

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MIM SOFTWARE INC.,
Petitioner.

v.

PROGENICS PHARMACEUTICALS, INC.,
Patent Owner.

IPR2025-00726
Patent 11,894,141 B2

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

REIMERS, *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 1–3 and 6–35 of U.S. Patent Number 11,894,141 B2 (Ex. 1001, “the ’141 patent”). Paper 1 (“Petition” or “Pet.”). Progenics Pharmaceuticals, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 10 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2024). An *inter partes* review may not be instituted “unless . . . the information presented in 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.” 35 U.S.C. § 314(a). Upon consideration of the Petition and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood of success in proving that at least 1 claim of the ’141 patent is unpatentable.¹

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.*

¹ In a separate decision, the Acting Director denied Patent Owner’s request for discretionary denial of the Petition. Paper 12.

C. Related Matters

The parties identify *Progenics 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, 16/418,527, 16/938,488, 18/543,113, and 18/934,152 as related applications from which the challenged patent claims priority. Paper 3, 2–4. 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 11,424,035 in IPR2025-00725. We issued our decisions denying institution in those proceedings on October 8, 2025. *See* IPR2025-00630, Paper 14; IPR2025-00725, Paper 13.

D. The '141 Patent (Ex. 1001)

1. Specification

The '141 patent is titled “Network for Medical Image Analysis, Decision Support System, and Related Graphical User Interface (GUI) Applications.” Ex. 1001, code (54). The '141 patent issued from Appl. No. 17/862,528, which was filed on July 12, 2022. *Id.* at codes (21), (22). The '141 patent is a continuation of Appl. No. 16/938,488, filed on Jul. 24, 2020, now Pat. No. 11,424,035, which is a continuation of Appl. No. 16/418,527, filed on May 21, 2019, now Pat. No. 10,762,993, which is a continuation of Appl. No. 15/794,220, filed on Oct. 26, 2017, now Pat. No. 10,340,046. *Id.* at code (63). The '141 patent claims priority to Provisional Appl. No. 62/413,936, filed on October 27, 2016. *Id.* at code (60).

The '141 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

4:15–28. According to certain embodiments described in the ’141 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 intensity values of the nuclear medicine image within the 3D 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 5:21–32. 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 28:13–18.

2. *Illustrative Claim*

Petitioner challenges claims 1–3 and 6–35 of the ’141 patent. Claims 1, 24, 27, and 31–35 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;
 - (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 value of each of one or more risk indices, each risk index value indicative of cancer state or progression in the patient, and wherein the system is a cloud-based system.

Ex. 1001, 37:7–41.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–3 and 6–35 are unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
A	1–3, 6–9, 13–26, 32–35	103	Maier, ³ Huang, ⁴ Armor

² 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 ’141 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.

³ U.S. Patent Application Publication No. 2016/0203263 A1 (Ex. 1005) (“Maier”).

⁴ U.S. Patent Application Publication No. 2007/0081712 A1 (Ex. 1006) (“Huang”).

Ground	Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
			⁵
B	6–11	103	Maier, Huang, Armor, Neumaier ⁶
C	6, 12	103	Maier, Huang, Armor, Cardinale ⁷ and/or Giesel ⁸
D	27, 31	103	Huang, Armor, Maier
E	28–30	103	Huang, Armor, Maier, Giesel, Weinseisen ⁹

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 to be construed.” 37 C.F.R. § 42.104(b)(3).

⁵ PCT Patent Application Publication No. 2015/058151 A2 (Ex. 1007) (“Armor”).

⁶ U.S. Patent No. 10,112,974 B2 (Ex. 1008) (“Neumaier”).

⁷ U.S. Patent No. 10,815,200 B2 (Ex. 1009) (“Cardinale”).

⁸ 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”).

⁹ 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”).

In the Petition, Petitioner takes the position that the terms “risk indices” and “risk index” “do not have a well-established ordinary and customary meaning,” and proposes 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. 10–12. According to Petitioner, “[these constructions] differ, if at all, only in the degree to which they expressly recite particular details.” *Id.* at 12.

We agree that these constructions for the terms “risk indices” and “risk index” 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.

