

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.

IPR2021-01332
Patent 9,324,004 B2

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

LEE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Bank of America, N.A. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–3, 6, and 18 (the “challenged claims”) of U.S. Patent No. 9,324,004 B2 (Ex. 1001, “the ’004 patent”). Paper 2 (“Pet.”). Nant Holdings IP, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply to Patent Owner’s Preliminary Response (Paper 7, “Prelim. Reply”), and Patent Owner filed a Preliminary Sur-reply to Patent Owner’s Preliminary Reply (Paper 8, “Prelim. Sur-reply”).

The Board has authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information 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.”

For the reasons stated below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one challenged claim. We therefore institute *inter partes* review as to all of the challenged claims of the ’004 patent and all of the asserted grounds of unpatentability stated 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 identify the following proceeding in the Central District of California involving the '004 patent: *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.). Pet. 63; Paper 4, 2.

C. Real Parties-in-Interest

The Petitioner identifies Bank of America, N.A., and Bank of America Corporation as the real parties-in-interest. Pet. 63. Patent Owner in its Preliminary Response does not contest this identification. Patent Owner identifies Nant Holdings IP, LLC as the real party-in-interest. Paper 4, 2.

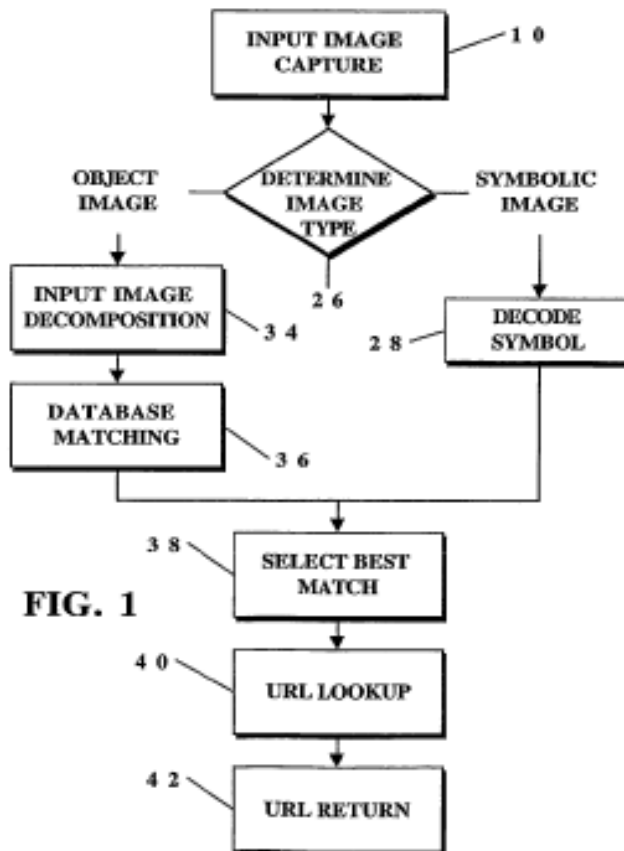
D. The '004 Patent

The '004 patent relates to a method and process for identifying objects from digitally captured images thereof that uses image characteristics to identify an object from a plurality of objects in a database. Ex. 1001, 1:27–33.

The '004 patent describes traditional 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. *Id.* at 3:42–48. However, according to the '004 patent, there is a need for detecting, identifying, determining the position and orientation of, and obtaining other information about an object, without modifying or disfiguring the object, without the need for marks, symbols, codes, barcodes,

or characters on the object, and without the need to touch or disturb the object. *Id.* at 1:46–57. The '004 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 4:33–35.

Figures 1 and 2 of the '004 patent, reproduced below, collectively illustrate an embodiment of the patent. The following description will refer to both figures:



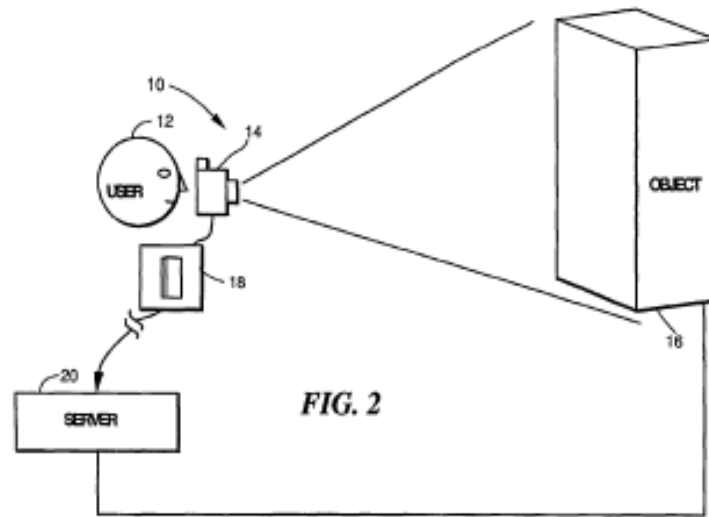


Figure 1 of the '004 patent is a schematic block diagram presenting a top-level algorithm flowchart. Ex. 1001, 4:50–51. Figure 1 shows the overall processing flow and steps in the algorithm. *Id.* at 5:33–35.

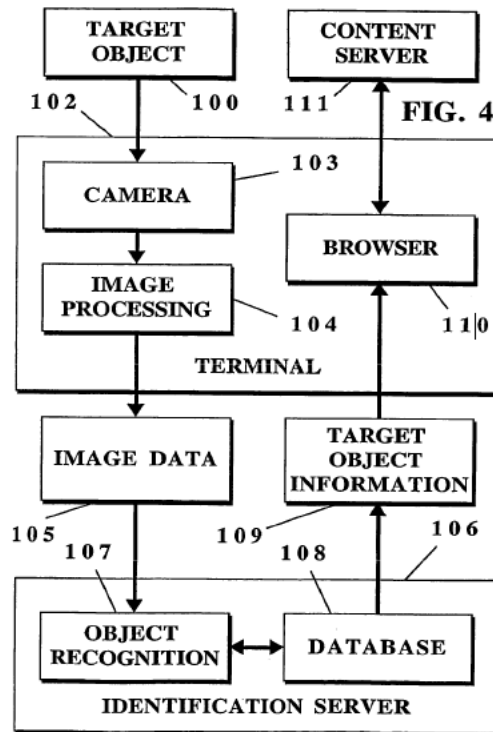
Figure 2 of the '004 patent is an idealized view of image capture. *Id.* at 4:52. As described in the '004 patent, user 12 uses a computer, mobile telephone, personal digital assistant, or other similar device 14 equipped with an image sensor (such as a CCD or CMOS digital camera). *Id.* at 5:36–39. User 12 aligns the sensor of image capture device 14 with object 16 of interest. *Id.* at 5:39–40. The linking process is then initiated, and device 14 captures digital image 18 of the scene at which it is pointed. *Id.* at 5:41–46. Image 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 5:46–49. Image 18 is subsequently transferred to image processor/server 20. *Id.* at 5:54–57.

