

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BANK OF AMERICA, N.A.,
Petitioner,

v.

NANT HOLDINGS IP, LLC,
Patent Owner.

IPR2021-01081
Patent 7,881,529 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

BELISLE, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Case Posture*

Bank of America, N.A. (“Petitioner”) filed a Petition (Paper 9, “Pet.”)¹ requesting an *inter partes* review of claims 1, 2, 4, 7, 9, 18, and 20 (“Challenged Claims”) of U.S. Patent No. 7,881,529 B2 (Ex. 1001, “the ’529 patent”). Petitioner identifies itself and Bank of America Corporation as real parties in interest. Pet. 68. Nant Holdings IP, LLC (“Patent Owner”) identifies itself as a real party in interest (Paper 4, 2), and timely filed a Preliminary Response to the Petition (Paper 10, “Prelim. Resp.”). In addition, with prior authorization from the Board, the parties filed supplemental briefing concerning the Preliminary Response. Paper 13 (“Reply”); Paper 14 (“Sur-Reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2020). We may not institute an *inter partes* review “unless . . . 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). The Supreme Court has held that a decision to institute under 35 U.S.C. § 314 may not institute review on less than all claims challenged in the petition. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355–56 (2018). Moreover, if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition. *See* 37 C.F.R. § 42.108(a); Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019),

¹ Petitioner filed a Petition (Paper 2) and a corrected Petition (Paper 9). We reference the corrected Petition filed on September 16, 2021.

<https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf> (“The Board will not institute on fewer than all claims or all challenges in a petition.”).

Applying those standards, and upon consideration of the information presented in the Petition, Preliminary Response, and supplemental briefing, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’529 patent is unpatentable. Accordingly, we institute an *inter partes* review as to all Challenged Claims of the ’529 patent on all grounds raised in the Petition. We base our factual findings and conclusions at this stage of the proceeding on the evidentiary record developed so far. This is not a final decision as to the construction of any claim term or the patentability of any claim. Any final decision shall be based on the full trial record, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in a timely-filed response may be deemed waived, even if they were presented in the Preliminary Response.

B. Related Proceeding

The parties indicate that the ’529 patent, along with seven other patents, are involved in one U.S. district court action, namely, *NantWorks, LLC and Nant Holdings IP, LLC v. Bank of America Corporation and Bank of America, N.A.*, No. 2:20-cv-07872 (C.D. Cal.) (“District Court Case”). Pet. 68; Paper 4, 2. Petitioner also states, “All of the patents claim priority to Provisional Application Nos. 60/246,295 and 60/317,521. There appears to be no pending application that claims priority to those two applications.” Pet. 69.

C. The '529 Patent

The '529 patent is titled “Data Capture and Identification System and Process,” and issued on February 1, 2011, from U.S. Patent Application No. 12/505,714, filed July 20, 2009, and claims priority through a series of continuing applications to U.S. Provisional Patent Applications Nos. 60/317,521, filed September 5, 2001, and 60/246,295, filed November 6, 2000. Ex. 1001, codes (10), (21), (22), (45), (54), (60), (63).

The '529 patent describes “[t]raditional methods” for linking objects to digital information that involve applying a barcode, a radio or optical transceiver or transmitter, or some other means of identification to the object, as well as modifying the image or object so as to encode detectable information. Ex. 1001, 2:13–19. However, according to the '529 patent, “[t]here is a need to identify an object that has been digitally captured from a database of images without requiring modification or disfiguring of the object.” *Id.* at 1:32–34. The '529 patent states that it responds to this need by describing “a system and process for identifying digitally captured images without requiring modification to the object.” *Id.* at 3:4–6. But notwithstanding this additional capability, the '529 patent explicitly discloses that “*the present invention also can detect, decode, and identify images and objects based on traditional symbols* which may appear on the object, such as alphanumeric characters, *barcodes*, or 2-dimensional matrix codes.” *Id.* at 2:32–36 (emphases added).

Figures 1 and 2 of the '529 patent, reproduced below, collectively illustrate an embodiment of the patent. The following description refers to both figures.

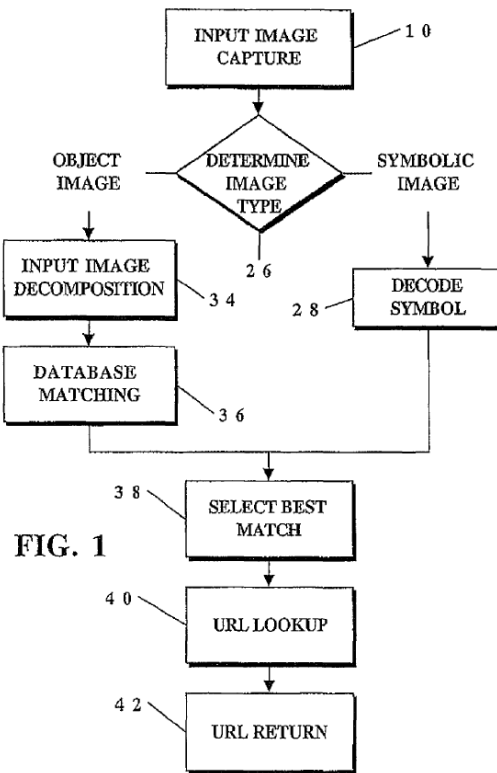


Figure 1 depicts a block diagram top-level algorithm flowchart.

Ex. 1001, 3:47–48, Fig. 1.

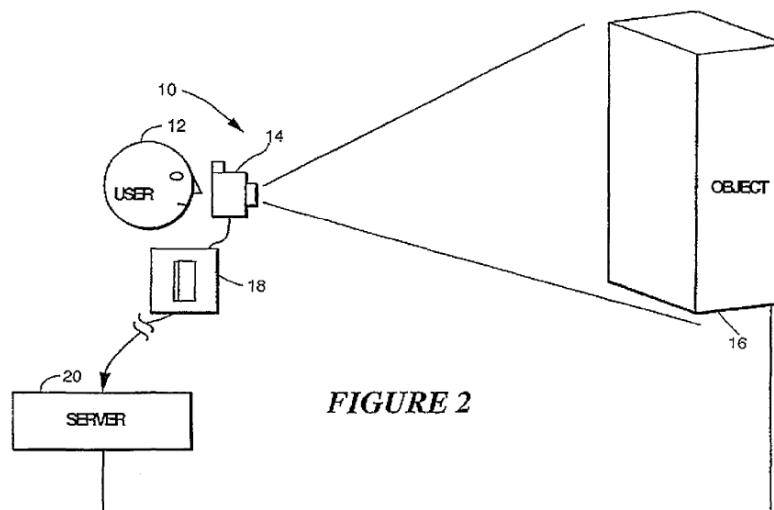


Figure 2 depicts an idealized view of data capture.

Ex. 1001, 3:49, Fig. 2.

According to the '529 patent, for data capture 10, user 12 utilizes a computer, mobile telephone, personal digital assistant, or other similar device 14 equipped with a data sensor (such as a CCD or CMOS digital camera). Ex. 1001, 4:28–31. User 12 aligns the sensor of data capture device 14 with object 16 of interest. *Id.* at 4:31–32. The linking process is then initiated, and device 14 captures digital data 18 of the scene at which it is pointed. *Id.* at 4:32–38. Data 18 is represented as three separate 2-D matrices of pixels, corresponding to the raw RGB (Red, Green, Blue) representation of the input image. *Id.* at 4:38–41. Data 18 is subsequently transferred to data/server 20. *Id.* at 4:46–55.

