

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MEDIVIS, INC.
Petitioner

v.

NOVARAD CORP.
Patent Owner

US Patent No. 11,004,271

Inter Partes Review No. IPR2023-00042

**PETITIONER’S OBJECTIONS
TO
EXHIBITS FILED WITH PATENT OWNER RESPONSE**

I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.64(b)(1), Petitioner Medivis, Inc., objects to any reference to, or reliance on, Exhibits 2002-2005, which Novarad Corp. served on July 18, 2023, with its Patent Owner Response (hereinafter, the Response).¹ Pursuant to 37 C.F.R. § 42.62, Petitioner's objections apply the Federal Rules of Evidence ("F.R.E."), among other applicable rules.

II. OBJECTIONS

A. Exhibit 2002 (Mulumudi Declaration)

Exhibit 2002 is the Declaration of Mahesh S. Mulumudi, M.D., that was signed on July 18, 2023 ("Mulumudi Dec.").

1. Dr. Mulumudi is Not an Expert in the Relevant Field

Petitioner objects to Exhibit 2002 in its entirety under F.R.E. 702(a) (expert witness-specialized knowledge) because Dr. Mulumudi does not have the type of "scientific, technical, or other specialized knowledge [that] will help the trier of fact to understand the evidence or determine a fact in issue" in the relevant field to qualify as a technical expert in this matter. Fed. R. Evid. 702(a).

The Petition identified "systems and methods for using augmented reality during medical procedures" as the relevant field. Pet. at 10 (quoting Kazanzides Decl., Ex. 1012, ¶ 23). Dr. Mulumudi merely acknowledges Dr. Kazanzides'

¹ Patent Owner Novarad did not file a patent owner preliminary response.

conclusion that “the relevant art is ‘systems and methods for using augmented reality during medical procedures.’” Ex. 2002, ¶ 31 (quoting Kazanzides Decl., Ex. 1012, ¶ 23).

According to Exhibit 2003, Dr. Mulumudi is an interventional cardiologist with expertise in treating peripheral vascular diseases and coronary artery disease. None of Dr. Mulumudi’s itemized experience, training, research, publications, or patents relate to the pertinent field, “systems and methods for using augmented reality during medical procedures.” While Exhibit 2003 includes sections titled “Imaging Experience” and “Virtual Reality/Augmented Reality With Biofeedback,” both of which contain vague descriptions of certain purported proficiencies, neither section includes any corroborating information or explanation regarding the nature and extent of his experience with these technologies, nor does Dr. Mulumudi explain how these experiences qualify him to opine, *as an expert*, on the technology of the challenged patents and the pertinent field. Indeed, Dr. Mulumudi himself only claims to be qualified to provide expert opinions on “*some* aspects of the technology described in the ‘271 Patent and on the references cited by Petitioner and Dr. Kazanzides.” Ex. 2002, ¶ 29 (emphasis added). Therefore, Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 702(a) (expert-specialized knowledge) because the

Patent Owner has not established that Dr. Mulumudi is qualified to testify as an expert in the relevant field.

2. The Mulumudi Dec. Does Not Meet the Requirements of Fed. R. Civ. P. 26

Petitioner objects to the Mulumudi Dec. as insufficient under Fed. R. Civ. P. 26, as this expert disclosure does not meet the requirements for expert disclosures under the Federal Rules. Rule 26 requires that all written disclosures include a disclosure of “a list of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition.” Fed. R. Civ. P. 26(a)(2)(B)(v). Paragraph 28 of the Mulumudi Dec., Exhibit 2002, generally refers to the “attached CV,” presumably meaning Exhibit 2003, which merely lists three occasions on which he was retained as an expert witness, but does not identify the cases with sufficient particularity for Petitioner to locate or review the matters at issue.

Furthermore, Rule 26 also requires a disclosure of “all publications authored in the previous 10 years.” Fed. R. Civ. P. 26(a)(2)(B)(iv). Exhibit 2003 includes what purports to be a list of “Papers and Abstracts,” but it is unclear whether that list meets the requirements of the rule because that list appears to end in 2003.

Therefore, Petitioner objects to Exhibit 2002, the Mulumudi Dec., as insufficient under Fed. R. Civ. P. 26, because (a) it neither provides nor references

a sufficient identification of the previous instances that Dr. Mulumudi has provided expert testimony and (b) it is unclear whether it provides or references a complete list of Dr. Mulumudi's publications from the previous 10 years.

