

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**D3D TECHNOLOGIES, INC.,**  
*Appellant*

v.

**MICROSOFT CORPORATION,**  
*Appellee*

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2023-1075

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2021-00648.

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Decided: February 20, 2024

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TAREK N. FAHMI, Ascenda Law Group, PC, San Jose, CA, argued for appellant.

NITIKA GUPTA FIORELLA, Fish & Richardson P.C., Wilmington, DE, argued for appellee. Also represented by AAMIR ABDULQADER KAZI, Atlanta, GA; ROSALYND UPTON, Washington, DC; BETTY H. CHEN, Desmarais LLP, San Francisco, CA.

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Before PROST, SCHALL, and REYNA, *Circuit Judges*.

PROST, *Circuit Judge*.

D3D Technologies, Inc. (“D3D”) appeals from a final written decision of the Patent Trial and Appeal Board (“Board”) in an inter partes review determining that claims 1–18 of U.S. Patent No. 9,349,183 (“the ’183 patent”) are unpatentable as obvious. We affirm.

#### BACKGROUND

The ’183 patent, owned by D3D, relates to the field of medical imaging and describes a headset and method for viewing three-dimensional images of a patient. The ’183 patent discloses that digital recording devices capture two-dimensional image slices from imaging equipment such as MRI equipment or a CT scanner. ’183 patent col. 5 ll. 12–16. Using these image slices, a general purpose processor generates an image for the user’s right eye and an image for the left eye. *Id.* at col. 5 ll. 25–26. These left and right eye images “are sent to a head display unit (HDU) . . . worn by the user,” which in turn displays each image of the volume of interest to the left and right eyes, respectively. *Id.* at col. 5 ll. 33–49. Because “[e]ach eye will see the image from a different angle,” “[t]he brain will interpret the left eye viewing angle’s image and right eye’s viewing angle image together to give depth perception.” *Id.* at col. 6 ll. 19–23. This creates the effect of a three-dimensional image. *Id.*

Claim 1 is representative and recites:

1. A method of three-dimensional viewing of images by a user comprising:
  - selecting a volume of interest from a collection of image slices;
  - arranging said slices corresponding to said volume of interest;

selecting an initial viewing angle of said slices;

selecting a viewpoint for a left eye;

selecting a viewpoint for a right eye;

displaying, in a display unit (DU), an image for said left eye based on said initial viewing angle, said viewpoint for said left eye and said volume of interest;

displaying, in said DU, an image for said right eye based on said initial viewing angle, said viewpoint for said right eye, and said volume of interest and wherein said image for said left eye and said image for said right eye produce a three-dimensional image to said user;

*wherein a convergence point of said image for said left eye and said image for said right eye is shifted to provide a different perspective of the volume of interest to said user; and*

selecting an alternate viewing angle, said selecting an alternate viewing angle comprising:

reorienting said volume of interest in accordance with said alternate viewing angle;

displaying, in said DU, an image for said left eye based on said alternate viewing angle, said view point for said left eye and said volume of interest; and

displaying, in said DU, an image for said right eye based on said alternate viewing angle, said view point for said right eye, and said volume of interest and wherein said image for said left eye and said image for said right eye produce an alternate three-dimensional image to said user.

*Id.* at claim 1 (emphasis added). We refer to the language emphasized above as the “convergence point” limitation.

Microsoft Corporation (“Microsoft”) petitioned for inter partes review of claims 1–18 of the ’183 patent. The Board instituted review. In a final written decision, the Board held claims 1–18 obvious in view of Murphy<sup>1</sup> and Guang;<sup>2</sup> claims 1, 5–7, 11–13, 17, and 18 anticipated and obvious in view of Jones;<sup>3</sup> and claims 2–5, 8–10, and 14–16 obvious in view of Jones and Schoolman.<sup>4</sup> *Microsoft Corp. v. D3D Techs., Inc.*, No. IPR2021-00648, 2022 WL 3588375 (P.T.A.B. Aug. 22, 2022) (“*Final Written Decision*”).

D3D appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

D3D’s appeal raises four issues. D3D disputes (1) the Board’s construction of terms related to each of its determinations of obviousness and anticipation—namely, “convergence point” and “subtracted”; (2) the Board’s determination of obviousness in view of Murphy and Guang; (3) the Board’s determination of anticipation and obviousness over Jones; and (4) the Board’s determination of obviousness in view of Jones and Schoolman. Because we agree with the Board’s construction of the convergence point limitation and its determination that Murphy and Guang invalidate as obvious all challenged claims under that construction, we reach only the first two issues.<sup>5</sup>

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<sup>1</sup> International Pub. No. WO 2007/059477 (“Murphy”).

<sup>2</sup> U.S. Patent Pub. No. 2005/0148848 (“Guang”).

<sup>3</sup> European Patent No. 1056049 A2 (“Jones”).

<sup>4</sup> U.S. Patent No. 5,488,952 (“Schoolman”).

<sup>5</sup> The parties agree that affirmance of the Board’s convergence point limitation construction and invalidation

## I

D3D disputes the Board’s construction of the convergence point limitation. We review the Board’s claim construction de novo where, as here, the construction relies solely on intrinsic evidence. *Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1380 (Fed. Cir. 2021).

The convergence point limitation provides:

wherein a convergence point of said image for said left eye and said image for said right eye is shifted to provide a different perspective of the volume of interest to said user . . . .

’183 patent claim 1.