Image type determination 26 is accomplished with a discriminator algorithm which operates on input image 18 and determines whether the input image contains recognizable symbols, such as barcodes, matrix codes, or alphanumeric characters. *Id.* at 5:63–67. If such symbols are found,

image 18 is sent to decode symbol process 28. *Id.* at 5:53–54. In decode symbol process 28, image 18 is analyzed to determine the location, size, and nature of the symbols. *Id.* at 6:13–14. The symbols are analyzed according to their type, and their content information is extracted. *Id.* at 6:14–16.

Image 18 may also or alternatively contain an object of interest, and may therefore also or alternatively be sent to the object image branch of the process flow. *Id.* at 6:3–5. In input image decomposition process 34, a “decomposition” of a high-resolution input image into several different types of quantifiable salient parameters is performed. *Id.* at 6:17–20. According to the ’004 patent, this allows for multiple independent convergent search processes of the database to occur in parallel in the database matching 36, which greatly improves image match speed and match robustness. *Id.* at 6:20–23.

Figure 4 provides an alternative explanation of the process of the ’004 patent and is reproduced below:



Ex. 1001, 4:55–56. Terminal 102 is a computing device that has an “image” capturing device such as digital camera 103 or a video camera. *Id.* at 13:23–26. Image processing software 104 converts the digital imagery into image data 105 for transmission to and analysis by identification server 106. *Id.* at 13:33–35. An example of image data 105 is MPEG video stream created from the raw imagery from camera 103. *Id.* at 13:43–50. Identification server 106 receives image data 105 and passes it to object recognition unit 107. *Id.* at 14:2–4. The ’004 patent describes:

The object recognition [unit] 107 also detects and recognizes images of the target object 100 or portions thereof. This is accomplished by analyzing the image data 105 and comparing the results to other data, representing images of a plurality of known objects, stored in the database 108, and recognizing the target object 100 if a representation of target object 100 is stored in the database 108.

Id. at 14:54–60.

In addition to containing image information, database 108 also contains address information, such as Internet URL, which corresponds to target object 100. *Id.* at 20:30–35. Identification server 106 sends the stored information corresponding to the target object terminal 102, and that information can include the Internet URL. *Id.* at 20:35–41. After receiving target object information 109, terminal 102 performs an action or actions based on the target object information, and that action can be accessing a web site. *Id.* at 20:61–65. Browser 110 can be a web browser which connects to content server 111 located at the information address, which is typically an Internet URL, included in the target object information 109. *Id.* at 21:39–42. Content server then sends content information to terminal 102 and browser 110. *Id.* at 21:56–57.

“This content information usually is pertinent to the target object 100 and can be text, audio, video, graphics, or information in any form that is usable by the browser 110 and terminal 102.” *Id.* at 21:56–60. The ’004 patent describes:

The user can perform ongoing interactions with the content server 111. For example, depending on the embodiment of the invention and the applications, the user can:

Listen to streaming audio samples if the target object 100 is an audio recording (e.g., compact audio disc).

Purchase the target object 100 via on-line transaction, with the purchase amount billed to an account linked to the terminal 102, to the individual user, to a bank account, or to a credit card.

Id. at 22:1–9.

E. Illustrative Claim

Claim 1 is independent and illustrative. Claims 2, 3, 6, and 18 each depend, directly or indirectly, from claim 1. Claim 1 recites:

1. A method for processing a video stream, comprising:

analyzing, via a mobile device, a scene represented by the video stream for at least one object;

deriving at least one characteristic of the video stream;

recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream;

providing an indication upon recognizing the at least one object as the target object; and

presenting to the user, via an address, content information associated with the target object.

Ex. 1001, 24:23–33.

*F. References and Other Evidence*¹

The Petition relies on the following references:

U.S. Patent No. 6,512,919 B2 (Ex. 1005, “Ogasawara”).²

U.S. Patent No. 5,546,475 (Ex. 1006, “Bolle”).³

U.S. Patent 6,947,571 B1 (Ex. 1022, “Rhoads”).⁴

¹ The '004 patent issued from Application 14/100,431, filed Dec. 9, 2013, which claims priority to a series of non-provisional applications the earliest of which was filed on Nov. 5, 2001, and to Provisional Application 60/246,295, filed Nov. 6, 2000. Ex. 1001, codes (21, 22, 45, 60). Petitioner assumes November 6, 2000 is the priority date of the '004 patent. Pet. 12.

² Issued Jan. 28, 2003, from Application 09/281,557, filed March 30, 1999. Ex. 1005, codes (21, 22, 45).

³ Issued Aug. 13, 1996.

⁴ Issued Sept. 20, 2005, from Application 09/571,422, filed May 15, 2000. Ex. 1022, codes (21, 22, 45).

Petitioner submits the Declaration of Jeffrey J. Rodriguez, Ph.D. (Ex. 1003, “Rodriguez Decl.”). Patent Owner submits the Declaration of Chandrajit Bajaj, Ph.D. (Ex. 2001, “Bajaj Decl.”).

G. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims would have been unpatentable on the following grounds:

Claims Challenged	35 U.S.C. § ⁵	Reference(s)
1–3, 6, 8	103(a)	Ogasawara, Bolle
1–3, 6, 8	103(a)	Ogasawara, Bolle, Rhoads

Pet. 29, 48.

II. PRELIMINARY MATTERS

A. Level of Ordinary Skill

Petitioner contends that “[a]s of November 2000, a POSITA [person of ordinary skill in the art] . . . 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.”

Pet. 21 (citing Rodriguez Decl. ¶ 53).

At this stage, Patent Owner does not provide a description of the person of ordinary skill.

Petitioner’s definition is consistent with the prior art and patent specification before us and is supported by credible expert testimony. *See*

⁵ Because the application from which the ’004 patent issued was filed before March 16, 2013, the pre-AIA (“America Invents Act”) versions of §§ 102 and 103 applies. Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011).

Okajima v. Bourdeau, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (prior art itself may reflect an appropriate level of skill). For the purpose of our decision, we adopt Petitioner's proposal.

B. Claim Construction

In an *inter partes* review, the claims of a patent shall be construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b), including construing the claims in accordance with the ordinary and customary meaning of such claims 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). The claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) is applicable.

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

The specification may reveal a special definition given to a claim term by the patentee, or the specification or prosecution history may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *Id.* at 1316. If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). The disavowal, if any, can be effectuated by

language in the specification or the prosecution history. *Poly-America, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016).

We construe claim terms only as relevant to the parties' contentions and only to the extent necessary to resolve the issues in dispute. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner asserts that the parties "have offered competing constructions for one term of the '004 patent before the district court." Pet. 28. The term is the limitation "recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream." *Id.* at 33. Hereinafter, this limitation is referred to as the "recognize" limitation.