3. The Mulumudi Dec. Is Not Supported By Sufficient Facts or Data

a. Dr. Mulumudi Does Not Disclose Who He Considers a Person of Ordinary Skill in the Art Nor When He Considers the Time of the Invention

The Petition asserts “the hypothetical person of ordinary skill in the art at the time ... (POSA)[aka POSITA] would be ‘a person with a bachelor’s degree in computer science, electrical engineering, or a related field with several years of experience in the design, development, and study of augmented reality devices either (a) familiar with conventional medical imaging data and visualization of data for medical procedures or (b) working with a team including someone with such familiarity.’” Pet. at 10 (quoting Kazanzides Decl., Ex. 1012, ¶ 25). The Mulumudi Dec. merely acknowledges Petitioner’s definition of the POSITA. Ex. 2002, ¶ 32 (quoting Kazanzides Decl., Ex. 1012, ¶ 25). The Mulumudi Dec. also acknowledges Petitioner’s assumption that the relevant time for the ‘271 patent is “on or before March 30, 2017.” Ex. 2002, ¶ 8 (citing Petition at 10).

Petitioner objects to Exhibit 2002, the Mulumudi Dec., under F.R.E. 702(b) (expert witness-sufficient facts or data) and F.R.E. 401-402 (relevance), because it

is unclear how Dr. Mulumudi defines both a POSITA for the challenged patent and the time of the invention. Dr. Mulumudi asserts “I understand that my opinion must be taken from the perspective of what would have been known or understood by a person of ordinary skill in the art (‘POSITA’) at the time of the invention.” Ex. 2002, ¶ 30. But nowhere in the Mulumudi Dec. does Dr. Mulumudi disclose how he defines a POSITA for the challenged patent and how he defines the time of the invention of the challenged patent. Nor does Dr. Mulumudi purport to adopt or apply Petitioner’s definition of a POSITA for the challenged patent and/or Petitioner’s assumed time. Therefore, each opinion regarding the perspective of a POSITA is not supported by sufficient facts or data. Because it is unknown how Dr. Mulumudi defines a POSITA for the challenged patent and how he defines the time of the invention, his opinions as to the perspective of a POSITA at the time of the invention are unsupported by sufficient facts or data and are therefore irrelevant to the IPR. Therefore, Petitioner objects to Exhibit 2002 as inadmissible under F.R.E. 401-402 (relevance) and F.R.E. 702(b) (expert testimony-insufficient facts and data).

b. Dr. Mulumudi’s Opinions are *Ipse Dixit*

Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 702(b) (expert testimony-insufficient facts or data) because Dr.

Mulumudi's opinions are largely unsupported *ipse dixit*. The Mulumudi Dec. provides dozens of opinions, but for the most part the opinions are completely unsupported assertions. At most the Mulumudi Dec. cites to portions of the challenged patent or the prior art and then forms a conclusion without tying the conclusion to the cited text. Unsupported *ipse dixit* of an expert is inadmissible. *See* F.R.E. 702(b) (an expert opinion must be "based on sufficient facts or data"); § 42.65 ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight"); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9 (Aug 24, 2022) (designated precedential Feb. 10, 2023) (declining to credit expert testimony that does not disclose underlying facts or data); *see also Rohm & Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) ("nothing in the Federal Rules of Evidence or in [Federal Circuit] jurisprudence requires the fact finder to credit the unsupported assertions of an expert witness."). Therefore, Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 702(b) (expert testimony-insufficient facts or data).

4. Dr. Mulumudi Cannot Opine Regarding the Perspective of a Person of Ordinary Skill in the Art

Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 702(a) (expert testimony-specialized knowledge) and F.R.E. 401-402

(relevance). As discussed above, it is uncertain how Dr. Mulumudi defines a POSITA with respect to the challenged patent. But under the definition presented by Petitioner, which is the only definition offered in this IPR, Dr. Mulumudi does not qualify as a POSITA at least because (a) Dr. Mulumudi's education as a medical doctor and Ph.D. in pharmacology and toxicology are not "related" to degrees in computer science or electrical engineering and (b) he does not have "several years of experience in the design, development, and study of augmented reality devices." Dr. Mulumudi asserts "I understand that my opinion must be taken from the perspective of what would have been known or understood by a person of ordinary skill in the art ('POSITA') at the time of the invention." Ex. 2002, ¶ 30. But Dr. Mulumudi is not qualified to opine regarding the perspective of a POSITA because he has neither (a) the qualification nor (b) the experience required by the only definition of a POSITA for the challenged patent that has been offered in this IPR. *See Kyocera Senco Indus. Tools Inc. v. ITC*, 22 F.4th 1369, 1377 (Fed. Cir. 2022) (finding that a technical expert must at least meet the level of ordinary skill in the art of the asserted patents to testify from the perspective of a person of ordinary skill in the art). Therefore, Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 702(a) (expert testimony-specialized knowledge) and F.R.E. 401-402 (relevance) because Dr. Mulumudi is

not qualified to opine regarding the challenged claims or the prior art from the perspective of a POSITA.

