

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

SAMSUNG ELECTRONICS CO., LTD. and  
SAMSUNG ELECTRONICS AMERICA, INC.,  
Petitioner,

v.

CELLECT, LLC,  
Patent Owner.

---

IPR2020-00512  
Patent 9,186,052 B1

---

Before JAMESON LEE, PATRICK M. BOUCHER, and  
JOHN R. KENNY, *Administrative Patent Judges*.

KENNY, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314; 37 C.F.R. § 42.4

## I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claim 2 (“challenged claim”) of U.S. Patent No. 9,186,052 B2 (Ex. 1001, the “’052 patent”) pursuant to 35 U.S.C. § 311 *et seq.* Paper 2 (“Petition” or “Pet.”). Collect, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Preliminary Response” or “Prelim. Resp.”). With our authorization, Petitioner filed a Reply (Paper 9 (“Reply”)) and Patent Owner filed a Sur-Reply (Paper 12 (“Sur-Reply”)).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response 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) (2018). After considering the briefing and the evidence of record, we institute an *inter partes* review of the challenged claim on all asserted grounds of unpatentability.

### A. Related Matters

The parties identify the following related district court litigation: *Collect, LLC v. Samsung Electronics Co., Ltd. et al.*, 1-19-cv-00438 (D. Colo.). Pet. 5; Paper 5, 1.

The parties note that the challenged patent is also the subject of IPR2020-00475. Pet. 6; Paper 5, 1. Petitioner further identifies the following related patents and respective proceedings:

Patent	Proceeding(s)
6,043,839	IPR2020-00472

Patent	Proceeding(s)
6,275,255 B1	IPR2020-00473
6,982,740 B2	IPR2020-00474 ex parte reexamination
9,198,565 B2	IPR2020-00476
9,667,896 B2	IPR2020-00477
6,982,742 B2	IPR2020-00559 IPR2020-00560 IPR2020-00561 ex parte reexamination
6,424,369 B1	IPR2020-00562 IPR2020-00563 IPR2020-00564 ex parte reexamination
6,452,626 B1	IPR2020-00565 IPR2020-0566 IPR2020-00567 ex parte reexamination
6,862,036 B2	IPR2020-00568 IPR2020-00569
7,002,621 B2	IPR2020-00571 IPR2020-00572 ex parte reexamination

Pet. 6–7.

*B. The '052 Patent*

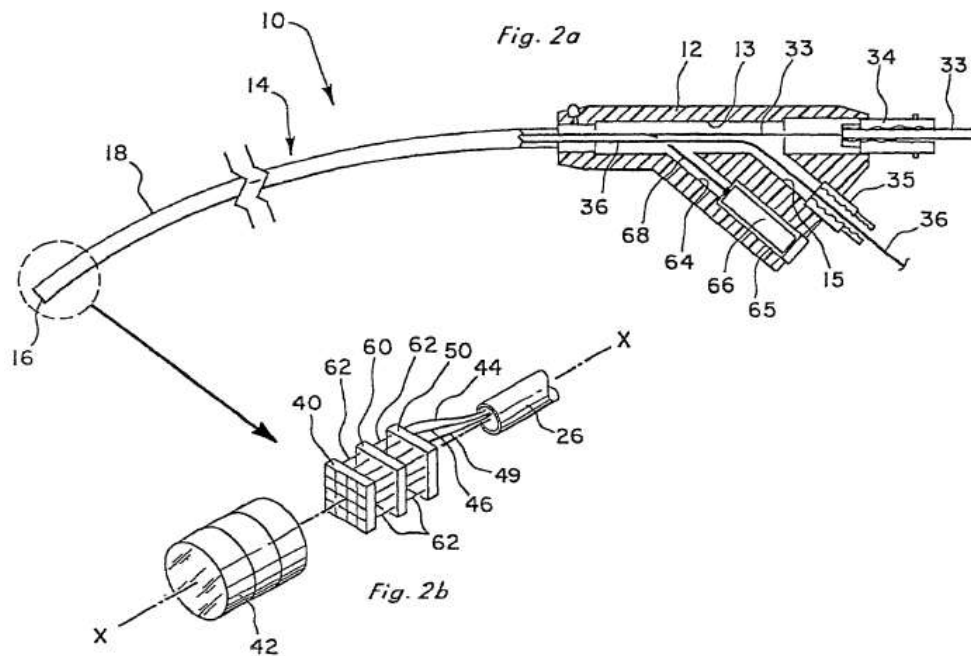
The '052 patent is titled “Reduced Area Imaging Device Incorporated Within Endoscopic Devices.” Ex. 1001, code (54). By way of background, the '052 patent explains that “endoscopic surgery has become the accepted standard for conducting many types of surgical procedures.” *Id.* at 1:40–42. Solid state imaging technology is increasingly replacing the rod lens endoscope, due to “its cost of manufacture, failure rate, and requirement to be housed within a rigid and straight housing.” *Id.* at 1:52–57. Solid state

imaging technology “enables the image sensor to be placed at the distal tip of the investigating device.” *Id.*

Complementary metal oxide semiconductor (CMOS) imaging devices are solid state imaging devices that “offer improved functionality and simplified system interfacing” and “can be manufactured at a fraction of the cost of other solid state imaging technologies.” Ex. 1001, 1:61–65.

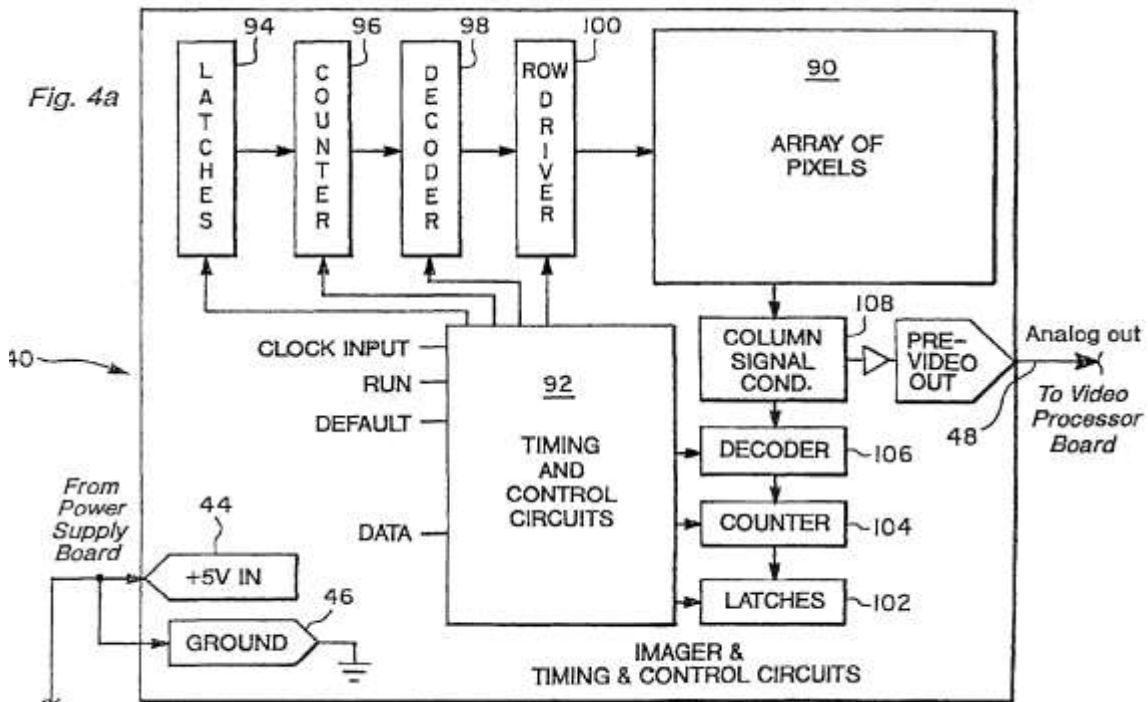
However, despite improved CMOS imaging devices that permit a “camera on a chip” concept (*see id.* at 3:1–3:21), the ’052 patent reports that “a need still exists for a reduced area imaging device which can be used in even the smallest type of endoscopic instruments.” *Id.* at 3:29–31.

