

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

APPLE INC.,
Appellant

**LG ELECTRONICS INC., LG ELECTRONICS USA,
INC., GOOGLE LLC,**
Appellees

v.

GESTURE TECHNOLOGY PARTNERS, LLC,
Cross-Appellant

2023-1501, 2023-1554

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-00921, IPR2022-00092, IPR2022-00362.

Decided: January 27, 2025

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Before LOURIE, DYK, and HUGHES, *Circuit Judges*.

DYK, *Circuit Judge*.

In this inter partes review proceeding (“IPR”), the Patent Trial and Appeal Board (the “Board”) determined that claims 1–3, 5–10, and 12–17 of U.S. Patent No. 8,878,949 (the “949 patent”) were unpatentable, but it determined that claims 4, 11, and 18 were not shown to be unpatentable. Patent owner Gesture Technology Partners, LLC (“Gesture”) cross-appeals the Board’s unpatentability findings as to claims 1–3, 5–10, and 12–17,¹ and IPR petitioner Apple Inc. (“Apple”) appeals the Board’s findings as to claims 4, 11, and 18. We limit our discussion to claims 1–7 because we have separately affirmed the Board’s decision holding claims 8–18 unpatentable in its ex parte reexamination decision *In re Gesture Tech. Partners*, No. 2023-001857, Reexamination No. 90/014,903 (P.T.A.B. Aug. 8, 2023). See *In re Gesture Tech. Partners, LLC*, No. 24-1038, slip op. at 2 (Fed. Cir. 2025) (nonprecedential).

¹ LG Electronics Inc., LG Electronics USA, Inc., and Google LLC are appellees in Gesture’s cross-appeal, as well. See Appellant’s Reply Br. at 4 n.1.

We affirm the Board's determination that claims 1–3 and 5–7 are unpatentable and reverse the Board's determination that claim 4 is not unpatentable. We also reject Gesture's suggestion that the Board lacks jurisdiction in IPRs over patents after their expiration.

BACKGROUND

Gesture owns the '949 patent, entitled "Camera Based Interaction and Instruction," which is directed to image capture technology. '949 patent describes a portable device that uses an electro-optical sensor to scan the field of vision and detect a user command, i.e., a gesture. When the device detects a gesture, its processing unit controls a digital camera to capture a digital image. Claim 1 is exemplary as to the claims in Gesture's cross-appeal and recites:

A portable device comprising:
a device housing including a forward facing portion, the forward facing portion of the device housing encompassing an electro-optical sensor having a field of view and including a digital camera separate from the electrooptical sensor; and
a processing unit within the device housing and operatively coupled to an output of the electro-optical sensor, wherein the processing unit is adapted to:
determine a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output, and
control the digital camera in response to the gesture performed in the electro-optical sensor field of view, wherein the gesture corresponds to an image capture command, and wherein the image capture command causes the digital camera to store an image to memory.

'949 patent, col. 15, ll. 21–38. Claim 4 depends from claim 1 and requires the electro-optical sensor to be “fixed” in relation to the digital camera:

The portable device of claim 1 wherein the electro-optical sensor is fixed in relation to the digital camera.

'949 patent, col. 15, ll. 43–44.

In June 2021, Apple filed an IPR petition for the then-expired '949 patent, asserting that each of its claims was unpatentable as obvious over U.S. Patent No. 6,144,366 (“Numazaki”) and Japanese Patent Application No. H4-73631 (“Nonaka”). Numazaki discloses an “information input generation apparatus” that detects subjects using a “reflected light extraction unit” and “visible light photo-detection array,” J.A. 959, and Nonaka discloses a camera that captures images when an equipped remote release device detects a user command.

Apple argued that Nonaka suggested combining three of Numazaki’s embodiments to arrive at a portable device that captures video images in response to detecting predetermined gestures. Apple further argued that Numazaki’s light extraction unit is fixed in relation to its photo-detection array. The Board concluded that Apple had demonstrated that claims 1–3 and 5–7 are unpatentable as obvious but not claim 4, finding that Numazaki does not disclose the “fixed” limitation. Apple appeals, and Gesture cross-appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

“Obviousness is a mixed question of fact and law.” *No-vartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1327 (Fed. Cir. 2017). We review the Board’s legal conclusion of obviousness de novo and its factual findings for substantial evidence. *Okajima v. Bourdeau*, 261 F.3d 1350, 1354

(Fed. Cir. 2001). We interpret claim terms by looking to their ordinary meaning in light of the specification and prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315–17 (Fed. Cir. 2005) (en banc); *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 677 (Fed. Cir. 2015).

