

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MEDIVIS, INC.,  
Petitioner,

v.

NOVARAD CORP.,  
Patent Owner.

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IPR2023-00042  
Patent 11,004,271 B2

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Before MIRIAM L. QUINN, *Acting Vice Chief Administrative Patent Judge*,  
MICHAEL R. ZECHER and SCOTT RAEVSKY, *Administrative Patent  
Judges*.

RAEVSKY, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining No Challenged Claims Unpatentable  
Dismissing Motion to Exclude  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

Medivis, Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–6 and 11–20 (the “challenged claims”) of U.S. Patent No. 11,004,271 B2 (“the ’271 patent,” Ex. 1001). Paper 3 (“Pet.”). Novarad Corp. (“Patent Owner”) did not file a Preliminary Response. Based on the information presented in the Petition, we instituted an *inter partes* review of claims 1–6 and 11–20 (Paper 7, “Institution Decision” or “Dec.”).

Subsequent filings include a Patent Owner Response (Paper 12, “PO Resp.”), a Petitioner Reply (Paper 20, “Reply”), and a Patent Owner Sur-reply (Paper 22, “Sur-reply”). Petitioner also filed a Motion to Exclude (Paper 25, “Mot.”). Patent Owner filed an Opposition to Petitioner’s Motion to Exclude (Paper 26, “Opp.”). Petitioner filed a Reply in Support of Petitioner’s Motion to Exclude (Paper 27). We held an oral hearing on January 30, 2024, a transcript of which has been entered into the record. Paper 34 (“Tr.”).

We have jurisdiction over this proceeding under 35 U.S.C. § 6(b). After considering the evidence and arguments of the parties, we determine that Petitioner has not proven by a preponderance of the evidence that any of the challenged claims are unpatentable. We also dismiss Petitioner’s Motion to Exclude.

## II. BACKGROUND

### *A. Real Parties in Interest*

Each party identifies itself as the real party in interest. Paper 5, 2<sup>1</sup>; Paper 6, 1.

### *B. Related Matters*

The parties identify *Novarad Corp. v. Medivis, Inc.*, No. 21-1447-GBW (D. Del. 2021) as a related matter. Paper 5, 2; Paper 6, 1. Petitioner also filed IPR2023-00045, requesting review of U.S. Patent No. 10,945,807, which Petitioner describes as listing the same inventors as the '271 patent and is generally directed to similar technology, but which is not part of the '271 patent family. Pet. 3.

### *C. The '271 Patent*

The '271 patent relates to “[a]ugmenting real-time views of a patient with three-dimensional (3D) data.” Ex. 1001, code (57). The '271 patent explains that conventional medical imaging systems can create 3D data for a patient that can be viewed on a computer display, detached from the patient, which may cause some problems. *Id.* at 2:49–55. For example, the '271 patent explains that a surgeon may view an image of a patient’s brain on a computer display to determine the location of a tumor, and then shift his view to the actual patient “and attempt to identify the approximate location on the actual patient of the tumor inside the patient’s brain.” *Id.* at 2:56–63. The surgeon, however, “may accidentally identify the left side of the brain in the image as having the tumor when in reality the tumor is in the right side of the brain,” which “may lead to the surgeon erroneously making an

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<sup>1</sup> Patent Owner’s Mandatory Notices, filed in accordance with 37 C.F.R. § 42.8, do not include page numbers. Paper 5. We consider the Title page as page 1 and then proceed from there in numerical order.

unnecessary incision on the left side of the patient's skull." *Id.* at 2:63–3:3. To avoid such errors, the '271 patent describes methods of automatically aligning or registering the 3D data "with a real-time view of the actual patient" so that "images derived from the 3D data may be projected onto the real-time view of the patient." *Id.* at 3:21–27.

Figure 1 of the '271 patent is reproduced below.

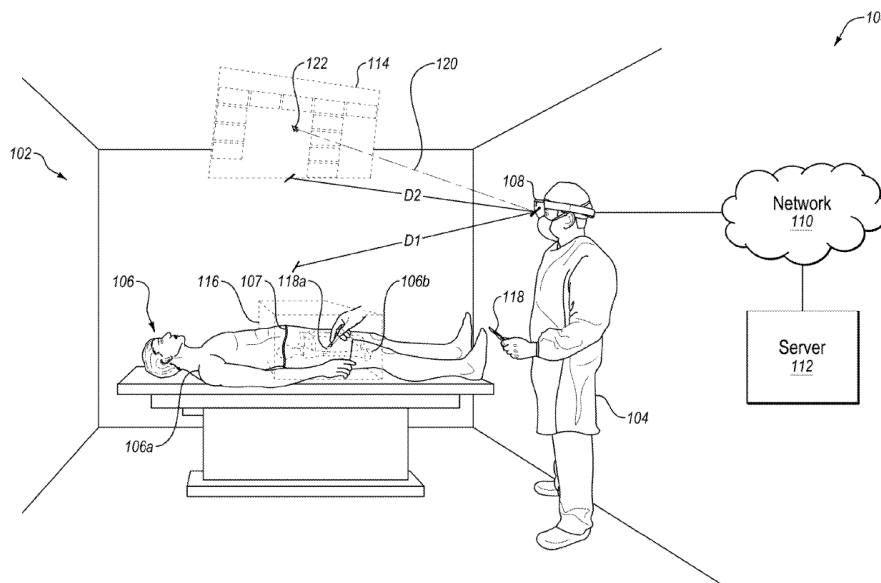


FIG. 1

Figure 1 illustrates an augmented reality (AR) environment in which real-time views of a patient may be augmented with 3D data. *Id.* at 2:26–28. Environment 100 includes 3D space 102, user 104, patient 106, and AR headset 108 in communication with server 112 over network 110. *Id.* at 3:63–67. Environment 100 also includes virtual user interface 114, virtual spatial difference box 116, virtual inserted portion 118a of object 118, and virtual cursor 122, "all shown in dashed lines to indicate that these virtual elements are generated by the AR headset 108 and only viewable by the user 104 through the AR headset 108." *Id.* at 4:1–7. The '271 patent discloses that "AR headset 108 may be employed by the user 104 in order to augment a real-time view of the patient 106 with one or more inner layers of

the patient 106 including, but not limited to, bones 106*b* (as illustrated in FIG. 1), muscles, organs, or fluids.” *Id.* at 4:42–46.

The ’271 patent further discloses that AR headset 108 may perform this augmenting of a real-time view of patient 106 regardless of the current position of user 104 in 3D space 102. *Id.* at 4:46–49. For example, user 104 may walk around operating table 103 and view patient 106 from any angle within 3D space 102 while AR headset 108 continually augments the real-time view of patient 106 with one or more inner layers of patient 106, “so that both the patient 106 and the 3D data of the patient 106 may be viewed by the user 104 from any angle within the 3D space 102.” *Id.* at 4:49–57.

#### *D. Challenged Claims*

Claim 1 is representative of the challenged claims and is reproduced below.

1. A method for augmenting real-time, non-image actual views of a patient with three-dimensional (3D) data, the method comprising:  
identifying 3D data for the patient, the 3D data including an outer layer of the patient and multiple inner layers of the patient; and  
displaying, in an augmented reality (AR) headset, one of the inner layers of the patient from the 3D data projected onto real-time, non-image actual views of the outer layer of the patient, the projected inner layer of the patient from the 3D data being confined within the volume of a virtual 3D shape.

Ex. 1001, 18:54–65.

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