The ’052 patent purports to improve “camera on a chip” technology by “rearrang[ing] the circuitry in a stacked relationship so that there is a minimum profile presented when used within a surgical instrument or other investigative device.” Ex. 1001, 3:31–36. In an embodiment, an imaging device may be entirely self-contained in the distal end of an endoscope. *Id.* at 9:53–57. Figure 2a shows a cross-sectional view of an endoscope with an imaging device incorporated into the distal tip of the endoscope, and Figure 2b shows a partially exploded perspective view of the distal end of the endoscope shown in Figure 2a, both of which are reproduced below (*id.* at 6:55–61):



As shown in Figure 2b, an imaging device in the distal end 16 of endoscope 10 may include image sensor 40 electrically coupled, via pin connectors 62, to video processing board 50 and optional supplementary board 60. *Id.* at 9:58–10:8. Image sensor 40 may be bonded to lens system 42. *Id.* at 10:16–19.

Figure 4a, reproduced below, shows a detailed schematic diagram of image sensor 40 (Ex. 1001, 12:26–28):



As shown in Figure 4a above, image sensor 40 contains array of pixels 90 and timing and control circuits 92. *Id.* at 12:40–42. Array of pixels 90 is an active pixel group and “[e]ach pixel circuit has its own amplifier which is controlled by the timing and control circuitry.” *Id.* at 12:45–64.

### C. Challenged Claim

Petitioner challenges independent claim 2 (Pet. 1), which reads:

2. An imaging device comprising:

a housing;

an image sensor mounted in said housing, said image sensor including a first circuit board having a length and a width thereto, wherein said length and width of said first circuit board define a first plane, said first circuit board including an array of CMOS pixels thereon, wherein a plurality of CMOS pixels within said array of CMOS pixels each include an amplifier, said first circuit board further including timing and control circuitry thereon, said timing and control circuitry being coupled to said array of CMOS pixels, said image sensor producing a pre-video signal;

a second circuit board mounted in said housing, said second circuit board being electrically coupled to said first circuit board, said second circuit board having a length and a width thereto, wherein said length and width of said second circuit board define a second plane, said second circuit board including circuitry thereon to convert said pre-video signal to a post-video signal, said second circuit board being positioned in a stacked arrangement with respect to said first circuit board, said second plane of said second circuit board being substantially parallel to said first plane of said first circuit board;

a lens mounted in said housing, said lens being integral with said imaging device, said lens focusing images on said array of CMOS pixels of said image sensor;

a video screen, said video screen being electrically coupled to said second circuit board, said video screen receiving said post-video signal and displaying images from said post-video signal; and

a power supply mounted in said housing, said power supply being electrically coupled to said first circuit board to provide power to said array of CMOS pixels and said timing and control circuitry, said power supply also being electrically coupled to said second circuit board to provide power thereto;

wherein a largest dimension of said image sensor along said first plane is between 2 and 12 millimeters.

Ex. 1001, 21:64–22:37.

*D. Asserted Grounds*

Petitioner challenges claim 2 based on the following grounds:

Claim Challenged	35 U.S.C. §	References
2	103	Swift, <sup>1</sup> Ricquier, <sup>2</sup> Suzuki <sup>3</sup>
2	103	Larson, <sup>4</sup> Swift, Ricquier, Suzuki

Pet. 9. Petitioner relies on the Declaration of Dr. Dean P. Neikirk (Ex. 1004). Patent Owner has not submitted a declaration from a proffered expert in this proceeding.

---

<sup>1</sup> WO Application Publication No. 95/34988, published December 19, 1995 (Ex. 1005).

<sup>2</sup> Ricquier, N., et al. “*CIVIS Sensor: A Flexible Smart Imager with Programmable Resolution*,” Charge-Coupled Devices and Solid State Optical Sensors IV. Vol. 2172, International Society for Optics and Photonics, 1994. Petitioner submitted two copies of this article, each with an accompanying declaration, as Exhibits 1033 and 1038. According to the accompanying declarations, Exhibits 1033 and 1038 are copies of the article obtained from SPIE and from the University of Wisconsin, respectively. Ex. 1033, 1; Ex. 1038, 1–2. In this decision, we cite to Exhibit 1038, which Petitioner identifies as “Ricquier,” using Petitioner’s added page numbers, which encompass both Exhibit 1038’s accompanying declaration and the Ricquier article. Pet. iv.

<sup>3</sup> U.S. Patent 5,233,426, filed December 12, 1991, issued August 3, 1993 (Ex. 1015).

<sup>4</sup> U.S. Patent 5,541,640, issued July 30, 1996 (Ex. 1029).



## II. EXERCISE OF DISCRETION UNDER 35 U.S.C. §325(D)<sup>5</sup>

Patent Owner argues that “[t]he Board should exercise its discretion to deny institution of the *inter partes* review of the Challenged Claims of the ’052 Patent under 35 U.S.C. § 325(d).” Prelim. Resp. 11 et seq. Section 325(d) provides that the Director may elect not to institute<sup>6</sup> a proceeding if the challenge to the patent is based on matters previously presented to the Office. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”). In evaluating matters under Section 325(d), the Board uses the following two-part framework: (1) determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Id.* at 8.

We consider several non-exclusive factors set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph), which “provide

---

<sup>5</sup> In its Preliminary Response, Patent Owner also argues that we should exercise discretion under 35 U.S.C. § 314(a) to deny the Petition based on the advanced stage of related litigation, but Patent Owner subsequently withdrew that argument after the District Court stayed that litigation. Prelim. Resp. 43–51; Paper 12, 1.

<sup>6</sup> The Board institutes trial on behalf of the Director. 37 C.F.R. § 42.4(a); *Advanced Bionics*, Paper 6 at 7 n.7.

useful insight into how to apply the framework” under § 325(d). *Advanced Bionics*, Paper 6 at 9. Those factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

*Becton Dickinson*, Paper 8 at 17–18 (formatting added). “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Advanced Bionics*, Paper 6 at 10.

As discussed below, we are not persuaded that the Petition relies on the same or substantially the same prior art or arguments as were previously presented to the Office. In particular, Petitioner argues, and Patent Owner does not dispute, that asserted prior art reference Suzuki teaches the limitation recited in claim 2 of: “wherein a largest dimension of said image sensor along said first plane is between 2 and 12 millimeters” (“dimension limitation”). Pet. 48–53.; Prelim. Resp. 55–64; Pet. Reply 1; Sur-Reply, generally. Each asserted ground relies on Suzuki, which was not cited

during examination of the challenged patent. Pet. 9; Ex. 1001, code (56). Further, Petitioner argues, and Patent Owner does not dispute, that the prior art cited during examination does not teach or suggest the dimension limitation. Pet. Reply 1; Sur-Reply, generally. Thus, the prior art asserted in this proceeding is not the same or substantially the same as the prior art previously presented to the Office.

Nor are the arguments presented in this proceeding the same or substantially the same as the arguments previously presented to the Office. Petitioner details how specific disclosures in Suzuki teach the dimension limitation. Pet. 48–50. Neither side asserts that the applicant made any arguments regarding any specific disclosures in the cited art teaching or not teaching the dimension limitation, nor does either side assert that the Examiner made any findings during prosecution about any specific disclosures that teach or would not teach that limitation. Thus, neither the asserted art nor the arguments presented in this proceeding are the same or substantially the same as those presented during prosecution, and we decline to exercise deny institution under 35 U.S.C. § 325(d). We expressly analyze *Becton, Dickinson* factors (a), (b), and (d) below in our analysis of the first part of the *Applied Bionics* framework.