Petitioner proposes that the "recognize" limitation means "identifying the at least one object in the scene as a target object at least in part by matching the at least one characteristic to characteristics of objects stored in a database." *Id.* at 33–34. Petitioner asserts that in the district court "[t]he Patent Owner proposed 'no construction necessary-plain and ordinary meaning.'" *Id.* at 34. Petitioner also notes that Patent Owner's plain and ordinary meaning before the district court includes an attempt "to read this limitation for purposes of infringement in the district court to mean recognizing an object (e.g., a check) in the video stream based at least in part on the at least one characteristic of the video stream (e.g., an indication of how steady the depicted image of the check is and/or an alignment of the check within the video stream). Ex. 1010, 19–23 of 41." *Id.* In this proceeding, however, Patent Owner has not made the argument that a steady image and/or alignment of the image within the video stream is required.

After filing of the Petition and prior to filing of the Preliminary Response, the district court in the parallel litigation in the Central District of California (*see supra*) entered a *Markman* order construing the recognize limitation, among others. *See* Ex. 2006, 15–16, 18–19.⁶ For that limitation, as here, in district court Patent Owner proposed the construction of “plain and ordinary meaning.” *Id.* at 15.

The district court construed the “recognize” limitation to mean “recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream by comparing the at least one characteristic with characteristics of objects stored in a database to find a match.” *Id.* at 19. In adopting this construction, the district court remarked: “The Court agrees with Defendants that the ‘recognizing’ step requires querying a database.” *Id.* The district court rejected parts of Petitioner’s proposed construction there, finding no reason to change “recognizing” to “identifying,” and also finding no reason to change “based at least in part on the at least one characteristic” to “matching the at least one characteristic.” Ex. 2006, 17–19. With regard to the requirement of “finding a match,” the district court explained: “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.” *Id.* at 18; *see also id.* at 18–19. The district court also did not adopt Patent Owner’s plain and ordinary meaning.

In its Preliminary Response, Patent Owner does not articulate its proposed construction for the “recognize” limitation in this proceeding.

⁶ Unless otherwise specified, citations to exhibits use the page numbers assigned by the parties, not the original page numbers.

Patent Owner states: (1) “the Board should reject Petitioner’s proposed construction”; and (2) “Patent Owner does not object to the Board adopting the District Court’s construction of the ‘recognize’ limitation.” Prelim. Resp. 34–35.

We have reviewed the district court’s reasoning and agree that for reasons given by the district court the recognize 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. 2006, 19. At this stage, therefore, we construe the “recognize” limitation to mean “recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream by comparing the at least one characteristic with characteristics of objects stored in a database to find a match.” *Id.*

C. Patent Owner’s Assertion that the Petition is Confusing

Patent Owner asserts that Petitioner has failed to identify with particularity the grounds on which the challenge to each claim is based, as is required by 35 U.S.C. § 312(a)(3). Prelim. Resp. 37. According to Patent Owner, “Petitioner appears to also be asserting in Ground 1 [unpatentable over Ogasawara and Bolle] that Ogasawara anticipates, or at least alone renders obvious, at least claim 1.” *Id.* at 35–36 (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.* at 35. 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. Pet. 32–33, 40. Patent Owner also asserts that Petitioner’s trying to account for multiple theories of claim construction with regard to the “recognize” limitation while contending that no specific claim construction is necessary adds to the confusion.

On this record, we do not find that Petitioner should be deemed as failing to have identified with particularity the grounds under which the claims are challenged. Anticipation has not been identified as an asserted ground of unpatentability. Nor has obviousness based on Ogasawara alone. We also do not find confusing Petitioner’s attempting 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, it would prevail.

D. Description of the Prior Art References

1. Ogasawara

Ogasawara describes an electronic shopping system that facilitates purchase transactions via a wireless phone. Ex. 1005, code (57). 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.* Character or pattern recognition software translates the bar or icon code image into an appropriate item identifier. *Id.* Figure 1, reproduced below, illustrates a schematic overview of the electronic shopping system. *Id.* at 4:9–10.

FIG. 1

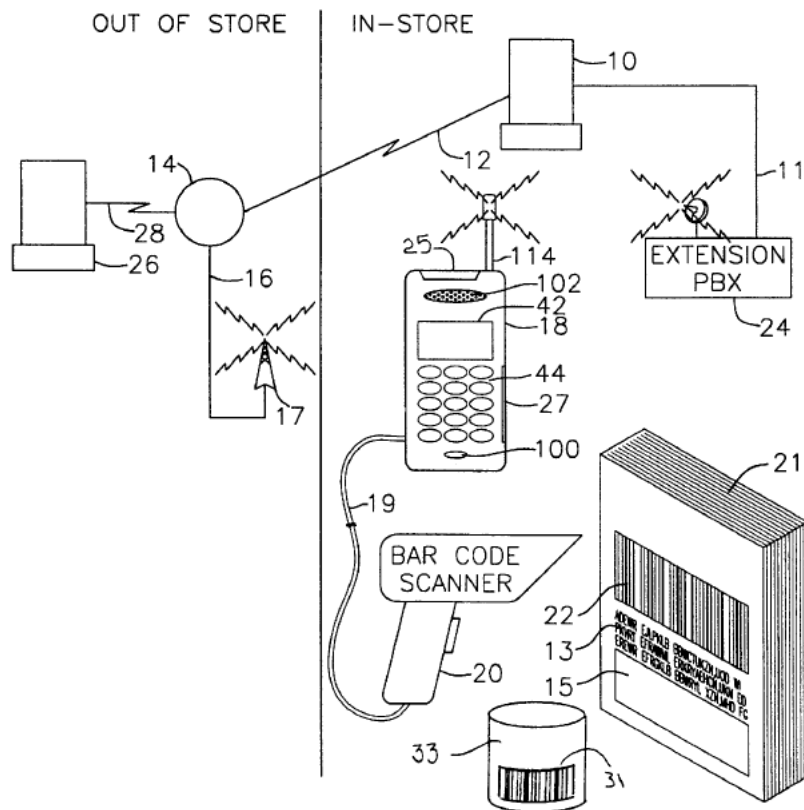


Figure 1 of Ogasawara shows an electronic system comprising store server 10 in communication with a commercial telephone network 14. *Id.* at 4:66–5:2. Commercial telephone network 14 facilitates a connection of store server 10 to wireless telephone 18. *Id.* at 5:10–11. Optionally, external bar code 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, reproduced below, is a block diagram depicting an electronic shopping system having a wireless videophone. *Id.* at 4:34–36.