Data type determination 26 is accomplished with a discriminator algorithm which operates on input data 18 and determines whether the input data contains recognizable symbols, such as barcodes, matrix codes, or alphanumeric characters. Ex. 1001, 4:65–5:2. If such symbols are found, data 18 is sent to decode symbol process 28. *Id.* at 5:2–3. In decode symbol process 28, data 18 is analyzed to determine the location, size, and nature of the symbols. *Id.* at 5:13–18. The symbols are analyzed according to their type, and their content information is extracted. *Id.*

Data 18 may also or alternatively contain an object of interest, and may therefore also or alternatively be sent to the object data branch of the process flow. Ex. 1001, 5:3–7. In input data decomposition process 34, a “decomposition” of a high-resolution input data into several different types of quantifiable salient parameters is performed. *Id.* at 5:19–22. According to the '529 patent, this allows for multiple independent convergent search processes of the database to occur in parallel in database matching 36, which

“greatly improves data *match* speed and *match* robustness.” *Id.* at 5:22–25 (emphases added).

D. Illustrative Claim

The ’529 patent includes twenty-seven claims, of which claims 1, 2, 4, 7, 9, 18, and 20 are challenged. Claim 1 is the challenged independent claim. Claim 1 is illustrative and reproduced below.

1. A system comprising:
 - a camera that captures an image;
 - a network-enabled device that conducts a data processing operation on at least a portion of the image to produce data, and sends the data to a service;
 - the service programmed to receive the data; identify an object within the image;
 - distinguish an object present in the image from others using a database that stores data characteristics of target objects; associate the object with information; and
 - return the information to the network-enabled device; and
 - the network-enabled device further programmed to present the information related to the object to a user.

Ex. 1001, 11:55–12:2.

E. Applied References

Petitioner relies upon the following references:

Ogasawara, U.S. Patent No. 6,512,919 B2 (Ex. 1005, “Ogasawara”), filed March 30, 1999, issued January 28, 2003.

Bolle et al., U.S. Patent No. 5,546,475 (Ex. 1006, “Bolle”), filed April 29, 1994, issued August 13, 1996.

L. O’Gorman and R. Kasturi, *Executive Briefing: Document Image Analysis*, IEEE Computer Society (1997) (Ex. 1007, “O’Gorman”). Petitioner submits “[O’Gorman] was publicly accessible on or shortly after May 6, 1997.” Ex. 1019

¶ 62 (Declaration of Sylvia D. Hall-Ellis, Ph.D.); *see* Pet. 55 (citing Ex. 1019 ¶¶ 55–64).

Pet. 7. Petitioner also relies upon the Declaration of Jeffrey J. Rodriguez, Ph.D. (Ex. 1003). Patent Owner supports its Preliminary Response with the Declaration of Chandrajit Bajaj, Ph.D. (Ex. 2001).

F. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1, 2, 4, 7, 9, 18, and 20 of the '529 patent based on the following grounds.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4, 7, 9, 18	103 ²	Ogasawara, Bolle
20	103	Ogasawara, Bolle, O’Gorman

Pet. 7.

II. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a)

A. Overview

Patent Owner requests that we exercise our discretion under 35 U.S.C. § 314(a) to deny the Petition under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). Prelim. Resp. 19–32; *see Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”). According to Patent Owner, referring to the District Court Case, “Petitioner is plainly attempting to maintain parallel forums to assert its invalidity defenses, including invalidity defenses based on patents

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the '529 patent was filed before March 16, 2013, the effective date of the relevant amendment, the pre-AIA version of § 103 applies.

and printed publications in **both** forums.” Prelim. Resp. 19. For the reasons that follow, we decline to exercise our discretion to deny *inter partes* review.

In assessing whether to exercise such discretion, the Board weighs the following factors:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Fintiv at 6. Recognizing that “there is some overlap among these factors” and that “[s]ome facts may be relevant to more than one factor,” the Board “takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.*

We address each *Fintiv* factor below.

B. Factor 1 (Stay of Parallel Proceeding) and Factor 2 (Proximity of Court’s Trial Date)

As Patent Owner acknowledges, no trial date has been set. Prelim. Resp. 28. Nor has a stay of the District Court Case been requested by either party. Pet. 65–66; Prelim. Resp. 28. However, Petitioner asserts that a stay “is likely to be granted by the district court” if this proceeding is instituted. Pet. 65–66. We do not speculate about the likelihood of a stay, and find on

balance that these factors weigh against exercising discretion to deny *inter partes* review.

C. Factor 3 (Investment in Parallel Proceeding) and Factor 4 (Overlap with Issues Raised in Parallel Proceeding)

Patent Owner faults Petitioner for delay in filing the Petition. Prelim. Resp. 26–27. According to Patent Owner, “Petitioner’s failure to explain its delay is especially egregious here, where that unexplained delay allowed the district court case to proceed and the parties and Court to expend significant resources on the litigation.” *Id.* Further, Patent Owner argues that the issues and arguments raised in the Petition are the same as those in the District Court Case. *Id.* at 23–26.

We do not agree that these factors favor exercising our discretion to deny *inter partes* review. Other than citing the *Markman* hearing by the district court, which resulted in a Claim Construction Ruling covering one limitation in the Challenged Claims (*see* Ex. 1041), and service of initial discovery requests (Prelim. Resp. 27), Patent Owner does not support its contention that the parties and the Court have made a “tremendous investment” in the District Court Case (*id.* at 22). Moreover, Petitioner has been reasonably diligent, filing the Petition “shortly after the parties filed their joint claim construction statement” and within a few months of receiving Patent Owner’s infringement contentions. Pet. 64 (Petitioner highlighting that “Patent Owner filed the parallel district court litigation on August 27, 2020, during the global pandemic with work and travel restrictions, asserting infringement of eight patents with 264 total claims.”); *see* Prelim. Resp. 22 (acknowledging Petitioner filed the Petition about three months from service of infringement contentions in an eight-patent case).

Furthermore, citing *Sand Revolution II, LLC v. Continental Intermodal Group–Trucking LLC*, IPR2019-01393, Paper 24 (PTAB June 16, 2020) (informative), Petitioner filed a stipulation that if *inter partes* review is initiated, it will not assert invalidity of the asserted claims in the District Court Case based on any of the grounds listed in the Petition, “or on any other ground involving the Ogasawara, Bolle, and O’Gorman references, alone under 35 U.S.C. § 102, or in combination with any other reference under 35 U.S.C. § 103.” Ex. 1011, 2.

Patent Owner criticizes this as a “very narrow” stipulation that “is hardly any waiver at all.” Prelim. Resp. 21, 25. We disagree. Although Petitioner has not stipulated to forgo relying on all the patents and prior art publications that could have reasonably been raised in the *inter partes* review (see *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 18–19 (precedential as to § II.A.)), Petitioner’s stipulation will likely contribute to streamlining the issues presented there as to the ’529 patent. See *Sand Revolution II*, Paper 24 at 11–12 (similar stipulation “mitigates to some degree the concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions”).

We are persuaded that the stipulation here is sufficient to “mitigate[] to some degree” the overlap caused by Petitioner’s reliance on Ogasawara and Bolle. Accordingly, we find on balance that these factors weigh against exercising discretion to deny *inter partes* review.

D. Factor 5 (Commonality of Parties in Parallel Proceeding)

There is no dispute that Petitioner is a party to the District Court Case. Pet. 66; Prelim. Resp. 30. Given that there is no trial date set in the District

Court Case, we determine this factor weighs against exercising discretion to deny *inter partes* review. See *MED-EL Elektromedizinische Geräte Ges.m.b.H v. Advanced Bionics AG*, IPR2020-00190, Paper 15 at 14–15 (PTAB June 3, 2020) (Institution Decision) (overlap of issues and parties, especially with an uncertain trial date, weighs in favor of institution because petitioner would be estopped in district court from raising the same issues upon issuance of the Board’s final written decision).