*A. Factor (a): the similarities and material differences between the asserted art and the prior art involved during examination;*

The asserted prior art is materially different than the prior art involved during examination. In particular, the asserted prior art teaches the dimension limitation, whereas the art cited during prosecution does not.

Suzuki was not cited during prosecution. Pet. 9; Ex. 1001, code (56). Suzuki teaches a “solid-state image pickup chip of 1/3 inch (8.5 mm).” Ex.

1015, 4:6–12. Suzuki’s solid state image pickup chip is bonded to chip-connecting board 226. *Id.* at 3:21–24. Suzuki further teaches that the outer diameter of its camera head containing that chip “is about 10 mm.” *Id.* at 4:9. Thus, the largest dimension of Suzuki’s disclosed image sensor including its chip-connecting board 226 (which Dr. Neikirk maps the recited first circuit board to) is between 8.5 and 10 mm, which falls within the recited dimension range of 2 to 12 mm. Ex. 1004 ¶ 285.

Nothing on this record indicates that any prior art reference cited during prosecution teaches or suggests the dimension limitation. Petitioner argues that the prior art cited during prosecution does not, and Patent Owner has not disputed that assertion. Pet. Reply 1; Sur-Reply, generally. Patent Owner also has not identified any cited prior art reference that purportedly has such a teaching or suggestion. Sur-Reply, generally. And nothing cited from the prosecution history of the ’052 patent causes us to independently doubt the assertion that the cited prior art does not teach or suggest the dimension limitation. To the contrary, the prosecution history indicates neither the Examiner nor the applicant identified any cited art prior art as teaching or suggesting the dimension limitation, and, to the extent the applicant and the Examiner expressed any belief regarding whether any cited prior art reference taught or suggested that limitation, they indicated that no cited reference did.

In particular, to overcome an obviousness rejection, the applicant added new claims with the dimension limitation, and the Examiner allowed the new claims without ever rejecting them. Ex. 1002, 33–41, 113–116,

139–145, 154–156. Specifically, during examination of the '052 patent,<sup>7</sup> the only prior art rejection was an obviousness rejection over the combination of Yarush and Sonnenschein. *Id.* at 111–116. In response to that rejection, the applicant cancelled pending claims 1–24 and added new claims 25–31, of which claims 25–27 were independent. *Id.* at 138–144. Each of independent claims 25–27 recited the dimension limitation. *Id.* at 139–143. None of the original claims (1–24) did. *Id.* at 33–41.

The applicant did not provide any substantive patentability argument for the new claims, but nevertheless emphasized their recitation of the dimension limitation (at least with respect to the pending double patenting objection):

The applicant is canceling claims 1–24 in this application. The applicant is submitting new claims 25–31 which have different scope than the claims of the copending application. Also, the new claims have material added from the dependent claims that the examiner indicated would be allowable if written in independent form. Nevertheless, the new claims 25–32 have different scope than the claims indicated allowable if re-written (3, 4, 9, 10, 15, 16, 21 and 22). *In particular, the applicant is now claiming a range of 2 to 12 mm for the size of the largest dimension of the image sensor.* Thus the claims of the two copending applications have different scope from one another.

Ex. 1002, 145 (emphasis added and omitted).

The Examiner did not provide a substantive analysis when he allowed application claims 25–31. The Examiner, however, identified limitations in application claim 25 that were not anticipated or rendered obvious by

---

<sup>7</sup> Patent Owner argues about the examination of related patent applications, but none of those arguments concern the dimension limitation. Prelim. Resp. 7–39.

Yarush, and the dimension limitation was one of those limitations. Ex. 1002, 155–56. The Examiner indicated that application claims 26 and 27 were allowed for analogous reasons. *Id.* (Application claims 25–27 issued as independent claims 1–3, respectively. *Id.* at 160.)

In sum, for the dimension limitation, the asserted prior art is materially different from the cited prior art.

The parties have alleged similarities and differences between the asserted prior art and the cited prior art regarding other limitations. Prelim. Resp. 18–39; Reply 1–8; Sur-Reply 1–5. But because every limitation in a claim is material, the material difference for the dimension limitation establishes a material difference between the asserted art and the cited art for the challenged claims as a whole. *Cf. Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention.”). Thus, we need not address the parties’ arguments regarding other limitations. The material difference for the dimension limitation and Suzuki establishes a material difference for the challenged claim as a whole.

*B. Factor (b): the cumulative nature of the asserted art and the prior art evaluated during examination*

Neither party has argued that Suzuki is cumulative to the prior art evaluated during examination. Prelim. Resp. 18–39; Reply 1–8; Sur-Reply 1–5. And we do not independently find Suzuki to be cumulative. To the contrary, as discussed above, Suzuki teaches the dimension limitation, and Patent Owner has not argued that that limitation was taught or suggested by any cited prior art reference. Thus, Suzuki is not cumulative of the cited prior art.

*C. Factor (d): the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art*

For the dimension limitation, there is no overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art in this proceeding. As discussed above, the applicant did not make any arguments during prosecution concerning the dimension limitation, and the Examiner did not make any statements regarding any alleged teaching or suggestion of that limitation by the prior art.

Thus, based on our analysis of *Becton Dickinson* factors (a), (b), and (d), we determine that the same or substantially the same art or arguments were not considered by the Office. Therefore, we do not to consider the second part of the *Advanced Bionics* framework (i.e., whether Petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims). *Advanced Bionics* at 8 (second part of the framework only applies “if either condition of the first part of the framework is satisfied”) (emphasis added).

For these reasons, we do not exercise our discretion to deny institution under 35 U.S.C. § 325(d) as requested by Patent Owner.

### III. ANALYSIS OF ASSERTED GROUNDS OF UNPATENTABILITY

We analyze Petitioner’s asserted ground of unpatentability and Patent Owner’s arguments in its Preliminary Response to determine whether Petitioner has met the threshold standard of 35 U.S.C. § 314(a).

#### A. Claim Construction

“[I]n an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b) (2019). In applying a district court-type claim construction, we are guided by the principle that the words of a claim “are generally given their ordinary and customary meaning,” as would have been understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a “heavy presumption,” however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

We also are guided by the principle that we only construe claim terms if, and to the extent that, it is necessary for this proceeding. *See, e.g., Nidec*



*Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

Petitioner does not argue that any claim term requires construction. Pet. 13. Petitioner “interprets the claim terms according to their plain and ordinary meaning consistent with the specification.” *Id.* Patent Owner does not argue that any claim terms require construction, but contends that institution should be denied because Petitioner fails to propose a construction for terms that Petitioner has argued require construction in the pending litigation. Prelim. Resp. 10–11.

For this Decision, we do not need to construe any claim term. Neither party has requested that we do so, and we do not need to do so to determine whether to institute *inter partes* review.

Regarding Petitioner’s proposed district court construction, we do not agree with Patent Owner that Petitioner necessarily had to present that construction in this proceeding. A district court litigation addresses issues that we do not (e.g., infringement), and Petitioner’s proposed district court construction could be relevant only for such issues. Further, Patent Owner has not argued that adopting Petitioner’s district court construction would affect Petitioner’s showing of unpatentability, nor does Patent Owner argue that we should adopt that construction. Thus, without more, the fact that Petitioner proposed a construction to the district court that it did not propose here is of no significance.

*B. Legal Standards*

A patent claim is unpatentable as obvious if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

*C. Level of Ordinary Skill in the Art*

With regard to the level of ordinary skill in the art, Petitioner contends that a person of ordinary skill would have possessed the following:

a minimum of a Bachelor’s degree in Electrical Engineering, Physics, or a related field, and approximately two years of professional experience in the field of imaging devices. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

Pet. 13 (citing Ex. 1004 ¶¶ 34–37). Patent Owner does not address the level of skill in the art. *See generally* Prelim. Resp.

