in the patient within one or more regions, including but not limited to uptake values, tumor volumes, and other values derived therefrom,” which is consistent with Patent Owner’s allegations in the [district court] Litigation.

Pet. 12–14. Once again, despite proposing three constructions with different phrases and thus different potential scopes (e.g., “numerical value(s)” vs. simply “value(s)”), Petitioner summarily states that these constructions “differ, if at all, only in the degree to which they expressly recite particular details.” *Id.* at 14. Again, we find that the “particular details” can potentially matter to our patentability analysis.

III.CONCLUSION

For the foregoing reasons, we determine that the Petition fails to satisfy the requirement of 37 C.F.R. § 42.104(b) to set forth how the challenged claims are to be construed. Accordingly, we decline to institute an *inter partes* review.

IV.ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition for an *inter partes* review is denied and no *inter partes* review is instituted.

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FOR PETITIONER:

Jeffrey Metzcar
David Jaglowski
THOMPSON HINE LLP
jeff.metzcar@thompsonhine.com
david.jaglowski@thompsonhine.com

FOR PATENT OWNER:

William Haulbrook
Stephanie Schonewald
CHOATE, HALL & STEWART LLP
whaulbrook@choate.com
sschonewald@choate.com