E. Factor 6 (Other Circumstances)

Patent Owner contends “the merits of the grounds asserted in the instant Petition are far from strong.” Prelim. Resp. 30–31. Petitioner disagrees, arguing “[t]he merits strongly weigh in favor of instituting trial as shown through the strength of the grounds in this Petition.” Pet. 66. We have reviewed Petitioner’s unpatentability arguments and Patent Owner’s preliminary responses, and based on the record before us, we disagree with Patent Owner that the merits are “far from strong.” Rather, we find that Petitioner has shown a reasonable likelihood of success on the merits as discussed below in Section III. Although Petitioner has met its burden for institution, we do not find that Petitioner’s showing is “particularly strong” so as to weigh against exercising discretion to deny *inter partes* review under factor 6. See *Fintiv*, Paper 11 at 14–15 (noting that the merits favor institution under factor 6 “if the merits of a ground raised in the petition seem particularly strong”). Thus, we determine this factor is neutral.

We also do not agree with Patent Owner that we should consider the existence of trade secret and breach of contract claims in the District Court Case in our analysis. Patent Owner cites no authority for this argument.

On the contrary, Petitioner’s argument that we should consider the complexity of the District Court Case involving multiple patents has been endorsed in *Apple, Inc. v. SEVEN Networks, LLC*, IPR2020-00156, Paper 10 at 21–22 (PTAB June 15, 2020), and more recently considered in *Satco Products, Inc. v. The Regents of the University of California*, IPR2021-00794, Paper 14 (PTAB Nov. 14, 2021) (Crumbley, J., concurring). However, although we see merit in Petitioner’s argument, we do not find it necessary to take a position on that issue in this proceeding in view of our holistic assessment below.

F. Holistic Assessment of Factors

We consider the above factors and take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. Thus, based on our assessment of the *Fintiv* factors as a whole, we decline to exercise our discretion under 35 U.S.C. § 314(a) to deny *inter partes* review.

III. PATENTABILITY

A. Applicable Law

Petitioner challenges the patentability of claims 1, 2, 4, 7, 9, 18, and 20 of the ’529 patent on grounds that the claims would have been obvious under 35 U.S.C. § 103 in light of various references including: Ogasawara, Bolle, and O’Gorman. “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”))

(emphasis added). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented 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 skill in the art; and (4) when of record, objective evidence of obviousness or non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations may include the following: “commercial success, long felt but unsolved needs, failure of others, etc.”³ *Id.* The totality of the evidence submitted may show that the challenged claims would not have been obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

³ At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art, at the time of the invention of the '529 patent:

would have had a range of knowledge roughly equivalent to the knowledge and/or training of a person holding the degree of Bachelor of Science in Electrical Engineering, Computer Science, Computer Engineering, or equivalent, and one to two years of experience working with image processing, image recognition, or a related field. . . . Individuals with additional education or additional practical experience could still be of ordinary skill in the art if that additional aspect compensates for a deficit in the other aspect of the requirements stated above.

Pet. 20–21 (citing Ex. 1003 ¶¶ 51–52). Patent Owner does not present an alternative definition at this stage of the proceeding. *See generally* Prelim. Resp.

We regard Petitioner's proposed definition as reasonable, and consistent with the prior art before us. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (determining that the Board of Patent Appeals and Interferences did not err in concluding that the level of ordinary skill in the art was best determined by the references of record). Accordingly, we apply the level of skill set forth above, which also is consistent with the testimony of Dr. Rodriguez (Ex. 1003 ¶¶ 51–52).

C. Claim Construction – Distinguishing Objects Limitation

We construe claims “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) (2020); *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *see CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (There is “a ‘heavy presumption’ that a claim term carries its ordinary and customary meaning.”). “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). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317.

Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we 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 asserts that the parties “have offered competing constructions for a few terms in the asserted claims of the ’529 patent before the district court.” Pet. 28. Petitioner argues “the prior art invalidates the

challenged claims under any reasonable construction of the terms, and claim construction is therefore unnecessary for purposes of this Petition.” Pet. 28. Nevertheless, the parties dispute the meaning of the limitation “distinguish an object present in the image from others using a database that stores data characteristics of target objects,” as recited in independent claim 1.

Hereinafter, this limitation is referred to as the “Distinguishing Objects Limitation.”

Petitioner proposes that the Distinguishing Objects Limitation means “distinguish an object present in the image from others *by matching* data characteristics of the object to data characteristics of target objects stored in the database.” Pet. 34 (emphasis added); *see* Pet. 34–38. Petitioner asserts that in the district court “[t]he Patent Owner proposed: ‘no construction necessary—plain and ordinary meaning.’” Pet. 34. Petitioner argues that Patent Owner’s plain and ordinary meaning before the district court includes an attempt “to read this limitation for purposes of infringement to encompass using symbol information present in the image (e.g., of a check) to search a database of target objects (e.g., types of acceptable checks) to determine whether the object is a target object versus other objects (e.g., non-acceptable checks).” Pet. 34–35. In this proceeding, however, Patent Owner argues Petitioner “misrepresents Patent Owner’s infringement contentions,” and that Petitioner’s proposed construction of the Distinguishing Objects Limitation is “not reasonable,” is an “overly limiting rewrite of the claim language,” is “simply far-fetched,” and “unabashedly rewrites the limitation.” Prelim. Resp. 32–36 (emphasis omitted). Notably, despite those characterizations and despite acknowledging that the meaning of this limitation is disputed, Patent Owner stands behind its naked assertion

of “plain and ordinary meaning” without stating with particularity what it believes that meaning *is*. *See, e.g.*, Prelim. Resp. 32–37.

After filing of the Petition and Preliminary Response, the district court in the District Court Case entered a *Markman* order construing the Distinguishing Objects Limitation, among others. *See* Ex. 1041, 16–18, 21–22.⁴ For that limitation, as here, in district court Patent Owner proposed the construction of “plain and ordinary meaning.” *Id.* at 16.

The district court construed the Distinguishing Objects Limitation to mean “distinguish an object present in the image from others using a database that stores data characteristics of target objects *to find a match*.” Ex. 1041, 21–22 (emphasis added). In adopting this construction, the district court explained:

The Court agrees with Defendants that the claimed invention requires making a “match” “based on comparing parameters” in order to “recognize[] the target as a known target from the target database.” The intrinsic evidence consistently emphasizes that the system compares parameters in order to match a target object with an object in a database in order to “recognize” the target. *See* ’532 Patent at 1:49–62 (disclosing that as part of the “present invention,” images may be decomposed to determine “unique characteristics,” which are “used to provide the best match or matches in the data base, the ‘best’ determination being assisted by the partial symbolic information, if that is available”), 3:11–12, 3:36–48 (“At the heart of the present invention is a high-speed image matching engine that returns unambiguous matches to target objects contained in a wide variety of potential input images.”), 4:37–48, 10:6–25 (“The unique database search methodology and subsequent object match scoring criteria are novel aspects of the present invention that deserve special attention.”), 11:3–4, Figs. 1, 3A, 3B. That some claims explicitly

⁴ Unless otherwise specified, citations to exhibits use the page numbers assigned by the parties, not the original page numbers.

recite “matching” does not overcome the clear statements defining the scope of the invention in the specification. Further, at the hearing, Plaintiffs were unable to articulate how the system would “recognize” a target object by “comparing parameters” without making some “match.” *See* Docket No. 138 at 47:14–48:14. Nevertheless, the Court finds that the language “best” match is unwarranted as the intrinsic evidence does not require a “best” match given that multiple “best” matches may be obtained, and adding this language would only lead to confusion regarding what is required for a match to be the “best.”