FIG. 10

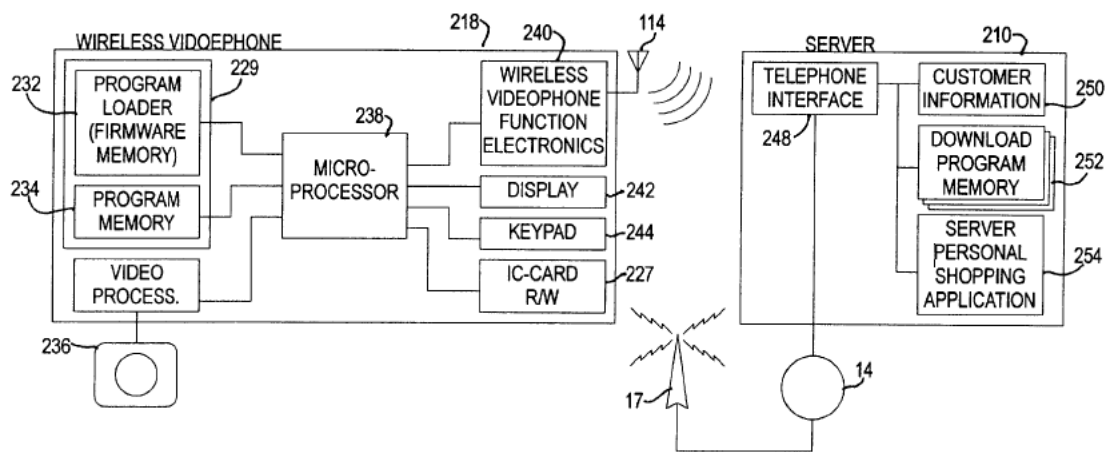


Figure 10 illustrates wireless videophone 218 used in combination with store or remote server 210. *Id.* at 15:55–56. Wireless videophone 218 includes, miniature digital image capture device 236, such as a CCD camera system. *Id.* at 15:63–16:1. Digital camera 236 includes processing circuitry that translates the visual image acquired by the camera’s lens into digital signals suitable for processing by microprocessor 238 into a form that can be broadcast transmitted by functional electronic section 240. *Id.* at 16:7–12.

As described by Ogasawara with respect to the Figure 10 embodiment, digital camera 236 provided to the wireless videophone 218 in place of a bar code scanner, and additional character recognition and/or pattern recognition software and bar code decode software in the tailored

purchase transaction program, allow the wireless videophone to function in a manner similar to the wireless telephone and bar code scanner embodiment illustrated in Figure 1. *Id.* at 18:14–21.

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. *Id.* at 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.

2. *Bolle*

Bolle describes a system and apparatus that uses image processing to recognize objects within a scene. Ex. 1006, code (57). An image processing system takes a digitized image of a scene. *Id.* 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 from Bolle, reproduced below, is a block diagram of an apparatus for segmenting images and recognizing an object in images. *Id.* at 6:30–32.

FIG. 4

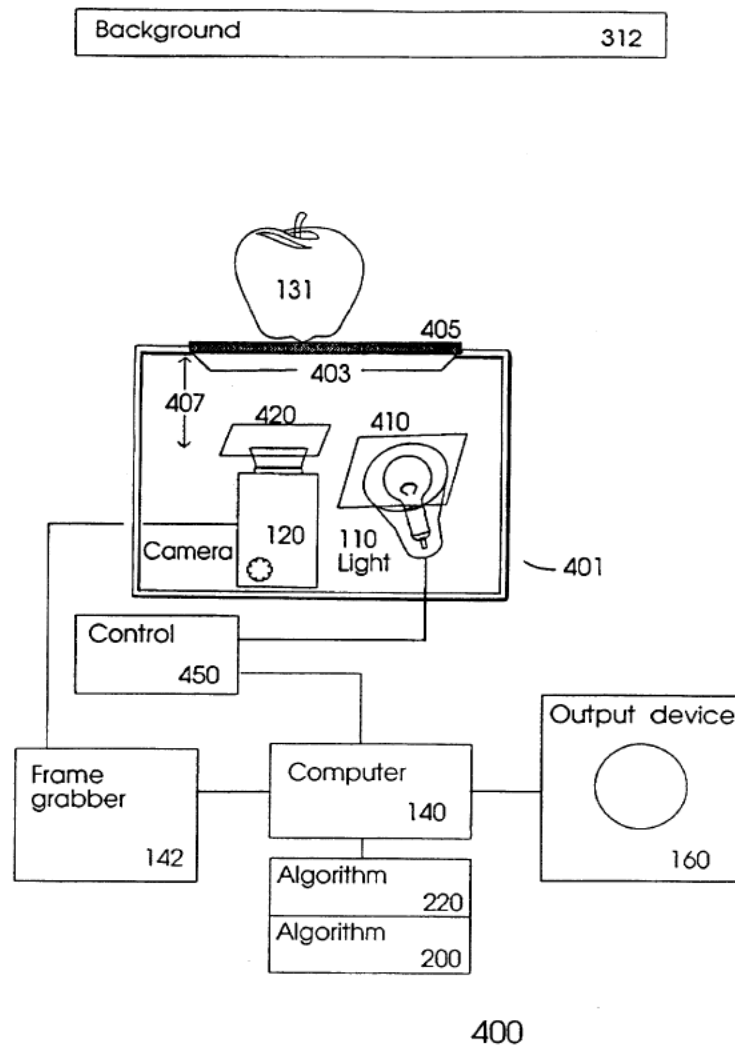


Figure 4 shows a block diagram of system 400 for imaging scenes, segmenting object images 130 from their background image 311 of a physical background 312, and recognizing object(s) 131. *Id.* at 9:21–25.

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. *Id.* at 15:50–67.

III. PATENT OWNER’S REQUEST FOR DENIAL UNDER 35 U.S.C. § 314(a)

A. *Background*

Patent Owner contends that the Board should exercise its discretion under 35 U.S.C. § 314(a) to deny the Petition. Prelim. Resp. 19–32. According to Patent Owner, referring to the parallel district court action in the Central District of California, “Petitioner is plainly attempting to maintain parallel forums to assert its invalidity defenses, including invalidity defenses based on patents and printed publications in **both** forums -- regardless of the substantive overlap between those references.” *Id.* at 19. For the reasons that follow, we decline to exercise our discretion to deny the Petition.

B. *Fintiv Factors*

The Board’s precedential decision in *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”), identifies a non-exclusive list of factors parties may consider addressing where there is a related, parallel district court action to determine whether such action provides any basis for discretionary denial. *Fintiv*, Paper 11 at 5–16. Those factors include:

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.

Id. at 5–6.

In evaluating the factors, we take a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.

Id. at 6.

C. Analysis of Fintiv Factors

1. Factors 1 and 2

As Patent Owner acknowledges, no trial date has been set. Prelim. Resp. 28. Nor has a stay of the California litigation been requested by either party. However, Petitioner asserts that a stay “is likely to be granted by the district court” if this proceeding is instituted. Pet. 60. We do not speculate about the likelihood of a stay, and find on balance that these factors weigh against exercising our discretion to deny the Petition.