We adopt Petitioner’s articulation of the level of ordinary skill in the art, but delete the qualifier “a minimum of” for the level of education, to keep that level from being vague and possibly extending to a range that corresponds to the skill level of an expert. Thus, we regard the level of ordinary skill as being at the level of a person with “a Bachelor’s degree in Electrical Engineering, Physics, or a related field, and approximately two years of professional experience in the field of imaging devices.”

*D. Secondary Considerations*

In this proceeding, neither party has argued that secondary considerations or objective evidence of nonobviousness exist. Petitioner, however, notes that during prosecution of a priority application for the ’052 patent (i.e., Serial No 09/496,312, which issued as USP 6,043,839), the applicant argued, for the then pending claims, unexpectedly interference is decreased interference when image processing is removed from the same board or plane as the pixel array. Pet. 53 (citing Ex. 1003, 83–95).

Petitioner makes the following arguments regarding the alleged unexpected results: The Examiner did not find applicant’s argument persuasive. Pet. 53 (citing Ex. 1003, 110–118, 148, 157). Further, Swift teaches removing the processing circuitry from the image sensor and placing it on a separate circuit board adjacent the CMOS pixel array. *Id.* Thus, it was already known to remove the processing circuitry from the image sensor, and the results of doing so were known. *Id.*

As of now, no party has argued that secondary considerations exist for the asserted grounds, and we see nothing on this record that causes us to

independently reach such a conclusion. Thus, we do not address secondary considerations or objective evidence of nonobviousness in the analyses below.

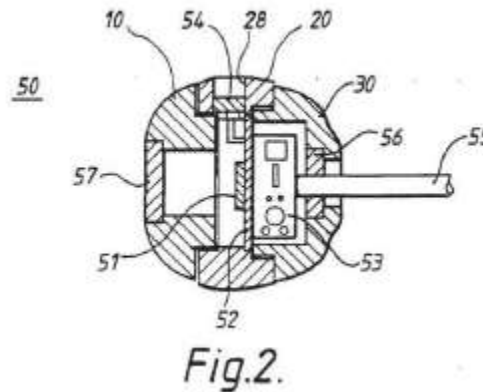
*E. Asserted Obviousness of Claim 2 over Swift, Ricquier, and Suzuki*

Petitioner asserts that claim 2 would have been obvious over Swift, Ricquier, and Suzuki. Pet. 15–50. We determine that Petitioner has demonstrated a reasonable likelihood of prevailing on this assertion.

*1. Swift*

Swift published on December 21, 1995. Ex. 1005, code (43). The earliest priority date claimed for the '052 patent is based on the filing date of parent U.S. Patent Application No. 08/944,322, which is October 6, 1997. Ex. 1001, code (63). Thus, Swift is prior art to the '052 patent under 35 U.S.C. § 102(b). Patent Owner does not contest the prior art status of Swift. *See generally* Prelim. Resp.

Swift is titled “Miniature Cameras.” Ex. 1005, code (54). Swift teaches a miniature video camera that includes a housing and an image sensor mounted in the housing. *Id.* at code (57), 4:11–15, 8:31-9:5, Fig. 2. Figure 2 of Swift, reproduced below, illustrates miniature camera 50 (*id.* at 7:10–13):



As shown in Figure 2 above, miniature camera 50 has a housing with front portion 10, center portion 20, and rear portion 30, and all of these portions have a substantially circular cross-section. *Id.* at 7:10–15. Miniature camera 50 also includes imager sensor 51 mounted on circular circuit board 52; circuit board 53; miniature microphone 54; cable 55; and wide angle lens 57. *Id.* at 8:31–9:25. Circuit board 53 is mounted on circuit board 52 substantially at a right angle. *Id.* at 9:5–7. Circuit components mounted on circuit board 53 power image sensor 52, process image signals received from image sensor 52, and process audio signals from miniature microphone 54. *Id.* at 9:8–13. Cable 55 provides a connection between miniature video camera 50 and external circuitry. *Id.* at 9:13–17.

Image sensor 51 is preferably of a CMOS/APS (Active Pixel Sensor) type. Ex. 1005, 10:1–2.

## 2. Suzuki

Suzuki issued on August 3, 1993. Ex. 1015, code (45). Thus, Suzuki is prior art to the '052 patent under 35 U.S.C. § 102(b). Ex. 1001, code (63). Patent Owner does not contest the prior art status of Suzuki. *See generally* Prelim. Resp.

Suzuki is titled “Reduced Diameter Camera Head for [a] Solid-State Image Pickup Device.” Ex. 1015, code (54). Figure 2, reproduced below, is a cross-sectional view of camera head 2:

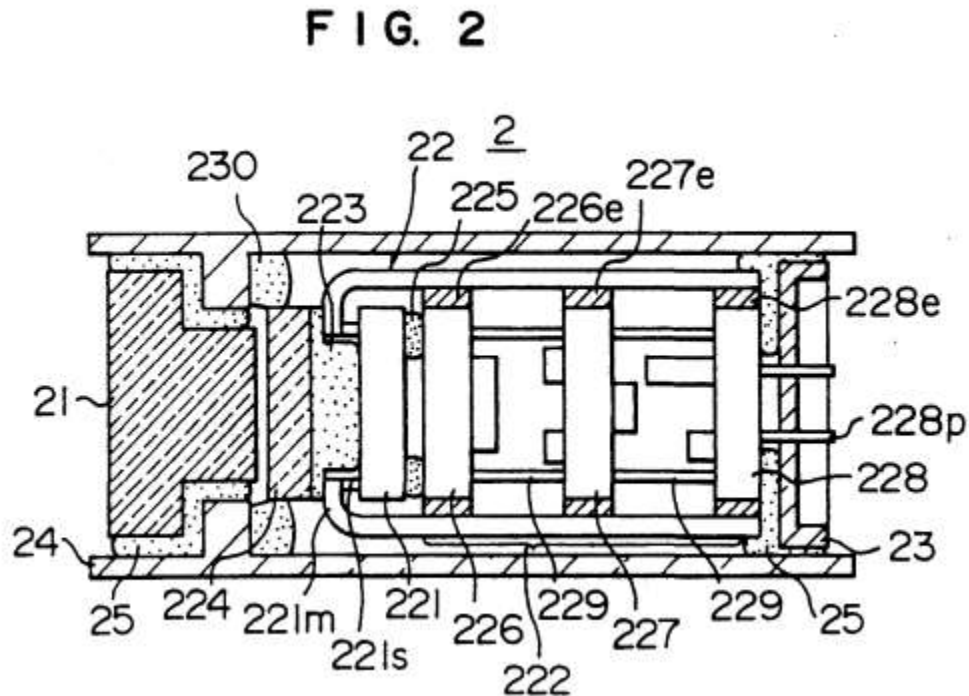


Figure 2 above shows camera head 2 with image pickup unit 22, the latter of which comprises solid-state image pickup chip 221 and circuit module 222. Ex. 1015, 2:38–41. Suzuki discloses the use of an 8.5 mm solid-state image pickup chip with an outer camera head diameter of about 10 mm. *Id.* at 4:6–11.

