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Paper 9
Date: November 7, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

MAXELL, LTD.,
Patent Owner.

IPR2024-00867
Patent 10,176,848 B2, C1

Before TERRENCE W. McMILLIN, KEVIN C. TROCK, and JASON W. MELVIN, *Administrative Patent Judges.*

TROCK, *Administrative Patent Judge*.

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

I. INTRODUCTION

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (collectively, "Petitioner") filed a Petition, Paper 3 ("Pet." or "Petition"), to institute an *inter partes* review of claims 11, 12, 16, 17, 19, 20, and 84 (the "challenged claims") of U.S. Patent No. 10,176,848 B2 (Ex. 1001), C1 (*Ex Parte* Reexamination Certificate, Ex. 1002) (collectively, "the '848 patent"). Maxell, Ltd. ("Patent Owner") filed a Preliminary Response, Paper 7 ("Prelim. Resp.").

An *inter partes* review may not be instituted "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). Upon consideration of the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review.

II. BACKGROUND

A. Real Party in Interest

Petitioner identifies Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. as the real parties in interest. Pet. 58. Patent Owner identifies itself as the real party in interest. Paper 5, 1.

B. Related Proceedings

According to the parties, the '848 patent is the subject of the following action: *Maxell, Ltd. v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.*, No. 5:23-cv-00092-RWS (E.D. Tex.). Pet. 59; Paper 5, 1.

C. The '848 Patent (Ex. 1001)

The '848 patent relates to "a recording and reproducing apparatus and a recording and reproducing method, suitable for application to, e.g., a video camera." Ex. 1001, 1:15–17. By way of background, the '848 patent describes that a video camera "can set a plurality of chapters in one scene, and can cue each chapter," wherein a "scene means a series of images recorded during a period from when a user depresses a record button to start photographing to when the user depresses again the record button to stop photographing" and a "chapter means a delimiter of images in one scene." *Id.* at 1:29–34, 1:36–37. The '848 patent notes that with the large capacity of a recording medium of a recent video camera, scenes photographed for a long time duration or a plurality of times can be stored, and "[i]t is therefore difficult for a user to quickly find a target scene from a number of scenes recorded in the recording medium." *Id.* at 1:55–61. The '848 patent states that its invention "provides a recording and reproducing apparatus and a recording and reproducing method allowing a user to rapidly and easily find a target chapter or scene." *Id.* at 2:18–22.

The '848 patent describes a recording and reproducing apparatus that "can selectively reproduce a particular chapter in accordance with user settings, such as a chapter on which a [very important person (VIP)] appears frequently." Ex. 1001, 2:37–40. The apparatus comprises:

> a recording and reproducing unit for recording and reproducing image information on the scene obtained through photographing, relative to a predetermined first recording medium; a face recognizing execution unit for executing a face recognizing process for a photographed image based on the image information; an importance level setting unit for setting an importance level of each chapter in accordance with a result of the face recognizing process for a very important person

> (VIP) set by a user; and a control unit for controlling the recording and reproducing unit so as to selectively reproduce each chapter having a relevant importance level, among importance levels of respective chapters.

Id. at 2:23–36.

According to the '848 patent, during photographing with a video camera, encoded image information and scene management information, which includes chapter management information and face recognizing management information, is recorded. Ex. 1001, 5:14–20. The '848 patent describes the chapter management information as including "information on a position, length, importance level, summary and the like of a start frame of each chapter." *Id.* at 5:20–23. Figure 2 of the '848 patent is reproduced below.