Id. at 17–18, 21 (footnote omitted). The district court did not adopt Patent Owner’s plain and ordinary meaning.

We have reviewed the district court’s reasoning, as well as the ’529 patent and other evidence of record before us, and agree that for reasons given by the district court the Distinguishing Objects Limitation should be given the same construction as determined by the district court. We therefore adopt the district court’s construction for that term. Ex. 1041, 21–22. Accordingly, at this stage of the proceeding, we construe the Distinguishing Objects Limitation to mean “distinguish an object present in the image from others using a database that stores data characteristics of target objects to find a match.” *See id.*

D. Patent Owner’s “Shifting-Sands” Allegation

Patent Owner asserts Petitioner fails to identify with particularity the grounds on which the challenge to each claim is based, as required by 35 U.S.C. § 312(a)(3). Prelim. Resp. 38. According to Patent Owner, although Petitioner explicitly identifies Ground 1 as based on obviousness over the combination of Ogasawara and Bolle (Pet. 7), “Petitioner appears to also be asserting in Ground 1 that Ogasawara anticipates at least Claim 1.” Prelim. Resp. 37 (footnote omitted). Patent Owner’s contention is based on

Petitioner's asserting, within its arguments for Ground 1, that Ogasawara discloses each limitation of claim 1. *Id.* Although Petitioner has alleged that Ogasawara discloses every limitation of claim 1, Petitioner also has provided for contingencies in case Ogasawara does not disclose certain limitations of claim 1 and teachings from Bolle are needed to be combined with teachings from Ogasawara to render claim 1 obvious. *See, e.g.*, Pet. 34–41. Patent Owner also asserts that Petitioner's attempt to account for multiple theories of claim construction with regard to the Distinguishing Objects Limitation while contending that no specific claim construction is necessary “add[s] to the confusion.” Prelim. Resp. 38–39.

Based on the record before us, we find Petitioner does not fail to identify with particularity the grounds on which the challenge to each claim is based. Indeed, in accordance with 37 C.F.R. § 42.104(b)(2) and as noted above, Petitioner explicitly identifies Ground 1 as based on obviousness over the combination of Ogasawara and Bolle. Pet. 7. Moreover, in identifying its grounds for unpatentability, Petitioner identifies neither anticipation by Ogasawara nor obviousness based on Ogasawara alone as such grounds. We also do not find confusing Petitioner's typical attempts to account for multiple potential theories of claim construction while also stating that no claim construction is necessary. What Petitioner is alleging, in effect, is that whatever is the theory of claim construction, Petitioner prevails.

Accordingly, we find Patent Owner's various “shifting-sands” arguments unavailing.

E. Obviousness of Claims 1, 2, 4, 7, 9, and 18 over the Combination of Ogasawara and Bolle

Petitioner contends claims 1, 2, 4, 7, 9, and 18 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Ogasawara (Ex. 1005) and Bolle (Ex. 1006). Pet. 28–54; Reply 1–5. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 37–50; Sur-Reply 1–5. Based on our review of the Petition, Preliminary Response, and supplemental briefing, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing that claims 1, 2, 4, 7, 9, and 18 are unpatentable as obvious over the combination of Ogasawara and Bolle, as discussed below. We turn first to an overview of Ogasawara and Bolle.

1. Overview of Ogasawara (Ex. 1005)

Ogasawara relates generally to “an electronic shopping system which utilizes a program downloadable wireless video phone as a purpose-type dedicated terminal which enables a shopper to capture, recognize and decode captured images.” Ex. 1005, 1:16–21; *see id.* at code (57). In Ogasawara, an integral digital camera is attached to the wireless telephone to facilitate the selection of items to be purchased and is controlled to function as a bar code or product icon image capture device. *Id.* at code (57). Character or pattern recognition software translates the bar or icon code image into an appropriate item identifier. *Id.*

Figure 1 of Ogasawara is reproduced below.

FIG. 1

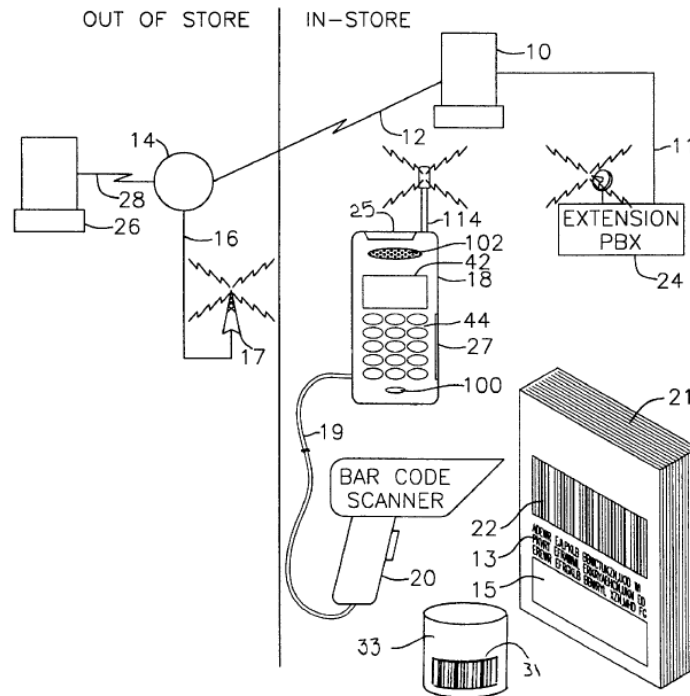


Figure 1 depicts a schematic overview of an electronic shopping system.

Ex. 1005, 4:9–10, Fig. 1.

Figure 1 of Ogasawara shows an electronic system comprising store server 10 in communication with a commercial telephone network 14.

Ex. 1005, 4:66–5:2. Commercial telephone network 14 facilitates a connection of store server 10 to wireless telephone 18. *Id.* at 5:10–11.

Optionally, external bar code scanner 20 communicates with the wireless telephone 18 via wire connection 19. *Id.* at 5:31–32. Alternatively, a built-in bar code scanner 25 and/or a built-in IC card reader/writer 27 are formed integrally with the wireless telephone 18. *Id.* at 5:36–38. In a store, a bar code on a purchased item 33 is scanned by bar code scanner 20 attached to a

wireless telephone 18. Catalog 21 of the items which can be purchased contains a bar code 22 for each such item, and preferably also contains descriptive text 13 and a picture 15 of each item. *Id.* at 5:40–43.

Figure 10 of Ogasawara is reproduced below.

FIG. 10

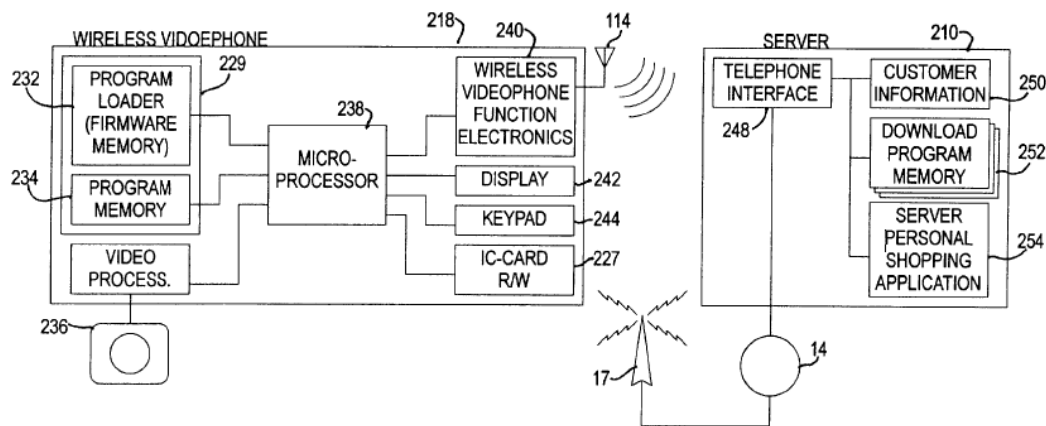


Figure 10 depicts a block diagram of an electronic shopping system having a wireless videophone.