### 3. Ricquier

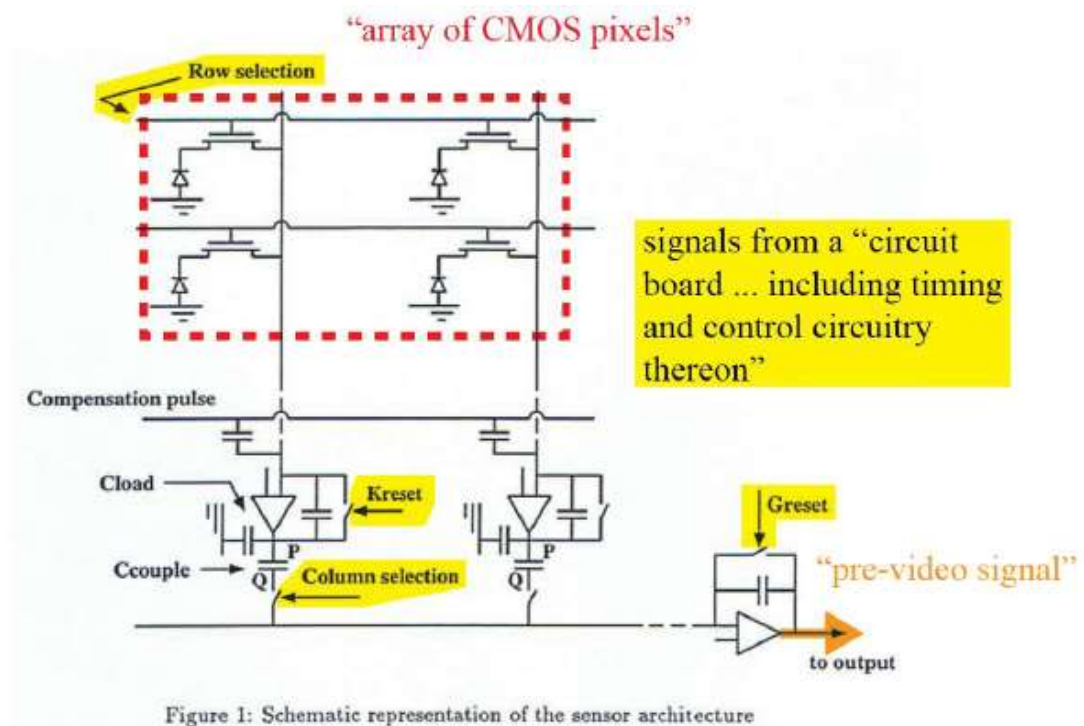
Ricquier is a conference paper. Exs. 1033, 1038.<sup>8</sup> According to declarations submitted by Petitioner, Ricquier was disseminated and available in a library by May 1994. Ex. 1004 ¶¶ 302–308; Ex. 1033, 1; Ex. 1038, 1. Ricquier, thus, is prior art to the '052 patent under 35 U.S.C.

---

<sup>8</sup> For these exhibits, we cite the page numbers added by Petitioner.

§ 102(b). Ex. 1001, code (63). Patent Owner does not contest the prior art status of Ricquier. *See generally* Prelim. Resp.

Ricquier describes a dedicated imager for a camera operating in several resolutions. Ex. 1038, 8. The imager includes a CMOS array of 256 x 256 pixels addressable by column and row using a timing controller on an off-chip driving unit. *Id.* at 8–10. Petitioner submitted an annotated copy of Figure 1 of Ricquier, reproduced below:



Pet. 36. Figure 1 above is a schematic representation of Ricquier’s sensor architecture. Ex. 1038, 9. As illustrated, Petitioner maps the recited pre-video signal of claim 3 to the image data output of this sensor architecture. Pet. 34–37. Petitioner argues that readout in this sensor architecture is done by controlling the clock scheme using a timing controller on an off-chip driving unit for driving the row selection, column selection, and reset signal

inputs. *Id.* at 37. Those inputs are identified via annotations in the figure above. *Id.* at 36.

#### *4. Combination of Swift and Ricquier*

Petitioner asserts that an ordinarily skilled artisan would have combined (i) Swift's teachings of a miniature camera with a CMOS image sensor with (ii) Ricquier's teachings of a CMOS pixel array and an off-chip timing controller. Pet. 22.

Petitioner argues the following: Ricquier teaches the advantages of using an off-chip timing controller, which adds flexibility in selecting design choices to fill components into available space and stack those components for a more compact camera head. Pet. 22–23. An ordinarily skilled artisan would know to locate Ricquier's off-chip timing and control circuitry in Swift's miniature camera on the opposite side of circuit board 52 to image sensor 51 to minimize the camera's overall size. *Id.* at 23 (citing Ex. 1016, 4–5; Ex. 1015, Fig. 2). Placing components in this stackwise arrangement is a common design consideration for portable devices. *Id.* at 23–24 (citing Ex. 1045, 15, 20; Ex. 1016, 3–4). Further, Ricquier teaches the advantages of its imager's selective addressability, multiple resolutions, and data rates. *Id.* at 24 (citing Ex. 1038).

Patent Owner disputes that an ordinarily skilled artisan would have combined Ricquier's off-chip driving unit with Swift's miniature camera (Prelim. Resp. 60), arguing the following: Ricquier's driving unit was located off-chip only to allow Ricquier's authors to experiment with the driving unit. *Id.* Ricquier indicates that, with any actual imager, its driving unit would be on the same chip as the imager. *Id.* Thus, an ordinarily



skilled artisan would not have used Ricquier's off-chip driving unit with Swift's camera. *Id.*

We determine that Petitioner has provided a sufficient showing for combining Swift and Ricquier's teachings. As indicated above, Petitioner has provided a rationale to combine the teachings of these references. Further, we do not agree with Patent Owner that Ricquier teaches that its off-circuit driving unit must be placed on the same circuit board as the imager in any actual product. Ricquier merely states: "A CMOS technology was chosen because it offers the selective addressability together with the possibility of further cointegration of processing electronics on the same chip." Ex. 1038, 8. This statement does not indicate that further cointegration in Ricquier is mandatory or that such cointegration would necessarily include Ricquier's off-circuit driving unit.

Petitioner has provided a sufficient showing of a motivation to combine Swift's and Ricquier's teachings.

#### *5. Combination of Suzuki with Swift and Ricquier*

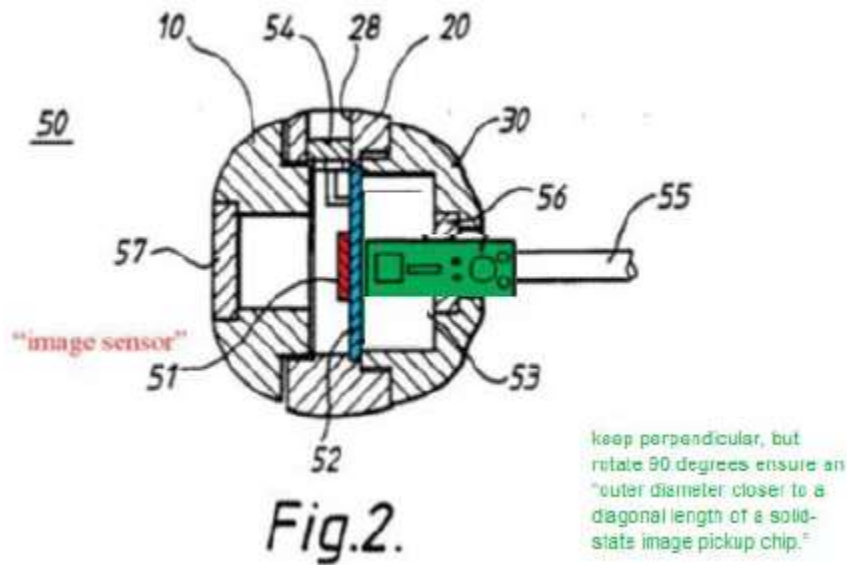
Petitioner argues that an ordinarily skilled artisan would have combined Swift's imager apparatus (as modified by Ricquier) with Suzuki's teachings of (i) a stacked arrangement of parallel circuit boards and (ii) a solid-state image pickup chip of 8.5 mm with a 10 mm chassis. Pet. 24–27.