FIG. 2

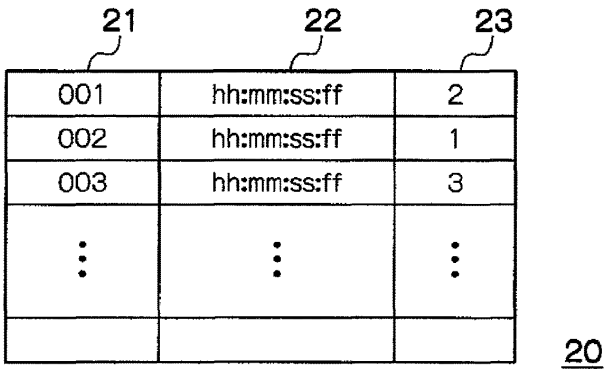

Figure 2, above, depicts an example of the chapter management information 20, which includes "chapter ID information 21, start frame position information 22 and chapter importance level information 23, respectively of each chapter set in a scene." *Id.* at 5:28–33.

The '848 patent describes the face recognizing management information as including "information on a position of a frame on which a face recognized by the face recognizing execution unit appears during

photographing, an expression and size of the face on the frame, and the like." Ex. 1001, 5:23–27. Figure 3 of the '848 patent is reproduced below.

FIG. 3

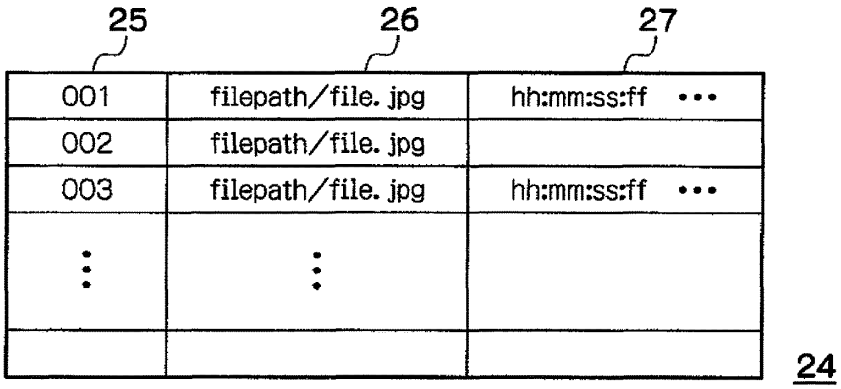

Figure 3, above, depicts an example of the face recognizing management information 24, which includes "face ID information 25 for each face recognized in the corresponding scene, path/file name information 26 and frame position information 27." *Id.* at 5:47–52. The frame position information 27 "is information representative of a frame position (hour, minute, second and frame number) where a corresponding face is recognized" and "includes all frame positions on which a corresponding face appears." *Id.* at 5:65–6:2.

The '848 patent describes a "photographed image recording process" by setting the face recognizing function "valid." Ex. 1001, 6:24–41; *see also id.* at FIG. 5. According to the '848 patent, "if a user forms a VIP list registering VIP's before photographing, the face recognizing process may be executed by template matching using the VIP list." *Id.* at 6:51–54. For example, "[f]aces of objects having a high appearance frequency such as

family members may be registered beforehand in the video camera . . . as a VIP list." *Id.* at 7:63–65.

The '848 patent also describes a method of determining an importance level of each chapter in one scene according to the results of the face recognizing process. Ex. 1001, 7:23–26. The '848 patent explains that the number of appearance frequencies of the VIP is counted for each chapter of the object scene. *Id.* at 8:26–29; *see also id.* at FIG. 8. According to the '848 patent, "the highest chapter importance level of '1' is set to the chapter on which the VIP appears most frequently, and the lowest chapter importance level of '5' is set to the chapter on which the VIP appears least frequently." *Id.* at 8:50–53.

The '848 patent also describes an object scene reproducing method based upon the chapter importance level of each chapter. Ex. 1001, 8:66–9:1. Figure 9 of the '848 patent is reproduced below.