I

Gesture argues that the Board could not exercise jurisdiction over this IPR because the '949 patent expired in May 2020, before Apple filed its petition in June 2021. According to Gesture, this is because the Supreme Court's decision in *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, 584 U.S. 325 (2018), explained that the “decision to *grant* a patent is . . . the grant of a public franchise,” Cross-Appellant's Br. 42 (quoting *Oil States*, 584 U.S. at 334–35), and once a patent expires “the public franchise ceases to exist and the patent owner no longer has the right to exclude others,” *id.* at 43. Since the patentee's right becomes limited to collecting damages that formerly existed through an infringement action in an Article III court, Gesture argues, jurisdiction over the expired patent becomes limited to the Article III courts.

To date, our prior cases have not squarely addressed whether the Board may institute IPRs for patents after they have expired; however, we have previously reviewed IPR decisions involving expired patents, implicitly assuming that the Board had jurisdiction in such cases. *See, e.g., Immunex Corp. v. Sanofi-Aventis U.S. LLC*, 977 F.3d 1212, 1217 (Fed. Cir. 2020) (acknowledging cases where the challenged patents “had expired before the Board's decision”); *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1382 n.8 (Fed. Cir. 2023) (discussing claim construction in “IPR proceedings concerning expired and soon-to-be-expired patents”). We confirm here that the Board has jurisdiction over IPRs concerning expired patents.

The public-rights doctrine recognizes that Congress may assign some matters either to the Article III judiciary or to a non-Article III forum. Matters “involving public rights . . . may be presented in such form that the judicial power is capable of acting on them, . . . but which congress may or may not bring within the cognizance of the courts of the United States, as it may deem proper.” *Murray’s Lessee v. Hoboken Land & Improvement Co.*, 59 U.S. (18 How.) 272, 284 (1855). The Supreme Court has thus long held that Congress has the authority to assign to non-Article III forums those matters “arising between the government and others, which from their nature do not require judicial determination and yet are susceptible of it.” *Crowell v. Benson*, 285 U.S. 22, 50 (1932) (quoting *Ex parte Bakelite Corp.*, 279 U.S. 438, 451 (1929)).

In *Oil States*, the Supreme Court held that the Board’s jurisdiction over IPRs does not run afoul of Article III under the public-rights doctrine. 584 U.S. at 334–35. The Court first recognized that the grant of a patent inherently involves public rights, since “by issuing . . . patents, the PTO take[s] from the public rights of immense value and bestow[s] them upon the patentee.” *Id.* at 335 (alterations in original) (quoting *United States v. Am. Bell Tel. Co.*, 128 U.S. 315, 370 (1888)). The Court then explained that, because an IPR is “a second look at an earlier administrative grant of a patent,” it involves the public’s same “interest in seeing that patent monopolies are kept within their legitimate scope.” *Id.* at 336–37 (quoting *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 279–80 (2016)). Recognizing that a public franchise can be qualified by an agency’s authority to cancel it outside of an Article III court, the Court concluded that IPRs fall within the public-rights doctrine and do not violate Article III. *Id.* at 337.

Gesture’s argument that the “public franchise ceases to exist” after a patent expires, Cross-Appellant’s Br. at 43, is incompatible with the Court’s logic in *Oil States*. There,

the Court’s conclusion that an IPR falls under the public-rights doctrine was based on the fact that the procedure involves a “second look” at the earlier determination of granting a public right in the first place. 584 U.S. at 336 (quoting *Cuozzo*, 597 U.S. at 279). The review of an earlier grant of a patent thus inherently involves the adjudication of a public right, and it is irrelevant whether the patent has expired, since the patent itself continues to confer a limited set of rights to the patentee. *See id.* at 337.