The Board does 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. For example, 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. However, Petitioner does not provide *any* rationale here for including three alternative constructions. Rather, Petitioner indicates there is no well-established ordinary and customary meaning for the term(s), 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 "numeric value(s) indicative of cancer state and/or progression in the patient within one or more regions," while constructions (2) and (3) recite "value(s) indicative of cancer state and/or progression in the patient within one or more regions." It is not clear that "numeric value(s)" (which may be "values identifying a particular cancer stage") are necessarily synonymous with "value(s)" (which may be "a plurality of hotspots within the 3D boundary of the region.") *See* Ex. 1001, *e.g.*, 9:4–13, 9:60–10:1. Moreover, construction (3) additionally

recites that the values “include[] but [are] not limited to uptake values, tumor volumes, and other values derived therefrom.” Pet. 11.

The Petition does not reference its different constructions when applying the prior art to the claims. We find, however, that whether or not the value information in the prior art can qualify as “risk indices” and a “risk index” may well depend on the particular construction that is applied. For instance, with regard to the challenges of independent claim 1, 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 risk indices. Pet. 35–37. Although 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.’” Ex. 1005 ¶ 41, Fig. 3. Emphysema is not a type of cancer. In addition, the comparative section in Maier’s Figure 3 “contains quantitative health risk metrics derived from a comparison of the patient’s images” to lung screening participants diagnosed with Chronic Obstructive Pulmonary Disease (COPD) or lung cancer and participants who had a heart attack or stroke. *Id.* ¶¶ 7, 41, Fig. 3. The comparative section is merely a futuristic 5-year health risk metric that compares the patient’s lungs to participants with lungs like those of the patient and states that individuals with lungs similar to those of the patient experienced health problems including COPD, lung cancer, heart attack, or stroke with five years. *Id.* ¶ 41, Fig. 3. As the health risk metrics (i.e., values) of Maier’s Figure 3 include a comparison between a patient and participants with COPD, lung cancer, heart attack, and stroke, they are not necessarily indicative of a cancer state and they do not represent progression in the patient within one

or more regions of the lungs. Thus, it is not clear how Maier teaches value(s) indicative of cancer state and/or progression in the patient within one or more regions 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 term "risk indices" for independent claims 1. Pet. 35, 37–38. Huang discusses the use of PET/CT imaging to produce PET hot-spots, which can correspond to "both normal physiology, such as heart, kidney, or bladder, and pathology, such as tumor *or* inflammations." Ex. 1006 ¶ 98 (emphasis added); *see also* Pet. 35, 38. Huang describes "[a] learning-based method" that "enables the computer to understand on which organs or tissue regions each hot-spot is located, hence making it possible to separate normal hot-spots from pathological ones." *Id.* ¶ 99; *see also* Pet. 35, 38. Huang further describes that "[a]t the end of the process, all normal hot-spots are suppressed and have their hot-spot high-uptake values replaced with background low-uptake values, hence only pathological or abnormal hot-spots remain as bright spots in the PET or PET/CT image." *Id.*; *see also* Pet. 35, 38. The cited teachings in Huang discuss providing visualization of pathological changes in organs or tissue regions (i.e., PET hot-spots) via PET/CT imaging. According to Huang, these PET hot-spots (i.e., values) can represent pathological conditions, which include not only tumors but also inflammation. As such, the PET hot-spots/values described in Huang are not necessarily indicative of a cancer state as required by all of the proposed constructions. Furthermore, these PET hot-spots (i.e., values) are indicative of the location (i.e., organ or tissue region) of the pathological condition. It is not clear how organ or tissue region location information

depicts progression in the patient within one or more regions as required under the first and/or second proposed constructions.

We have similar concerns with regard to Petitioner’s reliance on Armor to satisfy the term “risk indices” for independent claim 1. Pet. 35, 38. Armor describes a method “for determination of prostate cancer and the extent of the disease.” Ex. 1007 ¶ 66; *see also* Pet. 35, 38. Armor discusses direct correlation of compound level uptake with a Gleason score.¹⁰ *Id.*; *see also* Pet. 38 (contending that “Armor discloses that uptake levels of its compounds directly correspond with a risk index, *e.g.*, a Gleason score for tumors in the prostate”) (citing Ex.1007 ¶ 64). Although a Gleason score could be considered to be indicative of prostate cancer through analysis of compound uptake values, the compound uptake values do not necessarily indicate progression in the patient within one or more regions, as alternatively recited in the proposed constructions.

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.

¹⁰ A Gleason score is “a prognostic marker for the aggressiveness of prostate cancer [and] is based on the grade of prostate cancer obtained by histopathological analysis.” Ex. 1007 ¶ 64; *see also* Pet. 38.

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