Ex. 1005, 4:34–36, Fig. 10. Figure 10 illustrates wireless videophone 218 used in combination with store or remote server 210. *Id.* at 15:55–56.

Wireless videophone 218 includes miniature digital image capture device 236, such as a CCD camera system. *Id.* at 15:63–16:1. Digital camera 236 includes processing circuitry that translates the visual image acquired by the camera's lens into digital signals suitable for processing by microprocessor 238 into a form that can be transmitted by functional electronic section 240. *Id.* at 16:7–12.

As described by Ogasawara, since digital camera 236 can be provided to the wireless videophone 218 in place of a bar code scanner, the tailored purchase transaction program may additionally include character recognition

and/or pattern recognition software, as well as bar code decode software. This would allow the wireless videophone to function in a manner similar to the wireless telephone and bar code scanner embodiment illustrated in Figure 1. Ex. 1005, 18:15–22.

Ogasawara also discloses that advanced pattern recognition software is able to enhance the performance of the wireless videophone by offering the capability to capture merchandise information from items that are not identified by either a bar code or an alpha-numeric label. Ex. 1005, 23:11–15. According to Ogasawara, advanced pattern recognition software allows a consumer to capture a videographic image of an apple, for example, and to have the apple be recognized as such by the pattern recognition software. *Id.* at 23:16–19. “This capability is useful for any merchandise item having a distinct or identifiable shape or other visually identifiable characteristic. Such pattern recognition is accomplished within the wireless videophone, by specialized downloaded software.” *Id.* at 23:19–23.

We further discuss below the disclosure of Ogasawara in connection with the parties’ arguments.

2. *Overview of Bolle (Ex. 1006)*

Bolle relates generally to “recognizing (i.e., identifying, classifying, grading, and verifying) objects using computerized optical scanning devices,” and “a trainable system and method relating to recognizing bulk items using image processing.” Ex. 1006, 1:6–10; *see id.* at code (57). In Bolle, an image processing system takes digitized images of a scene. *Id.* at code (57). Using an algorithm, an object image is segmented from a background image. *Id.* The object image is then processed and compared to

stored reference images. *Id.* The object is recognized when a match occurs.
Id.

Figure 4 of Bolle is reproduced below.

FIG. 4

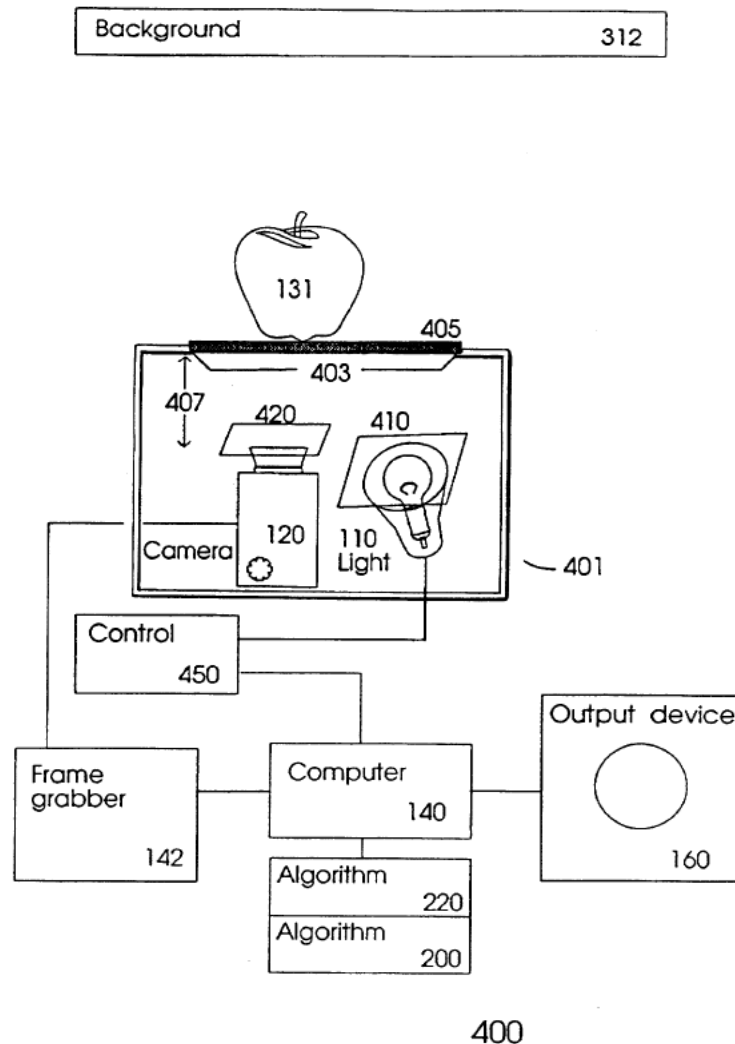


Figure 4 depicts a block diagram of an apparatus for segmenting images and recognizing an object in images.

Ex. 1006, 6:30–32, Fig. 4. Figure 4 shows a block diagram of system 400 for imaging scenes, segmenting object images 130 from their background image 311 of a physical background 312, and recognizing object(s) 131. *Id.* at 9:21–25. System 400 comprises opening 403 to allow object 131 to be

imaged by camera 120 and illuminated by light 110. *Id.* at 9:39–43. The system further includes a segmenting algorithm for segmenting an image of object 131 from an image of the scene. *Id.* at 10:17–19. After the image is segmented, computer 140 performs a computation to determine features of the target object. *Id.* at 12:58–62. Further, computer 140, via algorithm 200, compares normalized characteristics of the target object 131 to one or more normalized referenced object characteristics. *Id.* at 13:61–63.

Bolle further describes comparison/matching of the target characterization to the reference characterizations that is performed according to one or more matching algorithms, such as a nearest neighbor classification. Ex. 1006, 15:50–67.

We further discuss below the disclosure of Bolle in connection with the parties’ arguments.

3. *Analysis*

a) *Independent Claim 1*

Petitioner provides an element-by-element analysis of independent claim 1 in relation to Ogasawara and Bolle. Pet. 28–43; *see* Reply 1–5. Petitioner’s analysis relies on testimony from Dr. Rodriguez. Ex. 1003 ¶¶ 98–140. Patent Owner opposes and relies on testimony from Dr. Bajaj. Prelim. Resp. 48–50; *see id.* at 39–47; Ex. 2001 ¶¶ 31–32; Sur-Reply 1–5. As discussed below, Petitioner contends each limitation in claim 1 is met by the combination of Ogasawara and Bolle.