As we have explained, although a “patentee has fewer rights . . . when [its] patent has expired,” *Keranos, LLC v. Silicon Storage Tech., Inc.*, 797 F.3d 1025, 1033 (Fed. Cir. 2015), it nevertheless maintains some rights, such as bringing an action for past damages, *see Genetics Inst., LLC v. Novartis Vaccines & Diagnostics, Inc.*, 655 F.3d 1291, 1299 (Fed. Cir. 2011). The existence of those rights creates a live case or controversy, which can be adjudicated by an IPR and in proceedings before this court on appeal. *See Sony Corp. v. Iancu*, 924 F.3d 1235, 1238 n.1 (Fed. Cir. 2019). Gesture fails to explain why an IPR, which “would have a consequence on any infringement that occurred during the life,” *id.*, of the patent, falls outside the scope of the public-rights doctrine solely because the patentee’s prospective right to exclude others has terminated. We accordingly reject Gesture’s challenge to the Board’s jurisdiction.

II

We next address the Board’s decision holding obvious claims 1–3 and 5–7. Numazaki discloses several configurations for detecting, capturing, and processing visual information. Numazaki’s fifth embodiment relates to videoconferencing functionality and is directed to the extraction of useful image information. *See* J.A. 959 (col. 39, ll. 6–14). The embodiment’s light extraction unit extracts feature data of a target (e.g., the speaker), while the photo-

detection array captures the entire field of view. Numazaki teaches transmitting only essential information by superimposing the output of the photo-detection array and light extraction unit and capturing only the overlap as a video image. Numazaki's third embodiment relates to gesture recognition and discloses the execution of a user command when a gesture camera detects a predetermined gesture. Numazaki's eighth embodiment discloses a laptop that can incorporate functionalities described in previous embodiments.

The Board found that a person of ordinary skill in the art would apply Nonaka's teachings about the benefits of remote release functionality to insert Numazaki's third embodiment's gesture recognition and fifth embodiment's video capture into the eighth embodiment's laptop. The Board found that Numazaki's light extraction unit corresponded to the '949 patent's electro-optical sensor and that Numazaki's photo-detection array corresponded to the '949 patent's digital camera. Accordingly, the Board determined that the combination of Numazaki and Nonaka disclosed a device that controls a digital camera to capture video images in response to an electro-optical sensor's detection of predetermined gestures, rendering claims 1–3 and 5–7 obvious. The Board thus determined that Apple had sufficiently demonstrated a motivation to combine Nonaka and Numazaki.

On the cross-appeal, Gesture argues that the Board's finding that a person of ordinary skill in the art would be motivated by Nonaka to combine Numazaki's third, fifth, and eighth embodiments to render obvious claims 1–3 and 5–7 was not supported by substantial evidence.

A

First, Gesture argues that the Board erred in concluding that Numazaki's light extraction unit mapped onto the '949 patent's electro-optical sensor. Gesture points to a

portion of its expert’s conclusory declaration in which he asserted that “[b]ecause of its ‘difference calculation unit . . .’ and its two separate [photo-detection units] having specific timing and lighting requirements, in [his] opinion, a [person of ordinary skill in the art] would *not* have understood Numazaki’s ‘reflected light extraction unit . . .’ as being the ‘electro-optical sensor’ of claim [1.]” J.A. 1987 ¶ 45. But Gesture’s expert provided no explanation for why an electro-optical sensor cannot comprise two units with distinct timing requirements. The Board was accordingly not required to accept this conclusory assertion. *See cxLoyalty, Inc. v. Maritz Holdings, Inc.*, 986 F.3d 1367, 1378 (Fed. Cir. 2021). The Board examined Numazaki’s disclosure and concluded that its reflected light unit “senses light and converts the sensed light into electronic signals,” which it found satisfies the “plain meaning of an ‘electro-optical sensor.’” J.A. 18 & n.7. We see no error in the Board’s weighing the plain import of Numazaki’s disclosure over Gesture’s expert’s cryptic, unsupported statement to the contrary.²

² Relatedly, Gesture faults the Board for failing to explain “how the sensor and camera are included on the ‘forward facing portion’ of the device housing.” Cross-Appellant’s Br. at 37. As a preliminary matter, Gesture did not make this argument before the Board, and we can hardly fault the Board for failing to precisely respond to an argument Gesture failed to raise before it. *See Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1382–83 (Fed. Cir. 2023). Putting forfeiture to the side, we can “reasonably discern[]” the Board’s path, *Nucor Corp. v. United States*, 414 F.3d 1331, 1339 (Fed. Cir. 2005) (citation omitted), since it found that Numazaki’s sensor and camera were both forward facing and had overlapping fields of view, which would naturally require situating them on the same forward-facing “portion.” *See* J.A. 16–17, 21.