FIG. 9

CHAPTER ID	CHAPTER IMPORTANCE LEVEL
001	5
002	1
003	5
004	3
005	1
006	5
007	5
008	5
009	3

Figure 9, above, depicts "an example of the chapter structure of an object scene and a chapter importance level set to each chapter." *Id.* at 9:10–12. The '848 patent describes a "standard reproducing mode," wherein "all

chapters are sequentially reproduced in an order of smaller chapter ID, irrespective of the chapter importance level set to each chapter." *Id.* at 9:20–28. The '848 patent also describes an "express reproducing mode," wherein "only the chapters having the chapter importance level '3' or smaller (only the chapters having the importance levels '1' to '3') are reproduced." *Id.* at 9:29–45. The '848 patent further describes a "superexpress reproducing mode," wherein "only the chapters having the chapter importance level '1' are reproduced." *Id.* at 9:46–54.

D. Challenged Claims

Petitioner challenges 11, 12, 16, 17, 19, 20, and 84 of the '848 patent. Pet. 1. Claims 11 and 12 (Ex. 1001, 16:23–49) depend directly or indirectly from independent claim 8 (*id.* at 15:51–16:9), which was corrected after issuance (Ex. 1003, 21) and canceled in reexamination (Ex. 1002, 1:18). Claims 16 and 17 (Ex. 1001, 17:34–18:3) depend directly or indirectly from independent claim 13 (*id.* at 16:50–17:17), which was canceled in reexamination (Ex. 1002, 1:18). Claims 19 and 20 (Ex. 1001, 18:30–57) depend from independent claim 18 (*id.* at 18:4–29), which was canceled in reexamination (Ex. 1002, 1:18). Claim 84 (Ex. 1002, 8:37–10:21) is independent, and was added in reexamination (*id.* at 1:19–20) and corrected (Ex. 1004, 10–11). Claim 11 (incorporating the limitations of canceled claim 8) is generally illustrative and reproduced below.

[8pre][1] A recording and reproducing apparatus for recording and reproducing image information, comprising:

[8a] a processor; and

[1] Alpha-numerical designation adopted by Petitioner. *See* Pet. vii–xiii.

[8b] a memory coupled to the processor and storing instructions that, when executed by the processor, cause the processor to:

[8c] capture a photograph and generate image information of the photograph;

[8d] record the image information in a recording medium;

[8e] execute a face-recognizing process on the image information to recognize a face;

[8f] reproduce the recorded image information from the recording medium;

[8g] register a person in the image information as a specific person in a mode selected from a first setting mode and a second setting mode, wherein, when the first setting mode is selected, a person with a face is obtained by newly photographing the person in a photographing mode and thereafter registered as the specific person, and, [8h] when the second setting mode is selected, a person with a face in the image information is selected from a plurality of faces in the image information recorded in the recording medium and thereafter registered as the specific person; and

[8i] selectively reproduce the recorded image information which includes the registered specific person.

Ex. 1001, 15:51–16:9; Ex. 1003, 12 (Certificate of Correction of Claim 8).

[11pre] The recording and reproducing apparatus according to claim 8,

[11a] wherein the memory further stores instructions that, when executed by the processor, cause the processor to: control the reproduction of the image information in a reproducing mode set from one of a first reproducing mode and a second reproducing mode,

[11b] wherein a reproducing time required for reproducing the image information under the first reproducing mode is shorter than a reproducing time required for reproducing the image information under the second reproducing

> mode, and [11c] the image information reproduced under the second mode includes the image information reproduced under the first reproducing mode and other of the image information not reproduced under the first reproducing mode.

Ex. 1001, 16:23–37.

E. Evidence

Petitioner relies upon the following evidence:

(1) International Publication No. WO 2007/060980 A1, published May 31, 2007 ("Nozaki") (Ex. 1006);

(2) U.S. Patent No. 9,665,597 B2, filed March 22, 2007, issued May 30, 2017 ("Haitani") (Ex. 1007);

(3) U.S. Patent Application Publication No. US 2004/0095376 A1, published May 20, 2004 ("Graham") (Ex. 1008);

(4) Korean Unexamined Patent Application Publication No. 10-2007-0017068 A, published February 8, 2007 ("Kim") (Ex. 1009); and

(5) Declaration of Dr. Benjamin B. Bederson (Ex. 1005).