(1) *(Preamble) “A system comprising:”*

Petitioner contends that Ogasawara meets the preamble by disclosing an image processing system (an electronic shopping system). Pet. 29 (citing Ex. 1003 ¶¶ 111–112; Ex. 1005, 1:16–21). Patent Owner does not contend

otherwise at this stage of the proceeding. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. For the reasons given by Petitioner, we determine that Ogasawara meets this element of the claim.⁵

(2) *“a camera that captures an image”*

Petitioner contends Ogasawara teaches this limitation by disclosing a camera (e.g., digital camera 236) that captures an image (e.g., videographic image of an apple). Pet. 29 (citing Ex. 1003 ¶¶ 113–114). Referring to Figure 10 of Ogasawara, reproduced *supra*, Petitioner explains: “The camera allows a consumer to capture a videographic image of an apple, and to have the apple be recognized as such by pattern recognition software.” Pet. 29–30 (citing Ex. 1005, 23:16–20 (internal ellipses and quotation marks omitted)).

For the reasons stated in the Petition at pages 29–30, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(3) *“a network-enabled device that conducts a data processing operation on at least a portion of the image to produce data, and sends the data to a service”*

Petitioner contends Ogasawara teaches this limitation by disclosing: a network-enabled device (e.g., wireless videophone 218) that conducts a data processing operation (e.g., processing of the videographic image using compression and/or channel encoding) on at least a portion of the image to produce data (e.g., videographic image data that is compressed (JPEG/MPEG)

⁵ Neither party at this stage of the proceeding argues that the preamble of claim 1 is limiting. We likewise express no view herein.

and/or channel encoded), and sends the data to a service (e.g., computing platform on the wireless videophone 218 (e.g., purchase transaction program) or store/remote server 10, 26, 210 (e.g., personal shopping application)).

Pet. 30 (citing Ex. 1003 ¶¶ 115–121); *see* Pet. 31 (citing Ex. 1005, 16:3–7, 16:23–32, Figs. 10–12). Petitioner argues, *inter alia*, “[f]or processing, when the camera 236 on the wireless videophone 218 captures the image, the image is ‘provided to the system’s microprocessor 238 where the received videographic information is processed by an application program previously downloaded to the wireless videophone.’” Pet. 31 (citing Ex. 1005, 19:46–51). Petitioner argues the skilled artisan “would have understood that when the device’s microprocessor processes the videographic information or performs image compression, it processes at least a portion, if not all, of the image and produces resulting data.” Pet. 32 (citing Ex. 1003 ¶¶ 117–118). Petitioner argues the skilled artisan also “would have understood that channel encoding processes at least a portion of the image to produce data suitable for communication over a communication channel.” Pet. 32 (citing Ex. 1003 ¶ 119). Petitioner also explains how “Ogasawara teaches that its recognition and information-linking processes could reside on the mobile device or the server or both. Pet. 32 (citing Ex. 1005, 3:13–17, 7:34–40, 14:23–28, 18:11–37, 21:1–34, 22:51–55).

For the reasons stated in the Petition at pages 30–32, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(4) “*the service programmed to receive the data*”

Petitioner contends Ogasawara teaches this limitation by disclosing a service (e.g., computing platform on the store/remote server 10, 26, 210)

programmed to receive data (e.g., videographic image data). Pet. 33 (citing Ex. 1003 ¶¶ 122–123). As cited by Petitioner, Ogasawara discloses that “[f]ollowing processing, the videographic image data is encoded by the channel encoded circuitry 324 for modulation and transmission to a store server” (Ex. 1005, 19:52–54), and “a visual image of the merchandise item is transmitted to a server, wherein pattern recognition software makes the requisite merchandise item identification” (*id.* at 23:24–27).

For the reasons stated in the Petition at page 33, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(5) *“identify an object within the image”*

Petitioner contends Ogasawara teaches this limitation by disclosing a service (e.g., computing platform on the store/remote server 10, 26, 210) that identifies an object within the image (e.g., pattern recognition software that identifies an apple). Pet. 33 (citing Ex. 1003 ¶¶ 124–127). Petitioner argues, “Ogasawara explains that advanced pattern recognition software in the server ‘allows a consumer to capture a videographic image of an apple, ... and to have the apple be recognized as such.’” Pet. 33 (citing Ex. 1005, 23:12–27) (alteration in original).

Petitioner also contends Bolle, and more specifically, the combination of Ogasawara and Bolle, teaches this limitation by disclosing “segmenting an object from the background, determining features (i.e., characteristics) of the object, comparing the features to those of reference images, and determining the best match.” Pet. 33–34 (citing Ex. 1003 ¶ 125). Petitioner argues:

Bolle teaches using “an algorithm” whereby “the object(s) image is novelly segmented from a background image of the scene by a comparison of the two digitized images taken.” Ex.1006, 6:1–3, 8:63–66. The “processed image (that can be used to characterize features) of the object(s) is then compared to stored reference images” to determine a match. *Id.*, Abstract; *see also id.*, 12:64–13:4, 13:61–63, 16:42–45, 21:11–15. “If the target normalized histogram is matched with a reference normalized histogram in storage, the target image is recognized.” *Id.*, 16:43–45. Bolle discloses that this process of matching features is “to identify an object.” *Id.*, 16:64–66.

Pet. 34.

Petitioner argues the skilled artisan would have been motivated to combine the teachings of Ogasawara and Bolle to arrive at the invention of claim 1, including this limitation. Pet. 21–27. Petitioner argues the skilled artisan would have done so “to achieve a system that could more accurately discern the shape or other visual characteristics of an object in an image to be able to identify that object and distinguish it from others.” Pet. 21 (citing Ex. 1003 ¶¶ 98–110). Petitioner argues the skilled artisan would have recognized that “Bolle would predictably enhance the performance of the Ogasawara system,” and contends the teachings of the references themselves “provide [the skilled artisan] with a strong motivation to combine Ogasawara and Bolle.” Pet. 24 (citing Ex. 1003 ¶¶ 103–104). Petitioner argues “both references are in the same field and address the same issue in the same context—using image processing systems to identify products, such as produce, for purchase during shopping,” and “Bolle expressly describes the benefits of using its techniques with a system such as Ogasawara that does not segment the object from the background and thus cannot perceive the object’s distinct or identifiable shape or other visually identifiable characteristic.” Pet. 24 (citing Ex. 1003 ¶ 104).

Petitioner also argues the skilled artisan “would have had a reasonable expectation of success combining Bolle’s image segmentation and matching techniques with Ogasawara’s system.” Pet. 25. Petitioner argues the skilled artisan “could have combined Bolle’s image segmentation and matching techniques with Ogasawara’s system using the hardware and techniques already described in each reference, and each system would perform the same in the combined system,” and “would have recognized that using Bolle’s image segmentation and matching techniques with Ogasawara’s system would be nothing more than combining prior art elements according to known methods to yield predictable results, or the application of known techniques to improve a known device to yield predictable results.” Pet. 25 (citing Ex. 1003 ¶ 106); *see* Pet. 26–27 (“[The skilled artisan] would have thus recognized that Bolle’s algorithmic methods of image segmentation and matching are compatible with Ogasawara’s system.”).

Patent Owner asserts, relative to Ogasawara, Bolle is “from the entirely different field of agricultural produce recognition focused on providing constant illumination during an imaging process to facilitate separating a given preprogrammed object from its background to facilitate identification.” Prelim. Resp. 4. But Patent Owner provides no evidentiary support or explanation for this “entirely different field” allegation, which we find unavailing in view of Petitioner’s foregoing arguments (*see* Pet. 21–27), and otherwise does not meaningfully challenge Petitioner’s contentions concerning the motivation to combine Ogasawara and Bolle with a reasonable expectation of success. *See generally* Prelim. Resp.

Accordingly, for the reasons stated in the Petition at pages 21–27 and 33–34, Petitioner sufficiently establishes that Ogasawara alone, or in

combination with Bolle, teaches this limitation. We also are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Ogasawara and Bolle to arrive at this limitation, and, as further discussed below, the invention of claim 1. Except as noted above, Patent Owner does not contend otherwise at this stage of the proceeding.