2. Factors 3 and 4

Patent Owner faults Petitioner for delay in filing the Petition, i.e., taking 11 months from service of the complaint. 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.* at 27. Further, Patent Owner argues that the

issues and arguments raised in the Petition are the same as those in the district court. *Id.* at 24–26.

We do not agree that these factors favor exercising our discretion to deny the Petition. Other than citing the district court’s claim construction order and service of initial discovery requests and initial infringement and invalidity contentions, Patent Owner does not further support its contention that the parties and the district court have expended “significant resources on the litigation.” Prelim. Resp. 27. Moreover, Petitioner has been reasonably diligent, filing the Petition “four months after invalidity contentions were served, about three months after Patent Owner elected its 48 claims, and about a month before the claim construction hearings.” Pet. 59–60.

Furthermore, 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 grounds [asserted in the Petition], or on any other ground involving the Ogasawara, Bolle, and Rhoads 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 “not the sort of broad stipulation that would tip this factor in Petitioner’s favor.” Prelim. Resp. 24. 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 ’004 patent. See *Sand Revolution II, LLC v. Continental Intermodal Group–Trucking LLC*, IPR2019-01393, Paper 24 at 11–12 (PTAB June 16, 2020) (informative) (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, Bolle, and Rhoads. We conclude that these factors weigh against exercising discretion to deny institution.

3. Factor 5

Neither party disputes that Petitioner and Patent Owner are parties to the district court proceeding. Pet. 61; Prelim. Resp. 29. Because no trial date has been set, however, it is uncertain whether the final written decision in this case will come before or after the trial. Under these circumstances, the fact that the Petitioner is a defendant in the district court case may actually weigh against exercising discretion to deny institution. *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).

4. Factor 6

We do not agree with Patent Owner (Prelim. Resp. 29–30) that we should consider the existence of trade secret and breach of contract claims in the California district court case in our analysis. Patent Owner cites no authority for this argument. Moreover, Petitioner’s argument that we should consider the complexity of the district court litigation 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. 10, 2021) (Crumbley, J., concurring). However, while we see merit in Petitioner’s argument, we do not find it necessary to take a position on that issue in this proceeding. We conclude that other circumstances do not favor exercising our discretion to deny institution.

We also disagree with Patent Owner that because the ’004 patent has now expired, and has only ever been asserted against Petitioner, the issue of patentability is largely just between Petitioner and Patent Owner and the Board’s interest in determining patentability “is minimal.” Prelim. Resp. 30. Patent Owner still can assert the ’004 patent against other entities for past infringement, and even if there remains only one entity against whom the ’004 patent is assertable, the Board’s role and availability to decide petitions for *inter partes* review does not diminish.

Finally, we have considered the merits of the Petition and determined that they meet the standards for institution of *inter partes* review. In our analysis of *Fintiv* factors, we find that this factor is neutral.

5. *Summary and Conclusion*

We have considered the circumstances and facts before us in view of the *Fintiv* factors. For the reasons given, we are not persuaded to exercise our discretion to deny institution.

IV. ANALYSIS OF THE CHALLENGED CLAIMS

The Petitioner asserts claims 1–3, 6, and 18 of the ’004 patent are unpatentable for obviousness over the combinations of (1) Ogasawara and Bolle, and (2) Ogasawara, Bolle, and Rhoads. Pet. 29, 48.

A. *The Law on Obviousness*

A claim is unpatentable under 35 U.S.C. § 103(a) 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 skill in the art; and (4) so-called “secondary considerations,” including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (“the *Graham* factors”). Neither the Petition nor the Preliminary Response presents evidence on the fourth *Graham* factor. We therefore do not consider that factor in this decision.

B. *Alleged Obviousness of Claims 1–3, 6, and 18 over Ogasawara and Bolle*

1. *Claim 1*

Petitioner provides an element-by-element analysis of claim 1 in relation to Ogasawara and Bolle. Pet. 29–44. Petitioner’s analysis relies on supporting testimony from Dr. Rodriguez. Rodriguez Decl. ¶¶ 116–139. As discussed *infra*, Petitioner asserts that each limitation in claim 1 is met by the combination of Ogasawara and Bolle.

a. *(preamble) “A method for processing a video stream, comprising:”*

Petitioner contends that Ogasawara meets the preamble by disclosing a method for processing a video stream. Pet. 29–30. At this stage, Patent

Owner does not dispute this. For the reasons given by Petitioner, we determine that Ogasawara meets this element of the claim.⁷

b. *“analyzing, via a mobile device, a scene represented by the video stream for at least one object”*

Petitioner contends Ogasawara meets this limitation by disclosing wireless videophone 218 with a camera. Pet. 31. Petitioner explains:

Ogasawara explains that a shopper in a grocery store can use wireless videophone 218 “to capture a videographic image of an apple, . . . and to have the apple be recognized as such by advanced pattern recognition software” using an object’s “distinct or identifiable shape or other visually identifiable characteristic.” Ex. 1005, 23:16–20. A POSITA would have known that object recognition based on shape, for example, involves analyzing the shape of the object in the scene (processing, e.g., using techniques such as edge detection, boundary analysis, eccentricity analysis, etc.). Ex. 1003, ¶¶ 57, 119; *see also* Ex. 1005, 126:1–4, 22:41–51, 20:62–67. The purchase transaction program running on the wireless videophone 218 analyzes the video stream and performs this pattern recognition. *Id.*, 19:46–51 (“videographic image data is received by the system’s digital camera 236 and provided to the system’s microprocessor 238 where the received videographic information is processed by . . . loaded program 306”), 20:30–45.

Pet. 31–32 (footnote omitted).

At this stage, Patent Owner presents no contrary argument. For the reasons given, we are sufficiently persuaded that Ogasawara discloses this limitation.

⁷ We express no view on whether the preamble in limiting.

- c. *“deriving at least one characteristic of the video stream; recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream”*

Petitioner asserts that Ogasawara discloses deriving at least one characteristic of the video stream. Pet. 32. Petitioner explains:

Ogasawara explains that its “[a]dvanced 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” based on derived characteristics, *i.e.*, “a distinct or identifiable shape or other visually identifiable characteristic” of the apple. Ex. 1005, 23:12–30, Abstract, 3:13–17, 18:46–52, 20:55–67, 22:46–51, 22:59–23:4. Ogasawara also teaches an embodiment that derives a characteristic of a barcode (*i.e.*, “decodes the bar code image data to its corresponding numeric bar code data”), and that its advanced pattern recognition works the same way as when identifying objects using a barcode. *See, e.g., id.*, 20:55–21:8, 21:17–23, 23:12–22, 26:1–4. From these disclosures and as discussed in § III.C.2, a POSITA would understand that in order to recognize a product using “a distinct or identifiable shape or other visually identifiable characteristic,” the advanced pattern recognition software would derive such characteristic from the video stream (akin to the numeric data derived from a bar code). Ex. 1003, ¶¶ 77–79, 122.