Petitioner makes the following arguments: An ordinarily skilled artisan would have been motivated to apply Suzuki's teachings of a stacked arrangement with a small image pickup chip to Swift's miniature camera (as modified by Ricquier) to reduce the camera's overall size and improve the camera's stability and reliability. Pet. 24–25. Swift acknowledges that its circuit boards can be disposed in directions other than that shown in its

figures. *Id.* at 25. And Suzuki explains that, by arranging the image sensor and circuit boards so that they are aligned with each other as illustrated in Fig. 2 of Suzuki, the camera can have an outer diameter closer to a diagonal length of a solid-state image pickup chip. *Id.*

Patent Owner disputes this purported motivation, arguing the following: In Swift's CMOS embodiments, the CMOS imager, pixel array, timing and control circuitry, and the circuitry to convert a pre-video signal to a post-video signal are all on one chip. Prelim. Resp. 56–58, 61. And Petitioner fails to provide a reason to modify Swift's camera to remove its on-chip timing circuitry and place it on Suzuki's separate circuit board. *Id.* at 61.

Patent Owner further argues that Petitioner has not provided a reasoned basis for placing Swift's circuit board 53 parallel to the image sensor. Prelim. Resp. 62–64. Patent Owner asserts: Whether circuit board 53 is arranged perpendicular as shown in Swift Figure 2 or parallel as suggested by Petitioner, circuit board 53 would still limit the ability of the camera to have a dimension closer to the diagonal length of a solid-state image pickup chip. *Id.* Only if circuit board 53 would be oriented as shown in the annotated figure below would it allow for Swift's camera to obtain an outer diameter closer to the diagonal length of a solid state image pickup chip (*id.* at 63–64):



*Id.* at 64. The above annotated figure prepared by Patent Owner shows circuit board 53 perpendicular to circuit board 52, but rotated ninety degrees from what is shown in actual Figure 2. *Id.*

We determine that Petitioner has made a sufficient showing for combining Swift, Ricquier, and Suzuki. Petitioner relies on the testimony of Dr. Neikirk, who testifies that Suzuki teaches the use of two circuit boards in a stacked arrangement. Ex. 1004 ¶ 242. Consistent with this testimony, Suzuki discloses that chip connecting board 226 and circuit board 227 are aligned with each other. Ex. 1015, 3:15–25; Ex. 1004 ¶ 271. Further, Figure 2 of Suzuki shows chip connecting board 226 and circuit board 227 in a stacked arrangement. Ex. 1015, Fig. 2; Ex. 1004 ¶ 271.

Dr. Neikirk testifies that Suzuki’s design reduces a camera’s overall size and improves the camera device’s stability and reliability. Ex. 1004 ¶ 273. Consistent with this testimony, Suzuki discloses that: “[i]t is an object of this invention to provide a camera head for a solid-state image pickup device which camera head has an outer diameter closer to a diagonal length of a solid-state image pickup chip.” Ex. 1015, 1:53–56; *see also id.* 3:61–

4:12, 4:30–65. These disclosures support Dr. Neikirk’s opinion that an ordinarily skilled artisan would apply Suzuki’s teachings to Swift’s teachings to decrease the size and increase stability and reliability of Swift’s camera. Ex. 1004 ¶ 242.

We are not persuaded by Patent Owner’s counterarguments. As mentioned, Patent Owner argues that (i) Swift’s embodiments with CMOS sensors use only one circuit board and (ii) therefore an ordinarily skilled artisan would not combine Swift’s CMOS embodiments with Suzuki’s two circuit boards. Prelim. Resp. 60–62. Camera 50, however, shown in Figure 2 of Swift, contains image sensor 51 and circuit boards 52 and 53. Ex. 1005, Fig. 2. And “image sensor 51 is preferably of a CMOS/APS (Active Pixel Sensor) type.” *Id.* at 10:1–2.

As mentioned, Patent Owner also argues that stacking Swift’s circuit boards would not reduce the size of Swift’s camera. Prelim. Resp. 62–64. Patent Owner, however, has not submitted any expert testimony or persuasive documentary evidence to support this argument. *Id.* Further, Patent Owner’s analysis of how the orientations of Swift’s circuit boards would or would not affect camera 50’s size is not persuasive. *Id.* Patent Owner argues that the orientation of circuit board 53 in the annotated figure, reproduced above, would reduce camera 50’s size, but stacking circuit boards 52 and 53 would not. *Id.* In that annotated figure, however, it appears that the orientation of circuit board 53 would not affect camera 50’s dimensions. *Id.* at 64. As shown, circuit board 52 appears longer than circuit board 53, and, as a result, circuit board 52, not circuit board 53, would appear to determine the dimensions of the camera. *Id.* Thus, the orientation of circuit board 53 in the annotated figure (versus the orientation

shown in unannotated Figure 2 of Swift) would appear to have no effect on those dimensions. *Id.*

If, as indicated by the annotated figure, the length of circuit board 52 determines camera 50's dimensions, then Petitioner's proposed stacked orientation of circuit boards 52 and 53 may also not affect camera 50's dimensions. We do not make such a finding in this Decision, however, because (i) no party argues that circuit board 52 determines camera 50's dimensions, (ii) both parties argue that at least one orientation of circuit board 53 affects those dimensions, and (iii) Dr. Neikirk testifies that at least one orientation of circuit board 53 affects those dimensions. Pet. 24–25; Prelim. Resp. 62–64; Ex. 1004 ¶ 242.

Petitioner has provided a sufficient showing for combining Swift, Ricquier, and Suzuki.

## *6. Claim 2*

### *a. Disputed Limitation*

Patent Owner disputes that the combination of Swift, Ricquier, and Suzuki teaches or suggests “said second circuit board including circuitry thereon to convert said pre-video signal to a post-video signal” (the “conversion limitation”). Prelim. Resp. 55–64.

For this limitation, Petitioner argues the following: Swift discloses that circuit board 52 (the recited second circuit board) is electrically connected to and receives image signals from image sensor 51 and converts those signals into a signal that can be received by a monitor or a television. Pet. 39.

Patent Owner counters: Swift discloses CMOS and CCD embodiments. Prelim. Resp. 55–59. Swift's CMOS embodiments use

Fossum’s APS-type sensor, which does its own conversion from analog to digital. *Id.* at 56–58. Thus, Swift’s circuitry to convert a pre-video signal to a post-video signal is on the circuit board with the imager (52), not on circuit board 53. *Id.* Swift’s CCD embodiments and Ricquier’s and Suzuki’s teachings do not cure this deficiency in Swift’s CMOS teachings. *Id.* at 56–62.

Petitioner has made a sufficient showing for the conversion limitation. As discussed in Section III.E.b. Petitioner maps the recited first and second circuit boards to circuit boards 52 and 53, respectively. And Swift teaches that circuit board 53 (the recited second circuit board) includes circuitry to convert a pre-video signal to a post-video signal. For example, Swift discloses that “various circuitry components are mounted on the *circuit board 53*, to provide power to the *image sensor 51* [and] *process image signals* received therefrom.” Ex. 1005, 9:7–13 (emphasis added). Swift further discloses that “[a] video monitor or TV 154 is provided to display a signal received from camera 152.” *Id.* at 15:7–8. Swift further describes video signals that are provided from camera 152 for viewing on a television. *Id.* at 17:34–18:3; *see also id.* at 18:8–11. Swift also describes that camera 152 and monitor 154 are connected by cabling system 160. *Id.* at 15:13–14. These disclosures teach or suggest that circuit board 53 (the recited second circuit board) includes circuitry to convert a pre-video signal into a post-video signal.

As discussed in Section II.E.4., we are not persuaded by Patent Owner’s counterargument that Swift’s CMOS embodiments would utilize only one circuit board. Nor are we persuaded that, in Swift, circuitry for converting a pre-video signal to a post-video signal would be on the same

circuit board as the imager. Prelim. Resp. 56–58. As discussed above, Swift indicates such circuitry is on circuit board 53, which does not contain imager 51. Ex. 1005, 9:7–13; Fig. 2. Further, Swift discloses that imager 51 is preferably a CMOS imager. *Id.* at 10:1–2.