5. Dr. Mulumudi's Opinions Rely on Improper Claim Construction

Petitioner objects to Exhibit 2002, the Mulumudi Dec., as inadmissible under F.R.E. 401-402 (relevance) because it is premised on incorrect claim construction. An expert opinion that is premised on incorrect construction of the claims is irrelevant and therefore inadmissible. *See e.g., Hoist Fitness Sys., Inc. v. Tuffstuff Fitness Int'l, Inc.*, No. 2020-1047, 2020 WL 5868294, at *7 n.9 (Fed. Cir. 2020) (affirming exclusion of technical expert's opinion that failed to apply the district court's construction).

Here, in its Institution Decision, the Board expressly adopted the Petitioner's construction of certain terms, and declined to construe any other terms (thereby applying the plain and ordinary meaning). *See* Institution Decision at 7 ("For the purposes of this Decision, and based on the record now before us, we adopt Petitioner's constructions of 'three-dimensional (3D) data,' '3D data,' 'virtual 3D shape,' and 'being having,' ..."). In the Mulumudi Dec., after opining that certain terms have meanings other than those preliminarily adopted by the Board, Dr. Mulumudi made determinations regarding anticipation and obviousness that were premised solely on his preferred constructions. *See, e.g., Ex. 2002*, ¶ 85 (*Doo ...*

does not disclose ... a direct volume rendering"); ¶ 101 (“*Doo* does not disclose 3D ‘inner layers’ that can be confined (i.e., navigated)”). Dr. Mulumudi never analyzes whether the Petitioner’s asserted prior art discloses the claims *under the Board’s preliminary constructions*. Therefore, under the Board’s preliminary constructions, Dr. Mulumudi’s opinions as to anticipation and obviousness are irrelevant and Petitioner objects to those irrelevant opinions as inadmissible under F.R.E. 401-402 (relevance).

6. Dr. Mulumudi Gives Opinions that are Not Relied Upon By the Patent Owner

Petitioner objects to any opinion in Exhibit 2002, the Mulumudi Dec., that is not explicitly relied upon by the Patent Owner in its Response, as inadmissible under 37 C.F.R. § 42.6(a)(3), which bars “incorporat[ion] by reference from one document into another document.” Because the Patent Owner cannot incorporate any opinion or argument “by reference,” to the extent that the Mulumudi Dec. contains an opinion or argument not explicitly presented by the Patent Owner in its Response, that portion of the Mulumudi Dec. is inadmissible and may not be relied upon by the Patent Owner in this proceeding or any related appeal. Therefore, Petitioner objects to any portion of Exhibit 2002, the Mulumudi Dec., that is not explicitly presented in the Patent Owner’s Response as inadmissible under 37 C.F.R. § 42.6(a)(3).

B. Exhibit 2003 (Cahn Litigation Services Expert No.: 28179)

Exhibit 2003 is a document of Cahn Litigation Services Expert No.: 28179, Mahesh S. Mulumudi, M.D. The Response lists Exhibit 2003 as Dr. Mulumudi's C.V. in the Exhibit List, but otherwise never references it. Petitioner objects to any arguments reliant on any portion of Exhibit 2003 that is not explicitly referenced in the Patent Owner's Response as inadmissible under 37 C.F.R. § 42.6(a)(3).

C. Exhibit 2004 (Rosenberg Declaration)

Exhibit 2004 is the Declaration of Craig Rosenberg, Ph.D., that was signed on July 17, 2023 ("Rosenberg Dec.").

1. The Rosenberg Dec. Does Not Meet the Requirements of Fed. R. Civ. P. 26

Petitioner objects to the Rosenberg Dec. as insufficient under Fed. R. Civ. P. 26. Rule 26 requires that all written disclosures include a disclosure of "a list of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition." Fed. R. Civ. P. 26(a)(2)(B)(v). Paragraph 36 of the Rosenberg Dec. generally refers to the "attached CV," presumably meaning Exhibit 2005, which provides both a selection of "VR and AR cases" and a list of "Testifying Experience." But due to the lack of dates and other relevant information in Exhibit 2005, it is unclear whether these lists include all other cases in which Dr. Rosenberg has testified in the last 4 years.

Rule 26 also requires a disclosure of “all publications authored in the previous 10 years.” Fed. R. Civ. P. 26(a)(2)(B)(iv). As Exhibit 2005 includes only “Selected Publications/Presentations,” again it is unclear whether this disclosure meets the requirements of the rule.