(6) *Distinguishing Objects Limitation:*
“distinguish an object present in the image
from others using a database that stores data
characteristics of target objects”

Our construction for the Distinguishing Objects Limitation, which agrees with and adopts the construction by the district court, is “distinguish an object present in the image from others using a database that stores data characteristics of target objects to find a match.” *See supra*, Section III.C.

Petitioner contends that Ogasawara meets the Distinguishing Objects Limitation. Pet. 38–39. Petitioner argues the skilled artisan “would have understood that Ogasawara’s advanced pattern recognition identifies and distinguishes an object (e.g., an apple) in a captured image by determining visually identifiable characteristics (akin to the numeric bar code data derived from a bar code image) and using a look-up table or file to associate the visually identifiable characteristics to a corresponding product, including the item name.” Pet. 39 (citing Ex. 1003 ¶¶ 128–134; Ex. 1005, 6:45–49, 21:1–8, 21:17–34, 23:16–20). Patent Owner argues “Petitioner does not cite to anything in Ogasawara that discloses its bar code recognition software operates by deriving [sic] characteristics of the captured bar code with stored characteristics of other bar codes in a database.” Prelim. Resp. 42. Patent Owner also argues “Ogasawara’s disclosure of bar code recognition cannot

simply be mapped to the very different process of recognizing ‘visually identifiable characteristics’ of *an object*.” *Id.* We find Patent Owner’s argument persuasive that Ogasawara *alone* does not teach the Distinguishing Objects Limitation. Based on the record before us, we are not persuaded that the skilled artisan would find Ogasawara’s brief reference to “[a]dvanced pattern recognition software” (Ex. 1005, 23:11–12) a sufficient disclosure of distinguishing objects using stored object data characteristics to find matches to meet the Distinguishing Objects Limitation as we have construed it.

Petitioner also contends “[i]t is, however, unnecessary for purposes of this Petition to determine whether Ogasawara discloses [the Distinguishing Objects Limitation], because Ogasawara in combination with Bolle expressly discloses this limitation under Petitioner’s construction.” Pet. 39 (citing Ex. 1003 ¶ 130). We note, “[i]n its preliminary response, Patent Owner argued that Ogasawara is not a self-enabling reference and thus *could not alone render obvious or anticipate* [the Distinguishing Objects Limitation or the invention of claim 1].” Sur-Reply 1; *see* Prelim. Resp. 46–47. Because Petitioner argues unpatentability here over *the combination of* Ogasawara and Bolle, we find Patent Owner’s non-enablement arguments unavailing. *See Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1380 (Fed. Cir. 2021) (“In general, a prior art reference asserted under § 103 does not necessarily have to enable its own disclosure, i.e., be ‘self-enabling,’ to be relevant to the obviousness inquiry.”); *Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991) (“While a reference must enable someone to practice the invention in order to anticipate under § 102(b), a non-enabling reference may qualify as prior art for the purpose

of determining obviousness under § 103.”). Thus, we turn to Petitioner’s contention that the combination of Ogasawara and Bolle teaches the Distinguishing Objects Limitation.

Petitioner contends Bolle, and more specifically, the combination of Ogasawara and Bolle, teaches this limitation by disclosing, for example, “distinguishing an apple present in the image from other produce by matching characteristics of an image of the apple to characteristics of reference images of produce stored in database 270.” Pet. 39 (citing Ex. 1003 ¶ 130). Petitioner argues:

Bolle teaches comparing features (i.e., characteristics) of an object in an image to those of stored reference images in a reference database to find a match. *See* Ex.1006, 6:3–6 (“A processed image (that can be used to characterize features) of the object(s) is then compared to stored reference images. The object is recognized when a match occurs.”). More specifically, after segmentation, discussed [in connection with the limitation “identify an object within the image”], the computer 140 performs a computation process “to determine features of the target object,” which may include “color, shape, texture, density of the segmented image of target object.” *Id.*, 12:64–13:4. Then, in “step 260 the count-normalized characterization of the target object is compared with the count-normalized characterizations of reference objects, which are stored in memory storage 270” to determine a match. *Id.*, 8:34–37, 13:55 (“database 270”), 14:1–2[] (“One or more reference object characteristics are stored 270 on a memory storage device.”). “If the target normalized histogram is matched with a reference normalized histogram in storage, the target image is recognized.” *Id.*, 16:43–45.

Pet. 39–40. Petitioner argues, “[t]o find a match, Bolle uses algorithms to calculate characteristics of a segmented object and then uses matching algorithms to match the characteristics of a segmented object to characteristics of reference objects stored in a database, which may be

located in the computer or a separate storage device.” Pet. 26 (citing Ex. 1006, 8:12–38, 6:54–57, 15:50–16:6). Also, as discussed above, Petitioner argues the skilled artisan “would have had a reasonable expectation of success combining Bolle’s image segmentation and matching techniques with Ogasawara’s system.” Pet. 25.

In response to Petitioner’s unpatentability arguments over the combination of Ogasawara and Bolle, Patent Owner argues:

But what is clearly missing from Petitioner’s analysis is any notion that Bolle teaches ***distinguishing an object present in the image from other objects***. Indeed, Petitioner cites to the same teachings in Bolle for the previous limitation of “identify[ing] an object within the image” (Petition at 33-34), which raises the issue of what, exactly, does Petitioner contend Bolle does to distinguish an object ***after*** it has already been identified using the matching of feature characterizations. There is simply nothing left in Petitioner’s contention to map to the distinguishing step of the claim.

Prelim. Resp. 49–50. We find Patent Owner’s argument unavailing. Patent Owner’s argument is not commensurate with the scope of the Distinguishing Objects Limitation as adopted herein (and by the district court in the District Court Case). Although Patent Owner suggests Bolle does not teach both “identify[ing] *an object* within the image” and “distinguish[ing] *an object*” (Ex. 1001, 11:60–64), it does so divorced from the actual, broad limitations of claim 1, *using only attorney-argument*, and without telling us, for example, how Bolle could teach “distinguish[ing] *an object*” as evidenced and argued by Petitioner without “identify[ing] *an object*” to distinguish. Prelim. Resp. 49–50; *see In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (“Attorney’s argument in a brief cannot take the place of evidence.”). Moreover, Patent Owner does not directly address or otherwise

meaningfully challenge Petitioner's specific limitation-by-limitation contentions outlined above.

Accordingly, for the reasons stated in the Petition at pages 21–27 and 34–41, Petitioner sufficiently establishes that the combination of Ogasawara and Bolle teaches this limitation. We remain persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Ogasawara and Bolle to arrive at this limitation, and, as further discussed below, the invention of claim 1.

(7) “*associate the object with information*”

Petitioner contends Ogasawara teaches this limitation by disclosing a service (e.g., computing platform on the store/remote server 10, 26, 210) that associates an object (e.g., the apple) with information (e.g., item name and price). Pet. 41 (citing Ex. 1003 ¶¶ 135–136). Petitioner argues, *inter alia*, “Ogasawara's advanced pattern recognition software ‘allows a consumer to capture a videographic image of an apple, ... and to have the apple be recognized as such’ and ‘makes the requisite merchandise item identification.’” Pet. 41 (citing Ex. 1005, 23:16–32) (alteration in original). Petitioner argues, in Ogasawara, “[o]nce the object is recognized, information is associated with the object such as ‘item name.’” Pet. 41 (citing Ex. 1005, 21:1–34, 22:40–45, 23:16–32).