Id. at 32–33. Alternatively, Petitioner asserts: “But it is unnecessary for purposes of this Petition to determine whether Ogasawara discloses this limitation because Ogasawara in combination with Bolle expressly discloses deriving at least one characteristic of the video stream. *Id.*, ¶ 123.” *Id.* at 33. In that regard, Petitioner explains:

Bolle analyzes a video input image to “separate the target object 131 from the background so that the system 100 can compute characteristics of separated object 131 image pixels independently of the background of the scene.” Ex. 1006, 7:18–26, 8:12–20, 10:47. More specifically, Bolle analyzes the segmented image “to determine features of the target object,” which include, for example, “color, shape, texture, density.” *Id.*,

12:60–13:4. As explained above (§III.E), a POSITA would have been motivated to combine Ogasawara and Bolle.

Id. For the limitation “*deriving at least one characteristic of the video stream,*” we discuss the combined teachings of Ogasawara and Bolle and the reasoning for combining the teachings, below, jointly with our analysis of the “recognize” limitation: “*recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream.*”

Our construction for the “recognize” limitation, which adopts the construction by the district court, is “recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream by comparing the at least one characteristic with characteristics of objects stored in a database to find a match.” *See supra*, Section II.B.

Petitioner asserts that Ogasawara discloses the “recognize” limitation by deriving at least one characteristic of the video stream and using a look-up table to associate the characteristic to a corresponding product. Pet. 39. Specifically, Petitioner asserts:

[A] POSITA would understand that Ogasawara’s advanced pattern recognition software identifies an object (e.g., an apple) in the scene of the videographic image by deriving visually identifiable characteristics of the image (akin to the numeric bar code data derived from a bar code image) and using a look-up table or file (i.e., database) to associate the visually identifiable characteristics to a corresponding product, including the item name. Ex. 1003, ¶ 129; *see also* Ex. 1005, 6:45–49, 21:1–8, 21:17–34, 23:12–20.

Id. However, Ogasawara makes no mention of any look-up table that stores visual characteristics of objects (not numeric bar code data) and Petitioner does not argue that such a visual characteristic look-up table is necessarily

present in Ogasawara to serve as Petitioner asserts. Based on the record before us, we are not persuaded that a person of ordinary skill would find Ogasawara's brief reference to "[a]dvanced pattern recognition software" (Ex. 1005, 23:11–12) a sufficient disclosure of comparing visual characteristic patterns to meet the "recognize" limitation as we have construed it.

We instead focus on Petitioner's alternative assertion that the "recognize" limitation is met by the combined teachings of Ogasawara and Bolle. Pet. 40. In that regard, Petitioner explains:

Bolle discloses identifying the at least one object (e.g., the apple) in the scene as a target object at least in part by matching the at least one derived characteristic (e.g., color, shape, texture, or density) to characteristics of objects stored in a database (e.g., memory storage/database 270). *Id.* [Ex. 1003 ¶ 127] As explained above (§III.C.3), the derived characteristic is "compared to stored reference images" and "[t]he object is recognized when a match occurs." Ex. 1006, 6:3–6. Specifically, "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.*, 8:12–38, 14:1–2, 13:55 (referring to the memory storage 270 as a "database 270"). As explained above (§III.E), a POSITA would have been motivated to combine Ogasawara and Bolle.

Id. Petitioner's above-noted assertions about Bolle's teachings are supported by the cited evidence and not disputed by Patent Owner. We now review and discuss Petitioner's stated rationale for combining the teachings of Ogasawara and Bolle. For reasons discussed below, and notwithstanding Patent Owner's arguments to the contrary, we see Petitioner's explanation as having rational underpinning and sufficient at this stage of the proceeding to support Petitioner's assertion that the combined teachings of Ogasawara and

Bolle meet the limitation of “*deriving at least one characteristic of the video stream; recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream.*”

In summary, the reasoning to combine teachings, as stated by Petitioner, is as follows:

A POSITA would have been motivated to combine Ogasawara and Bolle 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. *Id.*, ¶¶ 103–115. Combining Ogasawara and Bolle would yield a system that could achieve this by segmenting an object from its background in a captured image and matching the segmented object to images of target objects stored in a database. *Id.*

Pet. 22. In more detail, Petitioner explains that although Ogasawara describes a shopping system which uses pattern recognition software to identify objects by their visual appearance:

Ogasawara recognizes, however, that its system benefits from the object in the image “having a distinct or identifiable shape or other visually identifiable characteristic.” *Id.*, 23:20–22. In other words, there may be an object in an image that Ogasawara cannot identify because it cannot detect characteristics of that object that are distinct from other objects in the image or the background. Ex. 1003, ¶ 105. An object’s shape or other visual characteristic may not be distinct or identifiable due to the distractions from the rest of the image. *Id.* For example, parts of an image corresponding to the background may significantly perturb extracted object characteristics, causing pattern recognition to fail. Ex. 1006, 4:34–38. For these situations, Ogasawara’s system would need to modify the product with a “bar code or an alphanumeric label” to definitively identify the product. Ex. 1005, 23:12–16.

Id. at 22–23.

Petitioner also explains (1) that “Bolle solves these issues by segmenting an object from its background in a captured video and matching

image characteristics of the segmented object to image characteristics of objects stored in a database,” *id.* at 23 (citing Ex. 1003 ¶ 106); (2) that “Bolle uses image segmentation technology in conjunction with object recognition techniques and a database that stores reference characteristics of target objects to match characteristics of the object in the captured image with characteristics of a target object,” *id.* (citing Ex. 1006, 4:27–34, 4:39–44, 5:14–18, 5:45–47, 6:1–6, 8:12–38, 16:40–45); and (3) that in Bolle a segmented processed image that can be used to characterize features of the object is then compared to stored reference images and the object is recognized when a match occurs. *Id.* (citing Ex. 1006, 6:1–6).

Petitioner further explains that “[o]nce the object is segmented, Bolle derives visual characteristics—e.g., color, shape, and texture—that are then characterized with histograms.” *Id.* at 24 (citing Ex. 1006, 13:1–14, 16:64–19:38). Petitioner asserts:

Bolle’s ability to use these diverse visual characteristics would have expanded the object recognition capability and accuracy of Ogasawara’s system for products without barcodes or symbols. Ex. 1003, ¶ 107. A POSITA would have recognized that these attributes of Bolle allow the object characteristics, e.g., shape, to be more clearly delineated in the image and thus more precisely determined and matched to the stored reference characteristics to identify the object more accurately. *Id.*, ¶ 108. A POSITA would have thus recognized that Bolle would predictably enhance the performance of the Ogasawara system. *Id.*

Id. Petitioner states: “A POSITA would have thus recognized that combining Ogasawara with Bolle would yield predictable benefits and results because the combined image processing system could more accurately identify objects for purchase during shopping, especially those objects without a barcode or label.” *Id.* at 25 (citing Ex. 1003 ¶ 109).