Finally, Exhibit 2005 appears not to have been updated for more than a year. *See* Ex. 2005 at 6, footer (“Revision – April 2022”) (emphasis added). The fact that Exhibit 2005 appears on its face to have been last updated more than a year before the July 2023 date of the Rosenberg Dec. calls into question whether Novarad satisfied Rule 26’s mandatory disclosures as to Rosenberg.

Therefore, Petitioner objects to Exhibit 2004, the Rosenberg Dec., as inadmissible for failure to meet the requirements of Rule 26 because (a) it neither provides nor references a sufficient identification of the previous instances that Dr. Rosenberg has provided expert testimony and (b) it is unclear whether it provides or references a complete list of Dr. Rosenberg’s publications from the previous 10 years.

2. The Rosenberg Dec. Is Not Supported By Sufficient Facts or Data

a. Dr. Rosenberg Does Not Disclose Who He Considers a Person of Ordinary Skill in the Art Nor When He Considers the Time of the Invention

Petitioner objects to Exhibit 2004, the Rosenberg Dec. under F.R.E. 702(b) (expert witness-insufficient facts or data) and 401-402 (relevance), because it is unclear who Dr. Rosenberg considers a person of ordinary skill in the art for the challenged patent and when he considers to be the time of the invention. Nowhere in the Rosenberg Dec. does Dr. Rosenberg disclose how he defines POSITA for the challenged patent and when he defines as the time of the invention of the challenged patent. Dr. Rosenberg acknowledges Petitioner's POSITA definition for the challenged patent and Petitioner's assumed time of the invention. *See* Ex. 2004, ¶ 41 (acknowledging Petitioner's definition of POSITA for the challenged patent), ¶ 8 (acknowledging "the time of the '271 patent, which Petitioner has assumed to be on or before March 30, 2017."). Then Dr. Rosenberg asserts a "POSITA at the time of the '271 patent would include someone with a degree in human factors or human computer interaction," and explains that position. definition and Petitioner's assumed time. Ex. 2004, ¶ 42. By including a human

factors degree as within a definition of a POSITA, Dr. Rosenberg does not appear to be identifying the metes and bounds of a POSITA.²

Nor does Dr. Rosenberg purport to adopt or apply Petitioner's definition of POSITA for the challenged patent or Petitioner's assumed time of the invention. Dr. Rosenberg asserts "I understand that my opinion must be taken from the perspective of what would have been known or understood by a person of ordinary skill in the art ('POSITA') at the time of the invention." Ex. 2004, ¶ 39. Because it is unknown how Dr. Rosenberg defines the POSITA for the challenged patent and the time of the invention, his opinions as to the perspective of a POSITA at the time of the invention are not supported by sufficient facts or data, and are therefore irrelevant to the IPR. Therefore, Petitioner objects to Exhibit 2004, the Rosenberg Dec., as inadmissible under F.R.E. 401-402 (relevance) and F.R.E. 702(b) (expert testimony-insufficient facts or data).

² If Dr. Rosenberg does define a POSITA as a person with a degree in human factors or human computer interaction, then Petitioner objects to any testimony by Dr. Mulumudi because Dr. Mulumudi is clearly not qualified as a POSITA under that definition.

b. Dr. Rosenberg's Opinions are *Ipsa Dixit*

Petitioner objects to Exhibit 2004, the Rosenberg Dec., as inadmissible under F.R.E. 702(b) (expert testimony-insufficient facts or data) because Dr. Rosenberg's opinions are largely unsupported *ipse dixit*. The Rosenberg Dec. provides dozens of opinions, but for the most part the opinions are completely unsupported assertions. At most the Rosenberg Dec. cites to portions of the challenged patent or the prior art and then forms a conclusion without tying the conclusion to the cited text. Unsupported *ipse dixit* of the expert is inadmissible. See F.R.E. 702(b) (an expert opinion must be "based on sufficient facts or data"); § 42.65 ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight"); *Xerox Corp. v. Bymark, Inc.*, IPR2022-00624, Paper No. 9 (Aug 24, 2022) (designated precedential Feb. 10, 2023) (declining to credit expert testimony that does not disclose underlying facts or data); see also *Rohm & Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) ("nothing in the Federal Rules of Evidence or the [Federal Circuit] jurisprudence requires the fact finder to credit the unsupported assertions of an expert witness."). Therefore, Petitioner objects to Exhibit 2004, the Rosenberg Dec., as inadmissible under F.R.E. 702(b) (expert testimony-insufficient facts or data).