In sum, Petitioner has made a sufficient showing for the conversion limitation.

*b. Preamble*

For the preamble of claim 2, Petitioner argues Swift’s miniature camera and video monitor are imaging devices. Pet. 27. Petitioner further argues that to the extent the preamble requires that the recited video monitor be in the same physical housing as the “camera,” that arrangement would have been an obvious implementation choice. *Id.* at 28.

Currently, no party has argued that this preamble requires that the recited video monitor be in the recited housing of claim 2, and we do not independently reach such a conclusion.

Patent Owner does not dispute that Swift teaches the preamble recitation of claim 2. We determine that Petitioner has made a sufficient showing for the preamble recitation of claim 2.<sup>9</sup>

*c. Remaining Limitations*

Petitioner has made a sufficient showing for the remaining limitations of claim 2, the teachings of which Patent Owner has not disputed.

For the recited housing, Petitioner argues that, in Swift, housing portions 10, 20, and 30 constitute a housing. Pet. 28–29.

---

<sup>9</sup> For this reason, we do not need to determine whether the preamble of claim 2 is a limitation.

For the recited image sensor including a first circuit board, Petitioner argues: In Swift, image sensor 51 is mounted on printed circuit board 52, which is mounted in housing portion 20. Pet. 29–33. Thus, image sensor 51 and printed circuit board 52 are “an image sensor mounted in said housing.” *Id.* at 29–31. Circuit board 52 has a length and width that define a first plane, as shown in Swift Figures 2 and 7. *Id.* at 29. Thus, circuit board 52 is the “first circuit board having a length and width thereto, wherein said length and width of said first circuit board define a first plane.” *Id.* at 29–30. Image sensor 51 is a CMOS sensor, and Ricquier discloses an array of CMOS pixels as a CMOS sensor. *Id.* at 29–33. Thus, Swift as modified by Ricquier teaches a “first circuit board” (circuit board 52 to which image sensor 51 is mounted) with “an array of CMOS pixels thereon.” *Id.*

For the recited amplifier, Petitioner argues: Swift discloses that its CMOS sensors are of the CMOS/APS type, where each pixel includes an amplifier. Pet. 33–34. Thus, Swift and Ricquier teach “a plurality of CMOS pixels within said array of CMOS pixels each include an amplifier.” *Id.*

For the recited timing and control circuitry, Petitioner asserts: Ricquier discloses an off-chip driving unit with a timing controller to drive row and column selection for a photodiode array. Pet. 34–36. This timing controller controls the sequences of reset pulses of the photodiode array as illustrated in Figure 1 of Ricquier. *Id.* at 34. Thus, Ricquier’s timing controller is “timing and control circuitry being coupled to an array of CMOS pixels.” *Id.* at 34–36. When Ricquier’s teachings are applied to Swift, Swift’s circuit board 52 would have coupled timing and control circuitry, and thus would be “said first circuit board further including timing



and control circuitry thereon, said timing and control circuitry being coupled to said array of CMOS pixels.” *Id.*

For the recited pre-video signal, Petitioner argues that the image data output shown in Figure 1 of Ricquier is “a pre-video signal” produced by Ricquier’s “image sensor.” Pet. 36–38.

For the recited second circuit board, Petitioner argues: In Swift, printed circuit board 53 is mounted in rear housing portion 30 and is thus “a second circuit board mounted in said housing.” Pet. 38. Circuit board 53 is connected to circuit board 52 and processes image signals from image sensor 51. *Id.* Thus, circuit board 53 is “electrically connected to said first circuit board.” *Id.* The length and width of circuit board 53 define a plane. *Id.* Thus, circuit board 53 also has “a length and width thereto, where said length and width of said circuit board define a second plane.” *Id.*

For the recited stacked relationship, Petitioner argues: It would have been obvious, based on Swift alone, to have placed circuit boards 52 and 53 in a stacked relationship. Pet. 38–39. Further, Suzuki teaches a stacked arrangement of circuit boards. *Id.* at 41–44. In Suzuki, circuit board 227 and chip connecting board 226 are aligned with each other, such that the planes are substantially parallel. *Id.* at 42. Thus, combined Swift and Suzuki teach “a stacked arrangement with respect to said first circuit board, said second plane of said second circuit board being substantially parallel to said first plane of said first circuit board.” *Id.* at 41–44.

For the recited lens, Petitioner argues: In Swift, wide angle lens 57 is mounted in front housing portion 10 and thus is “a lens mounted in said housing.” Pet. 44. Further, Swift discloses placing a lens a fixed distance from its sensor and having the lens focus images on its image sensor. *Id.* at

44–45. Thus, Swift teaches “a lens mounted in said housing, said lens being integral with said imaging device, said lens focusing images on said array of CMOS pixels of said image sensor.” *Id.*

For the recited video screen, Petitioner argues the following: In Swift, video monitor 154 is a video screen. Pet. 45. Cables connect printed circuit board monitor 154 with circuit board 53, and video monitor 154 receives video signals from circuit board 53, which video monitor 154 displays. *Id.* at 45–46. Thus, video monitor 154 is “a video screen” that is “electrically coupled to said second circuit board [board 53]” that “receiv[es] said post-video signal and display[s] images from said post-video signal.” *Id.*

For the recited power supply, Petitioner argues: Swift discloses the use of a battery or voltage regulator for its miniature camera. Pet. 47. The battery or voltage regulator are in the image sensor assembly and thus are “mounted in the housing”. *Id.* at 47–48. The battery or voltage regulator are also coupled to image sensor 51 and components of circuit boards 52 and 53. *Id.* As a result, Swift discloses “a power supply mounted in said housing, said power supply being electrically coupled to said first circuit board” to provide power to its image sensor. *Id.*

Petitioner continues, arguing: Applying Ricquier’s teachings to Swift produces an image sensor with an array of CMOS pixels with a timing and control circuitry on circuit board 52. Pet. 48. Thus, with this combination, the battery or voltage regulator would provide power to an array of CMOS pixels and timing and control circuitry. *Id.* And Swift’s battery or voltage regulator would “provide[] power to said array of CMOS pixels and said timing and control circuitry.” *Id.* Swift teaches that the battery or voltage regulator applies power to the video processor on circuit board 53. *Id.* at

47–48. Thus, Swift’s battery or voltage regulator is “also [] electrically coupled to said second circuit board to provide power thereto.” *Id.*

For the dimension limitation, Petitioner argues that Swift discloses an image sensor along a first plane and Suzuki discloses a largest dimension of an image sensor along a first plane that is between 8.5 mm and no greater than 10 mm. Pet. 48–50. Thus, the combination of Swift and Suzuki has “a largest dimension of said image sensor along said first plane [] between 2 and 12 millimeters.” *Id.*

We have reviewed the above arguments by Petitioner and the evidence cited by Petitioner in support of those arguments and determine that Petitioner has made a sufficient showing for the remaining limitations of claim 2.

*d. Summary*

As discussed, Petitioner has made a sufficient showing for all limitations of claim 2. Thus, Petitioner has demonstrated a reasonable likelihood of establishing that claim 2 would have been obvious over Swift, Ricquier, and Suzuki.