Petitioner also asserts that “[a] POSITA would have had a reasonable expectation of success combining Bolle’s image segmentation and matching techniques with Ogasawara’s system. *Id.* (citing Ex. 1003 ¶ 111). In that regard, Petitioner explains:

A POSITA 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. *Id.* A POSITA 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. *Id.*

Id. at 25–26 (citing Ex. 1003 ¶ 111).

Notwithstanding Patent Owner’s arguments to the contrary, discussed below, Petitioner has made a sufficient showing that one with ordinary skill in the art would have combined the teachings of Ogasawara and Bolle in the manner proposed by Petitioner, and that the combined teachings meet the limitations of “*deriving at least one characteristic of the video stream; recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream.*”

Patent Owner asserts that Petitioner has failed to make a satisfactory showing that “Ogasawara discloses deriving at least one characteristic of the video stream.” Prelim. Resp. 38. Patent Owner explains that Ogasawara does not explain in any detail how the advanced pattern recognition software operates, beyond that it can recognize an apple, for example, and that it is useful for any merchandise item having a distinct or identifiable shape or other visually identifiable characteristic. *Id.* at 38–39. As Petitioner notes, we need not decide whether Ogasawara itself discloses deriving at least one

characteristic of the video stream, because Petitioner also relies on the combined teachings of Ogasawara and Bolle as teaching the limitation of “*deriving at least one characteristic of the video stream.*” Pet. 33. In the proposed combination of Ogasawara and Bolle, it is Bolle’s disclosure of determining the features of the target object, e.g., color, shape, texture, and density, that is relied on for meeting the limitation of “*deriving at least one characteristic of the video stream.*” *Id.*

Patent Owner asserts that Petitioner has failed to make a satisfactory showing that Ogasawara discloses the “recognize” limitation. Prelim. Resp. 40. However, Petitioner also relies on the combined teachings of Ogasawara and Bolle as teaching the “recognize” limitation, i.e., “*recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream.*” Pet. 40. In that combination, it is Bolle’s disclosure that Petitioner relies upon for the “recognize” limitation. *Id.* Thus, Patent Owner’s argument is misplaced for failing to address the combined teachings of Ogasawara and Bolle.

Patent Owner further asserts: “[E]ven to the extent that Ogasawara’s cursory disclosure to a purported ‘[a]dvanced pattern recognition software’ could be considered to disclose the kinds of image recognition approaches discussed and claimed by the ’004 patent, Petitioner has failed to establish that Ogasawara **enables** that functionality.” Prelim. Resp. 44.

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.”).

Patent Owner further argues that one with ordinary skill in the art would not have had, as Petitioner asserts, a reasonable expectation of success in combining the teachings of Ogasawara and Bolle. Prelim. Resp. 47–48. The argument is similar to the non-enabling reference argument discussed above, except that it is directed to both Ogasawara and Bolle, rather than Ogasawara alone. Specifically, Patent Owner asserts:

Yet, Ogasawara states that its “[a]dvanced pattern recognition software” is “accomplished *within the wireless videophone*, by specialized downloaded software.” Ex. 1005 at 23:21–23 (emphasis added). None of the “hardware and techniques already described in” Bolle explains how a POSITA would have expected Bolle’s image segmentation and matching techniques to work on a wireless videophone available in the late-1990s. Bolle expressly states that the algorithm is performed on “[a] calculating device 140, *typically a computer 140*” or “one or more *digital signal processors*, either stand-alone or installed in a computer,” such as “a Datatranslation DSP board DT 2878 coupled to a Datatranslation DT2871 frame grabber board residing in an IBM ValuePoint computer, or in the IBM 4690 series of POS Cash Registers.” Ex. 1006 at 7:49–62 (emphasis added). Petitioner never explains how a POSITA would expect Bolle’s algorithm which requires specialized hardware like a digital signal processor to work on Ogasawara’s wireless videophone. Indeed, a wireless videophone available in the late-1990s would have significantly less processing power than any of the hardware discussed in Bolle.

Id. The argument is misplaced and unavailing.

Bolle describes the disclosed invention as follows:

A calculating device 40, typically a computer 140, is used to process the image generated by the video input device 120 and digitized (to be compatible with the computer 140) by a frame grabber 142.

The processing is performed by an algorithm 200. Other calculating devices 140 include: personal computers, and work stations. The calculating device 140 can also be *one or more digital signal processors*, either stand-alone or installed in a computer. It can also be any special hardware capable of implementing the algorithm 200. A preferred embodiment is a Datatranslation DSP board DT 2878 coupled to a Datatranslation DT 2871 frame grabber board residing in an IBM ValuePoint computer, or in the IBM 4690 series of POS Cash Registers.

Ex. 1006, 7:49–62 (emphasis added). Ogasawara’s videophone 218 includes microprocessor 238. Ex. 1005, Fig. 10. Patent Owner does not explain why, in a system combining the teachings of Ogasawara and Bolle as proposed by Petitioner, Ogasawara’s microprocessor 238 could not have been implemented by one with ordinary skill in the art by a digital signal processor as Bolle describes, such as the digital signal processor component of the IBM computer or IBM point-of-sale cash register. In proving obviousness, it is not necessary to show that one of ordinary skill would place an entire IBM computer or IBM point-of-sale register within Ogasawara’s videophone. “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Further, Bolle does not limit its processing unit to specific components in an IBM computer or IBM point-of-sale cash register.

Bolle describes that its algorithm can be performed by one or more digital signal processors. Ex. 1006, 7:55–57. We understand Petitioner’s rationale, discussed above, to be adding the image segmenting and recognizing functionalities of Bolle to Ogasawara’s digital signal processor 238 would have been obvious. Implicit in Petitioner’s proposed combination is the understanding of including in Ogasawara’s wireless videophone a processor of sufficient processing power to carry out Bolle’s algorithm. Patent Owner’s argument in its Preliminary Sur-Reply (Paper 8, 5) that Bolle’s teaching of sending the captured image to a separate calculating device or computer 140 is “irrelevant to Ogasawara” is misplaced and unpersuasive. The issue before us is what kind of digital signal processor to use as Ogasawara’s microprocessor 238. Bolle is relevant in that regard.

Although Dr. Bajaj testifies that the state of the art at the time of filing of the ’004 patent was not advanced enough for advanced pattern recognition software to run on wireless videophones (Ex. 2001 ¶ 41), Dr. Bajaj does not provide sufficient reasoning or explanation to support this opinion. One with ordinary skill in the art (possessing “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”) would not have been limited to wireless videophones commercially available in the late-1990s, but could have used a digital signal processor of sufficient processing power for executing Bolle’s algorithm in a wireless videophone. The record contains no evidence that such a digital signal processor would have been so

large that it could not physically have been included within a mobile videophone.