3. Dr. Rosenberg's Opinions Rely on Improper Claim Construction

Petitioner objects to Exhibit 2004, the Rosenberg Dec., as inadmissible under F.R.E. 401-402 (relevance) because certain opinions are premised on incorrect claim construction. An expert opinion that is premised on incorrect construction of the claims is irrelevant and therefore inadmissible. *See e.g., Hoist Fitness Sys., Inc. v. Tuffstuff Fitness Int'l, Inc.*, No. 2020-1047, 2020 WL 5868294, at *7 n.9 (Fed. Cir. 2020) (affirming exclusion of technical expert's opinion that failed to apply the district court's construction).

In its Institution Decision, the Board expressly adopted the Petitioner's construction of certain terms, and declined to construe any other terms (thereby applying the plain and ordinary meaning). *See* Institution Decision at 7. In the Rosenberg Dec., after opining that certain terms have meanings other than those preliminarily adopted by the Board, Dr. Rosenberg provided opinions regarding anticipation and obviousness that were premised solely on his preferred constructions. For example, although not part of its proposed construction for the claim element, Novarad asserts that "confined within a virtual 3D shape" means "navigable within a volume of a virtual tool that assists the user when navigating the projected 3D data." *See* Response at 64 ("[P]rojected 3D data is confined (i.e., navigable) within a volume of a virtual 3D shape[, which] is a virtual tool that

‘assist[s] the user when navigating the projected 3D data.’”). Dr. Rosenberg relies on Novarad’s asserted construction to draw conclusions as to obviousness in view of *Amira* and *3D Visualization*. See, e.g., Ex. 2004, ¶ 137 (“*Amira* does not disclose that its skin model can be used to ‘assist the user when navigating the projected 3D data.’”), ¶ 138 (“*Amira* does not disclose that its bounding box can be used to ‘assist the user when navigating the projected 3D data.’”), ¶ 169 (“*3D Visualization* does not disclose that its box can be used to ‘assist the user when navigating the projected 3D data.’”). Dr. Rosenberg never considered whether the Petitioner’s asserted prior art discloses the claims *under the Board’s preliminary constructions*. Therefore, under the Board’s preliminary constructions, Dr. Rosenberg’s opinions as to anticipation and obviousness are irrelevant and Petitioner objects to those irrelevant opinions as inadmissible under F.R.E. 401-402 (relevance).

4. Dr. Rosenberg Gives Opinions that are Not Relied Upon By the Patentee

Petitioner objects to any opinion in Exhibit 2004, the Rosenberg Dec., that is not explicitly relied upon by the Patent Owner in its Response, as inadmissible under 37 C.F.R. § 42.6(a)(3), which bars “incorporate[ion] by reference from one document into another document.” Because the Patent Owner cannot incorporate any opinion or argument “by reference,” to the extent that the Rosenberg Dec.

contains an opinion or argument not explicitly presented by the Patent Owner in its Response, that portion of the Rosenberg Dec. is inadmissible and may not be relied upon by the Patent Owner in this proceeding or any related appeal. Therefore, Petitioner objects to any portion of Exhibit 2004, the Rosenberg Dec., that is not explicitly presented in the Patent Owner's Response as inadmissible under 37 C.F.R. § 42.6(a)(3).

D. Exhibit 2005 (Cahn Litigation Services Expert No.: 24686)

Exhibit 2005 is a document of Cahn Litigation Services Expert No.: 24686, Craig Rosenberg, Ph.D. (Revision–April 2022). The Response lists Exhibit 2005 as Dr. Rosenberg's C.V. in the Exhibit List, but otherwise never references it. Petitioner objects to any arguments reliant on any portion of Exhibit 2005 that is not explicitly referenced in the Patent Owner's Response as inadmissible under 37 C.F.R. § 42.6(a)(3).

III. CONCLUSION

For at least the foregoing reasons, Petitioner objects to any reference to, or reliance on Exhibits 2002-2005.

Respectfully submitted,

Dated: July 25, 2023

By: /s/ *Kia L. Freeman*
Kia L. Freeman
Registration No. 47,577
Attorney for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on July 25, 2023, I caused a true and correct copy of the foregoing PETITIONER’S OBJECTIONS TO EXHIBITS FILED WITH PATENT OWNER RESPONSE to be served by filing this document with the Patent Trial and Appeal Board and by delivering a copy by e-mail to the email addresses of the patent owner’s attorneys of record in the patent owner’s latest mandatory notice:

joseph.harmer@tnw.com; and

hansen@tnw.com

Dated: July 25, 2023

By: /s/ John Curran
John Curran (Reg. No. 50,455)