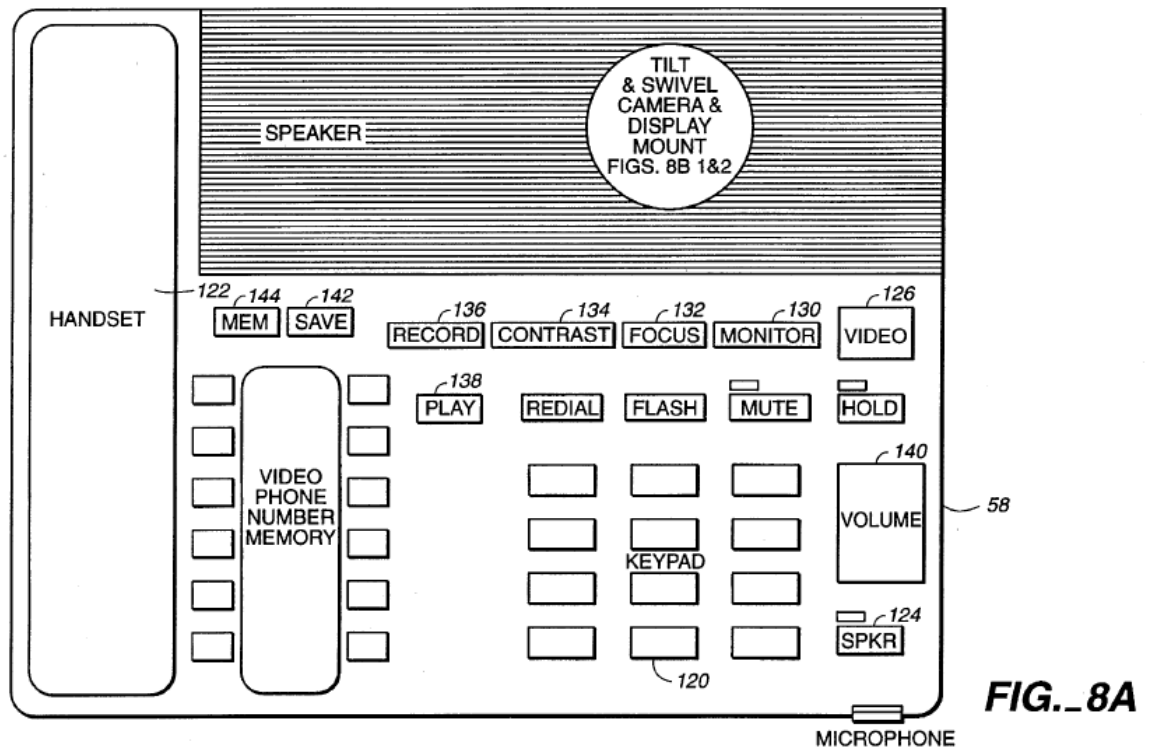
*F. Asserted Obviousness of Over Swift, Ricquier, Suzuki, and Larson*

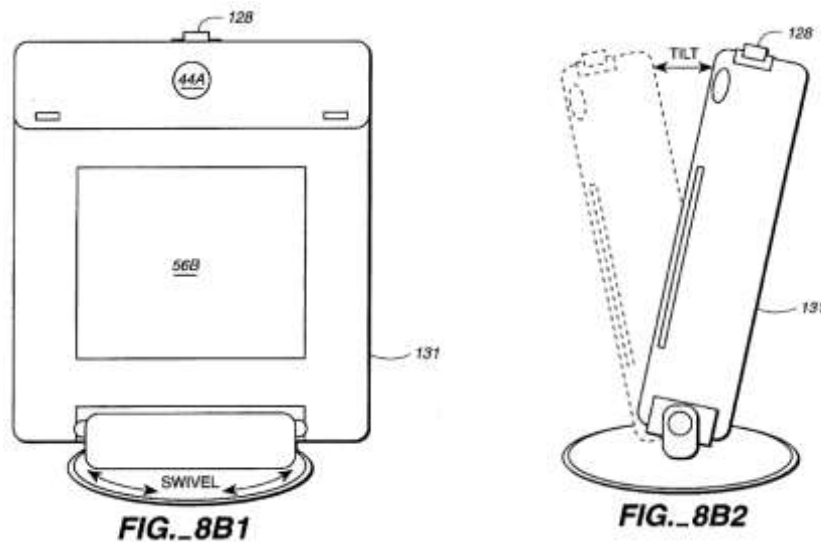
Petitioner asserts that claim 2 would have been obvious over Swift, Ricquier, Suzuki, and Larson. Pet. 50–53. We determine that Petitioner has demonstrated a reasonable likelihood of prevailing on this assertion.

*1. Larson*

Larson issued on July 30, 1996. Ex. 1029, code (45). Thus, it is prior art to the ’052 patent under 35 U.S.C. § 102(b). Ex. 1001, code (63).

Larson is titled “Videophone for Simultaneous Audio and Video Communication via a Standard Telephone Line.” Ex. 1029, code (54). Figures 8A, 8B1, and 8B2 of Larson are reproduced below:





These figures are isometric views of “a housing having a control console incorporated into” a videophone. *Id.* at 5:33–35. Figure 8A shows control console 58, which includes handset 122, speaker activation button 124, and video activation button 126. *Id.* at 25:48–62, 26:15–28. Video activation button 126 enables CCD camera 44 and LCD 56, shown in Figure 6, and opens mechanical shutter 128, which permits video transmission. *Id.* at 26:15–28. Figure 8B1 shows housing 131 with CCD camera lens 44A, LCD panel 56B, and attached mechanical shutter 128, and the figure illustrates housing 131’s ability to swivel. *Id.* at 26:43–47. Figure 8B2 shows housing 131 with attached mechanical shutter 128 and illustrates housing 131’s ability to tilt. *Id.* As shown in Figures 8B1 and 8B2, housing 131 can be swiveled and tilted to obtain a desired field of view for CCD camera 44. *Id.* at 26:43–54.

## 2. Combination of *Larson* with *Swift*, *Ricquier*, and *Suzuki*

Petitioner argues that to the extent the imaging device of claim 2 requires that the recited video monitor be in the recited housing, such an arrangement would have been obvious in view of *Larson*. Pet. 50–53. In

particular, Petitioner argues: Larson's housing 131 includes CCD camera lens 44A and LCD panel 56B and, thus, is a housing with an imager and a display screen. *Id.* at 50–51. An ordinarily skilled artisan would have applied the teachings of Swift's miniature cameras as modified by Ricquier and Suzuki to implement Larson's camera in a videophone with a compact housing due to the known advantages of CMOS sensors and their ability to be used in smaller devices. *Id.*

Patent Owner does not advance any arguments for the Swift-Ricquier-Suzuki-Larson ground other than those that it advanced for the Swift-Ricquier-Suzuki ground. Prelim. Resp. 64. As set forth in Section III.E., we determined that Petitioner's showing for the Swift-Ricquier-Suzuki ground is sufficient. We reach the same determination for the Swift-Ricquier-Suzuki-Larson ground. Petitioner has demonstrated a reasonable likelihood of prevailing on the Swift-Ricquier-Suzuki-Larson ground.

#### IV. CONCLUSION

Petitioner has established a reasonable likelihood of prevailing on assertions that the challenged claim of the '052 patent is unpatentable.

#### V. ORDER

It is:

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review of claim 2 of the '052 patent is instituted on all grounds raised in the Petition for that claim.

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, *inter partes* review of the challenged patent shall commence on the entry date of this Decision, and notice is given of the institution of a trial.

IPR2020-00512  
Patent 9,186,052 B1

FOR PETITIONER:

Scott McKeown  
James L. Davis, Jr.  
Carolyn Redding  
[scott.mckeown@ropesgray.com](mailto:scott.mckeown@ropesgray.com)  
[james.l.davis@ropesgray.com](mailto:james.l.davis@ropesgray.com)  
[carolyn.redding@ropesgray.com](mailto:carolyn.redding@ropesgray.com)

FOR PATENT OWNER:

Jonathan Caplan  
James Hannah  
Jeffrey Price  
[jcaplan@kramerlevin.com](mailto:jcaplan@kramerlevin.com)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)