B

Gesture also challenges the Board’s finding that a person of ordinary skill in the art would be motivated to modify Numazaki to teach a processing unit that “determine[d] a gesture has been performed in the electro-optical sensor field of view based on the electro-optical sensor output.” Cross-Appellant’s Br. at 38 (quoting ’949 patent, col. 15, ll. 26–32). Gesture’s argument appears to be that the Board’s analysis did not sufficiently explain why a person of ordinary skill in the art would understand how to combine Numazaki’s third, fifth, and eighth embodiments because of their specialized processing units. But Apple was not required to identify embodiments with identical processing units, since the obviousness inquiry looks to the “combined teachings of the references” and “does not require an actual, physical substitution of elements.” *In re Mouttet*, 686 F.3d 1322, 1332–33 (Fed. Cir. 2012). Moreover, the Board *did* explain how a person of ordinary skill in the art would understand how to combine these embodiments, crediting Apple’s expert’s uncontroverted explanation that a person of ordinary skill would recognize how to “utilize the same output by two separate processing blocks” by “arranging multiple distinct processing units that separately process the same output of a single unit.” J.A. 24 (quoting J.A. 1777 ¶ 9).

C

Finally, Gesture argues that the Board improperly found that Nonaka suggested modifying Numazaki so as to “control the digital camera in response to the gesture performed in the electro-optical sensor field of view.” Cross-Appellant’s Br. at 40 (quoting ’949 patent, col. 15, ll. 33–38). Gesture argues that if Numazaki’s third and fifth embodiments were inserted into its eighth embodiment’s laptop, there would be no reason to implement Nonaka’s remote-control functionality, since the user of a laptop

usually sits directly adjacent to the device. But the Board expressly considered and rejected this argument based on its review of Numazaki and Nonaka, concluding that a person of ordinary skill in the art would still perceive benefits in implementing Nonaka's teachings to Numazaki. Specifically, the Board found that "even if Numazaki does suggest that the user would need to be within reach to physically interact with the laptop, this does not mean that one of ordinary skill in the art would not have recognized the advantages of using remote gestures taught by Nonaka," J.A. 28, including a "higher degree of freedom, good portability, and cost benefits," J.A. 29. Accordingly, we affirm as to Gesture's cross-appeal.

III

The sole issue presented by Apple's appeal is whether the Board properly determined claim 4's "fixed" limitation was not obvious in light of Numazaki. Apple argues that the Board improperly ignored Apple's expert's testimony and that, with that testimony, the record indisputably showed agreement between the experts that a fixed relationship between the components would have been desirable. This, in turn, would compel the conclusion that claim 4's fixed limitation is obvious. We agree.

We first consider the Board's decision to ignore Apple's expert's testimony relating to the fixed limitation. In its IPR petition, Apple argued that Numazaki taught the fixed limitation because Numazaki's fifth embodiment positioned its photo-detection array and light extraction unit "side-by-side such that they have overlapping fields of view." J.A. 156. Apple's expert explained that "[g]iven . . . [that] the output of [the light extraction unit] is used to define which portions the video captured by [the photo-detection array] are retained, a [person of ordinary skill in the art] would have understood that both . . . have overlapping fields of view." J.A. 778 ¶ 52. Apple expressly cited to this

portion of the declaration with regard to claim 1, and then by incorporation with regard to claim 4. *Compare* J.A. 146 (claim 1), *with* J.A. 156 (claim 4). In his supplemental declaration, Apple’s expert elaborated that the fact that the two components require overlapping fields of view was “key” to his conclusion that a person of ordinary skill in the art would find fixing them in relation to one another to be desirable. J.A. 1782–84 ¶¶ 13–15.