The parties agree, and the Board determined, that the convergence point is where the center theta-alpha ray from each left eye viewing perspective and right eye viewing perspective intersect. *Final Written Decision*, 2022 WL 3588375, at \*5–6. The Board also concluded that the convergence point limitation does not require shifting of the convergence point to occur while holding left and right viewpoints unaltered. *Id.* at \*10. D3D takes issue with this construction, arguing that “[t]he Board incorrectly determined that this limitation does not require that the recited shifting of the convergence point occurs while holding left eye and right eye viewpoints unaltered.” Appellant’s Br. 43. We disagree.<sup>6</sup>

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of claims 1–18 over Murphy and Guang resolves this appeal. Oral Arg. at 2:15–2:35 (D3D), 11:30–12:02 (Microsoft), [https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1075\\_02062024.mp3](https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1075_02062024.mp3).

<sup>6</sup> D3D additionally argues that the claims “require that a shifted convergence point have a different location within the volume of interest.” Appellant’s Br. 56. Because this argument primarily relates to patentability over

As the Board noted, the convergence point limitation “does not include the term ‘view point’ or ‘viewpoint.’” *Final Written Decision*, 2022 WL 3588375, at \*10. The limitation is silent as to whether the left and right eye viewpoints remain the same after the convergence point has been shifted. We agree with Microsoft that this silence does little to support D3D’s effort to read in a restriction that the viewpoints remain unaltered. We similarly disagree with D3D that earlier steps of claim 1 require the left and right eye viewpoints to remain unaltered. Appellant’s Br. 45–46. Although claim 1 earlier recites “selecting a viewpoint for a left eye,” “selecting a viewpoint for a right eye,” and “displaying” an image for the left and right eyes “based on said initial viewing angle, said view point . . . and said volume of interest,” ’183 patent col. 17 ll. 30–39, nothing in this language requires or even suggests that the viewpoint thereafter remain unchanged once the convergence point is shifted. Again, D3D reads too much into silence in the claims. And D3D does not point to any supporting language in the specification or persuasive expert testimony in support of its argument. *See* Appellant’s Br. 44–48; Appellant’s Reply Br. 1–4; *Final Written Decision*, 2022 WL 3588375, at \*10 (noting D3D did not cite the specification or expert testimony).

We reject D3D’s argument that the recited shifting of the convergence point occurs while holding left and right

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Jones, and, as discussed below, we find all claims unpatentable over Murphy in view of Guang, we need not reach this aspect of the Board’s construction. Similarly, we do not reach the Board’s construction of the claim term “subtracted” as it relates solely to the Board’s determination of unpatentability over Jones and Schoolman. We note, however, that we affirm the Board’s construction of the same “subtracted” term in companion case No. 23-1011.

eye viewpoints unaltered and affirm the Board's construction.

## II

D3D appeals the Board's determination that Murphy and Guang render obvious claims 1–18 of the '183 patent. We review the Board's legal conclusion of obviousness de novo and its factual findings for substantial evidence. *Fleming v. Cirrus Design Corp.*, 28 F.4th 1214, 1221 (Fed. Cir. 2022).

D3D—in large part rehashing the claim-construction dispute addressed above—argues that the Board's “conclusion of obviousness rests on a fundamentally flawed claim construction” that “the claims do not require shifting of the convergence point to occur while holding all viewpoints unaltered.” Appellant's Br. 48. Relying on its proposed construction, D3D argues that the challenged claims are patentable because “a Murphy-Guang combination would, in connection with shifting convergence points, use new viewpoints for the left eye / right eye images.” *Id.* at 51. As discussed above, we reject D3D's proposed construction. We further determine that the Board's conclusion of obviousness is supported by substantial evidence.

Murphy “describes ‘a stereoscopic display system’ that displays ‘data representing human anatomy’” and permits a user to “select part of a virtual patient to display by selecting any part or sub-part of the virtual patient.” *Final Written Decision*, 2022 WL 3588375, at \*41 (quoting J.A. 1490 ¶ 15, J.A. 1497 ¶ 41).

Guang “describes a system and methods for improved visualization and stereographic display of three-dimensional data sets of tube-like anatomical structures” and “describes that ‘the convergence point can be varied as necessary’ and can be ‘dynamically set.’” *Id.* (quoting J.A. 1587 ¶ 105).

The Board agreed with Microsoft that “the Murphy-Guang combination provides a stereoscopic viewing system with dynamic convergence point capabilities (i.e., shifted convergence point).” *Id.* at \*50. The Board noted that Murphy allows “surgeons to move [their] eyes to the part of the image they want to enhance,” *id.* (quoting J.A. 1492 ¶ 20), and that Guang “teaches shifting the convergence point by describing ‘dynamic *adjustment of an eye convergence point* for stereo display,’” *id.* (emphasis in original) (quoting J.A. 1581 ¶ 6). The Board credited the testimony of Microsoft’s expert, Dr. Zyda, as consistent with these teachings. *Id.* at \*50–51. Even under D3D’s construction, the Board remained persuaded “that the prior art meets the claim recitations.” *Id.* at \*51. We too agree with Microsoft and conclude that the teachings of Murphy and Guang, as well as Dr. Zyda’s testimony, provide substantial evidence to support the Board’s decision.

Because substantial evidence supports the Board’s finding that the Murphy-Guang combination teaches shifting a convergence point, we affirm the Board’s decision.

#### CONCLUSION

We have considered D3D’s remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm.

**AFFIRMED**