For the reasons stated in the Petition at pages 41–42, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(8) *“return the information to the network-enabled device”*

Petitioner contends Ogasawara teaches this limitation by disclosing a service (e.g., computing platform on the store/remote server 10, 26, 210) that returns information (e.g., item name and price) to a network-enabled device (e.g., wireless videophone 218). Pet. 42 (citing Ex. 1003 ¶¶ 137–138).

Petitioner argues, *inter alia*, Ogasawara discloses “[m]erchandise information is . . . returned to the customer for display by the wireless videophone.” Pet. 42 (citing Ex. 1005, 23:30–32). As cited by Petitioner, Ogasawara discloses “[a]n ‘item selection complete’ response is then issued by the server and received by the customer’s wireless videophone through its telephone function and the response is displayed to the customer on the system’s integral graphics display screen,” where the displayed response may include “the item name, item price, and the like, in order that the consumer may confirm that this is, indeed, the item that they selected.” Pet. 42–43 (citing Ex. 1005, 21:26–35).

For the reasons stated in the Petition at pages 42–43, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(9) *“the network-enabled device further programmed to present the information related to the object to a user”*

Petitioner contends Ogasawara teaches this limitation by disclosing a network-enabled device (wireless videophone 218) is programmed to present (e.g., on the display of wireless videophone 218) information related to an object (e.g., item name and price) to a user. Pet. 43 (citing Ex. 1003 ¶¶ 139–140). As noted above, Petitioner argues Ogasawara discloses

“[m]erchandise information is [] returned to the customer for display by the wireless videophone.” Pet. 43 (citing Ex. 1005, 23:30–32). As cited by Petitioner, Ogasawara discloses that merchandise information, such as “the item name, item price, and the like” is “displayed to the customer on the system’s integral graphics display screen.” Pet. 43 (citing Ex. 1005, 21:26–35, 7:38–41).

For the reasons stated in the Petition at page 43, Petitioner sufficiently establishes that Ogasawara teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

(10) Conclusion

At this stage of the proceeding and based on the record before us, we are persuaded that Petitioner’s cited evidence provides sufficient rational reasons for purposes of institution to combine Ogasawara and Bolle with a reasonable expectation of success, and sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as obvious over the combination of Ogasawara and Bolle.

To the extent that Patent Owner attempts to refute Petitioner’s obviousness showing based on allegedly different objectives or purposes of the systems of Ogasawara, Bolle, and the ’529 patent (*see, e.g.*, Prelim. Resp. 3–4), we are not persuaded. It is sufficient that the skilled artisan would have had a rational reason to combine Ogasawara and Bolle to arrive at the invention of claim 1, even if the particular purpose of the invention of claim 1 is different from that of the references. *See In re Heck*, 699 F.2d 1331, 1333 (Fed. Cir. 1983) (citing *In re Gershon*, 372 F.2d 535, 538–39 (CCPA 1967)); *In re Graf*, 343 F.2d 774, 777 (CCPA 1965) (“Obviousness is not to be determined on the basis of purpose alone.”).

Patent Owner also mentions “glaring hindsight bias” in the Preliminary Response, but without meaningful analysis. *See* Prelim. Resp. 4; *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971) (“Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.”).

Accordingly, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing that independent claim 1 is unpatentable as obvious over the combination of Ogasawara and Bolle.

b) Dependent Claims 2, 4, 7, 9, and 18

Petitioner contends claims 2, 4, 7, 9, and 18, which depend directly from independent claim 1, would have been unpatentable as obvious over the combination of Ogasawara and Bolle. Pet. 43–54. The Petition provides a detailed assessment of these claims, with references to the Petition’s analysis of claim 1, disclosures in Ogasawara and Bolle, and the declaration testimony of Dr. Rodriguez. Pet. 43–54. At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to any of these claims. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 are also applicable to all Challenged Claims. *See generally* Prelim. Resp. 37–50. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as obvious over the combination of Ogasawara and Bolle. For the reasons set forth in

the Petition (Pet. 43–54), we also are persuaded that the current record sufficiently supports Petitioner’s challenges to dependent claims 2, 4, 7, 9, and 18 for purposes of institution.

c) Summary

For the foregoing reasons, and the reasons stated in the Petition (Pet. 28–54), we determine that Petitioner demonstrates a reasonable likelihood of success in establishing the unpatentability of claims 1, 2, 4, 7, 9, and 18 as obvious over the combination of Ogasawara and Bolle.

F. Obviousness of Claim 20 over the Combination of Ogasawara, Bolle, and O’Gorman

Independent claim 1 recites, in part, “a network-enabled device that conducts a *data processing operation* on at least a portion of the image to produce data.” Ex. 1001, 11:57–59 (emphasis added). Dependent claim 20, which depends directly from claim 1, recites: “The system of claim 1 wherein the data processing operation is selected from the group consisting of contrast enhancement, noise removal, and de-blurring.” *Id.* at 12:65–67.

Petitioner contends claim 20 is unpatentable under 35 U.S.C. § 103 as obvious over the combination of Ogasawara (Ex. 1005), Bolle (Ex. 1006), and O’Gorman (Ex. 1007). Pet. 55–61. The Petition provides a detailed assessment of claim 20, with references to the Petition’s analysis of claim 1, disclosures in Ogasawara, Bolle, and O’Gorman, and the declaration testimony of Dr. Rodriguez. Pet. 55–61. For example, Petitioner argues, “[a]lthough Ogasawara and Bolle do not explicitly recite ‘contrast enhancement, noise removal, and de-blurring,’ such data processing operations were well-known in the art by November 2000.” Pet. 55. Petitioner explains how O’Gorman “describes ‘pixel processing’ after data

capture of documents by digital video, including ‘noise removal’ and ‘image enhancement,’” and that “O’Gorman also teaches that preprocessing, such as noise removal, ‘enable[s] easier subsequent detection of pertinent features and objects of interest.’” Pet. 55–56. Petitioner identifies reasons to combine Ogasawara, Bolle, and O’Gorman to arrive at this limitation, with citations to supporting evidence. Pet. 56–60. Petitioner also explains, with citations to supporting evidence, why the skilled artisan would have had a reasonable expectation of success combining O’Gorman’s preprocessing methods, such as noise removal, with the teachings of Ogasawara and Bolle. Pet. 58–60.

At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to claim 20. Rather, Patent Owner generally is of the view its alleged deficiencies in the Petition with respect to claim 1 are also applicable to claim 20. *See* Prelim. Resp. 50 (“[T]his ground of challenge fails for the same reasons that Ground 1 fails.”).

As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as obvious over the combination of Ogasawara and Bolle. For the reasons set forth in the Petition (Pet. 55–61), we also are persuaded that Petitioner’s cited evidence provides sufficient rational reasons for purposes of institution to combine Ogasawara, Bolle, and O’Gorman with a reasonable expectation of success, and sufficiently supports Petitioner’s contention that claim 20 is unpatentable as obvious over the combination of Ogasawara, Bolle, and O’Gorman. Accordingly, we determine that Petitioner has established a reasonable likelihood that it would prevail in

showing that claim 20 is unpatentable as obvious over the combination of Ogasawara, Bolle, and O’Gorman.

IV. CONCLUSION

Based on the evidence before us, we determine that Petitioner has established a reasonable likelihood that claims 1, 2, 4, 7, 9, 18, and 20 of the ’529 patent are unpatentable. Accordingly, we institute trial on all the challenges in the Petition.

At this stage of the proceeding, the Board has not made a final determination on the construction of any claim term or the patentability of any challenged claim.

V. ORDER

Upon consideration of the record before us, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 2, 4, 7, 9, 18, and 20 of the ’529 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’529 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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