In its final written decision with respect to claim 4, the Board ignored Apple’s expert’s testimony, reasoning that Apple’s IPR petition “[did] not reference any such analysis in connection with the subject matter of claim[] 4.” J.A. 34. But under our precedent, Apple’s expert’s testimony was sufficiently confined to the argument made in Apple’s IPR petition to warrant consideration by the Board, since “a party is ‘not barred from elaborating on [its] arguments on issues previously raised.’” *Masimo Corp. v. Apple Inc.*, No. 2022-1631, 2023 WL 5921622, at *5 (Fed. Cir. Sept. 12, 2023) (nonprecedential) (alteration in original) (quoting *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019)); *see also Apple Inc. v. Andrea Elecs. Corp.*, 949 F.3d 697, 705–06 (Fed. Cir. 2020). Here, Apple’s expert simply expanded upon the significance of Numazaki’s components retaining overlapping fields of vision to the fixed limitation, an argument that was expressly raised in Apple’s IPR petition. Accordingly, the Board erred in failing to consider this material evidence properly before it.

The issue then becomes whether the record, properly including Apple’s expert’s testimony, provides substantial support for the Board’s conclusion that claim 4 was not obvious. We note that the term “fixed” is not defined anywhere in the patent and thus consider its meaning in light of the specification, which is the “single best guide to the meaning of a disputed term.” *Trs. of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1362

(Fed. Cir. 2016) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

In the context of claim 4, “fixed” contemplates a relationship between the portable device’s electro-optical sensor and digital camera. The ’949 patent’s specification explains that the goal of the invention is to cause a digital camera to capture an image of a subject when the device detects a gesture in the camera’s field of view. *See* ’949 patent, col. 2, ll. 4–8. This is accomplished by processing the electro-optical sensor’s output and automatically capturing images when a gesture is detected. *Id.* at col. 5, ll. 24–38. It follows that, in the context of the ’949 patent, the electro-optical sensor and digital camera must have overlapping fields of vision while the digital image is captured. *See* J.A. 1782–84 (Apple’s expert); J.A. 1809 (Gesture’s expert). It would seem that in the context of the ’949 patent, the electro-optical sensor and digital camera are necessarily “fixed” in relation to one another when their spatial relationship stays constant while an image is being captured, and Numazaki disclosed this limitation.

But we need not reach this issue of claim construction, since even under the Board’s construction, which suggests that the components must remain fixed at all times, the undisputed evidence in the record clearly showed that a person of ordinary skill in the art would have been motivated to fix Numazaki’s photo-detection array and light extraction unit in relation to one another.

Both experts agreed that to accomplish Numazaki’s fifth embodiment’s purpose, the photo-detection array and light extraction unit must retain overlapping fields of view. The Board itself found that Numazaki’s light extraction unit extracted only the “overlapping portion” of the two components’ fields of view. J.A. 13. Apple’s expert testified that “a [person of ordinary skill in the art] would have understood . . . [that] to perform the basic function of the fifth

embodiment, [the components] must have *and* maintain overlapping fields of view” and that “fixing them retains overlapping fields of view.” J.A. 1783–84 ¶¶ 14–15. Although Gesture’s expert testified that Numazaki’s “purpose could be satisfied with partial overlap potentially,” J.A. 1809, i.e., that a small degree of movement would be permissible, he did not explain how such movement could possibly serve the invention’s purpose of capturing images simultaneously and did not suggest that a person of ordinary skill in the art would find such movement to be desirable. Instead, he *agreed* “that to accomplish its goal, the fifth embodiment in Numazaki requires [the light extraction unit] and [photo-detection array] to retain overlapping fields of view” and that “fixing them ensures that . . . the fields of view, whatever they are, will be maintained,” J.A. 1810.

There is accordingly “no reasonable dispute” that fixing the two components was desirable because doing so ensured the necessary overlap, and that doing so was “readily achievable” and would “serve [Numazaki’s] undisputed goal.” *Google LLC v. Koninklijke Philips N.V.*, 795 F. App’x 840, 844–46 (Fed. Cir. 2020). Because correcting the Board’s analysis results in only “only one permissible factual finding,” reversal is appropriate. *Corning v. Fast Felt Corp.*, 873 F.3d 896, 903 (Fed. Cir. 2017).

CONCLUSION

For the forgoing reasons, we hold that the Board had jurisdiction in this IPR. We affirm the Board’s determination that claims 1–3 and 5–7 are unpatentable and reverse the Board’s determination that claim 4 is not unpatentable.

AFFIRMED-IN-PART AND REVERSED-IN-PART

COSTS

Costs to appellant Apple.