Finally, Patent Owner argues that the Petition should be rejected because it is based on Petitioner's flawed claim construction which has been rejected by the district court in related litigation involving the '004 patent. Prelim. Resp. 46. By agreeing with Petitioner that "matching" is required and that recognizing requires querying a database, the district court has adopted a construction that is essentially the same as Petitioner's proposed construction, as we have as well in adopting the district court's construction. Ex. 2006, 18–19. Petitioner's arguments and evidence are equally applicable to the claim construction determined by the district court which we have adopted.⁸ In that regard, we note further that Patent Owner states: "Patent Owner does not object to the Board adopting the District Court's construction of the 'recognizing' limitation." Prelim. Resp. 35.

d. "providing an indication upon recognizing the at least one object as the target object; and"

Petitioner asserts that Ogasawara discloses the recited providing step. Pet. 41. Specifically, Petitioner explains:

In Ogasawara, after merchandise is identified, "[a]n 'item selection complete' response is [] 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." Ex. 1005, 21:26–34. The receipt of the "item selection complete" response by the customer's wireless video phone is the same type of indication identified by the '004 patent (i.e., "sending

⁸ Patent Owner articulates no difference between the claimed term "recognizing" and Petitioner's use of the word "identifying." On this record, when an item has been identified, it is recognized.

information” to the mobile device or “displaying information” on the mobile device). Ex. 1001, 25:5–11; Ex. 1003, ¶ 132.

Pet. 41–42. Petitioner’s assertions are supported by the cited evidence. Patent Owner does not present arguments to the contrary. We are sufficiently persuaded that Ogasawara discloses a step of “*providing an indication upon recognizing the at least one object as the target object.*”

e. “*presenting to a user, via an address, content information associated with the target object*”

Petitioner asserts that Ogasawara discloses the recited presenting step.

Pet. 42. Specifically, Petitioner explains:

Ogasawara’s electronic shopping system presents “[a]n ‘item selection complete’ response [] issued by the server” to “the customer’s wireless videophone through its telephone function and the response [which may include ‘item price, and the like’] is displayed to the customer on the system’s integral graphics display screen.” Ex. 1005, 21:26–30, *see also id.*, 23:30–32 (“Merchandise information is then returned to the customer for display by the wireless videophone.”), 7:34–41 (“the information is preferably shown upon the display[.]”).

The “item selection complete” response is transmitted over a “commercial telephone network” via “a cellular telephone network” by any desired means. *Id.*, 4:66–5:17, 17:26–35, Figs. 1, 10. In view of this disclosure, a POSITA would have understood that transmission of data between server 210 and wireless videophone 218 over such networks would require each network component (e.g., server, mobile device, etc.) to have a network address and the information presented to the user on their wireless videophone 218 would originate from the network address of the server 210. Ex. 1003, ¶ 135. Furthermore, a POSITA would have understood that the item price “issued by the server” and presented to the user on their wireless videophone 218 would have originated by way of server 210’s network address. *Id.*

Pet. 42–43. Petitioner’s assertions are supported by the cited evidence.

Patent Owner does not present arguments to the contrary. We are

sufficiently persuaded that Ogasawara discloses a step of “*presenting to a user, via an address, content information associated with the target object.*”

f. Summary for Claim 1

For the reasons given, we determine that each element of claim 1 is taught by the combined teachings of Ogasawara and Bolle, and that Petitioner has demonstrated sufficiently a motivation to combine their teachings with a reasonable expectation of success. Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to claim 1 as obvious in light of Ogasawara and Bolle.

2. Claims 2, 3, 6, and 18

Claims 2, 3, 6, and 18 depend, directly or indirectly, from claim 1. Petitioner provides an element-by-element analysis of each of these dependent claims with respect to the combined teachings of Ogasawara and Bolle. Pet. 44–48.

Patent Owner does not respond further to Petitioner’s analysis of these dependent claims. At this stage, we are sufficiently persuaded by Petitioner’s analysis and determine that Petitioner has demonstrated reasonable likelihood of prevailing on this challenge with respect to each of dependent claims 2, 3, 6, and 18.

C. Alleged Obviousness of Claims 1–3, 6, and 18 over Ogasawara, Bolle, and Rhoads

These challenges are based on two hypothetical claim constructions. Pet. 54–56. . The first relates to the meaning of this limitation which Petitioner refers to as “limitation 1[e]”: “presenting to a user, via an address, content information associated with the target object.” Pet. 54. For this hypothetical, Petitioner assumes that “presenting to a user, via an address” requires presenting a network address (e.g., a URL) to the display of a user’s

phone. *Id.* The second relates to the meaning of the “recognize” limitation which Petitioner refers to as “limitation 1[c]: “recognizing the at least one object in the scene as a target object based at least in part on the at least one characteristic of the video stream.” *Id.* at 55. For this hypothetical, Petitioner assumes that the “recognize” limitation requires recognizing an object based at least in part on an indication of how steady is the depicted image of the object in the video stream and/or an alignment of the object in the video stream. *Id.*

With regard to limitation 1[e], Petitioner asserts:

To the extent that the phrase “presenting to a user, via an address” requires presenting a network address (e.g., a URL) to the display of a user’s phone, this limitation is taught by the combination of Ogasawara and Bolle in view of Rhoads. Ex. 1003, ¶¶ 156–157. As discussed (§V.B.1), Rhoads’s system uses a “remote database [to] identif[y] a URL corresponding to the identifier, and provides the URL back to the user’s computer—permitting a browser on the user’s computer to display the URL-identified web page.” Ex. 1022, 48:37–47. Rhoads discloses that the URL-identified web page can provide additional information or services related to the recognized object. *Id.*, 48:43–53, 53:1–5.

Pet. 54–55.

However, neither Petitioner nor Patent Owner affirmatively urges such a construction. The district court in related litigation also did not construe limitation 1[e] that way, and we have no reason to do so.

Similarly, with regard to the “recognize” limitation, neither Petitioner nor Patent Owner affirmatively urges the construction assumed by Petitioner, one that requires basing recognition on an indication of how steady is a depicted image in the video stream and/or alignment of the object in the video stream. The district court in related litigation did not construe

limitation 1[e] that way, and we have no reason to do so. Indeed, Patent Owner even states: “Patent Owner does not object to the Board adopting the District Court’s construction of the ‘recognizing’ limitation.” Prelim. Resp. 35.

Accordingly, because we have not adopted either of Petitioner’s hypothetical constructions, we do not reach the merits of this alleged ground of unpatentability based on Ogasawara, Bolle, and Rhoads. In light of Supreme Court precedent, however, we institute trial on this ground as well. *See SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

V. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at least one of the challenged claims in the Petition. We therefore institute trial as to all challenged claims on all grounds asserted in the Petition. We also decline to exercise our discretion to deny institution under 35 U.S.C. § 314(a).

VI. ORDER

Upon consideration of the record before us, it is:

ORDERED that *inter partes* review of claims 1–3, 6, and 18 of the ’004 patent is instituted on all grounds asserted in the Petition;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

IPR2021-01332
Patent 9,324,004 B2

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