F. Asserted Grounds of Unpatentability

Claims Challenged	35 U.S.C. §	References
11, 12, 16, 17, 19, 20	103(a)[2]	Nozaki, Haitani
84	103(a)	Nozaki, Haitani, Graham
84	103(a)	Nozaki, Haitani, Kim

Pet. 1.

[2] According to Petitioner, the '867 patent "claims priority to a Japanese application filed on May 19, 2008," which is before the March 16, 2013,

III. ANALYSIS

A. 35 U.S.C § 314(a)

Patent Owner contends that "the Petition should be denied pursuant to 35 U.S.C. § 314(a) and the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) ("*Fintiv*") . . . where, as here, the merits of the challenge are neither compelling nor meritorious." Prelim. Resp. 3. Patent Owner argues that "[e]very factor considered in relation to efficiency, fairness, and the merits supports denial." *Id.* at 12. Patent Owner provides arguments regarding the factors set forth in *Fintiv* in relation to parallel district court litigation, *Maxell, Ltd. v. Samsung Electronics Co. et al.*, Case No. 5:23-cv-00092 (E.D. Tex.) (the "District Court Litigation"). *Id.* at 12–18.

The Board's precedential decision in *Fintiv* identifies a non-exclusive list of factors the Board considers when addressing whether a related, parallel district court action provides a basis for discretionary denial under 35 U.S.C. § 314(a). 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

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effective date of the § 103 provisions in the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29. Pet. 2. Patent Owner does not appear to dispute this. Accordingly, we cite to pre-AIA § 103(a).

> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

Fintiv at 5–6.

On June 21, 2022, the Director of the United States Patent and Trademark Office issued an *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* ("Guidance Memo")[3] to clarify "the [Board's] current application of *Fintiv* to discretionary institutions where there is parallel litigation" and to "confirm[] that the precedential import of *Fintiv* is limited to the facts of that case." Guidance Memo 2. In particular, the Memorandum states that the Board

> will not deny institution of an IPR or PGR under *Fintiv* (i) when a petition presents compelling evidence of unpatentability; (ii) when a request for denial under *Fintiv* is based on a parallel ITC proceeding; **or (iii) where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.**

Id. at 9 (emphasis added).

On September 12, 2024, with the Board's authorization (Ex. 3001), Petitioner filed such a stipulation. Paper 8. Petitioner's stipulation reads:

> In accordance with the Board's precedential decision in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18-19 (PTAB Dec. 1, 2020), Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (Petitioners) stipulate that if the Board institutes *inter partes* review in this proceeding, IPR2024-00867, then Petitioners will not pursue in the parallel district court proceeding, *Maxell Ltd. v. Samsung*

[3] *Available at: https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf*

> *Electronics Co., Ltd. and Samsung Electronics America, Inc.*, Case No. 5:23-cv-00092-RWS, the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.

Paper 8.

Given that the language of Petitioner's stipulation substantively tracks the stipulation language set out in the Guidance Memo, we decline to exercise discretion under 35 U.S.C. § 314(a) to deny institution.

B. 35 U.S.C § 325(d)

1. Legal Standard

Section 325 of Title 35 of the United States Code deals with the relation of proceedings before the Board with other proceedings in the Office. Section 325(d) provides, in part, that "[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31[4], the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office."

In evaluating the exercise of discretion to deny institution under Section 325(d), the Board uses the following two-part framework: (1) determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB

[4] Chapter 31 (35 U.S.C. §§ 311–319) relates to *inter partes* review.

Feb. 13, 2020) (precedential) ("*Advanced Bionics*"). Only if the same or substantially the same art or arguments were previously presented to the Office do we consider whether petitioner has demonstrated a material error by the Office.

Within this two-part framework, the Board considers a number of non-exclusive factors in evaluating whether to exercise its discretion under § 325(d). *See Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first para.) ("*Becton, Dickinson*"); *see also Advanced Bionics,* Paper 6 at 9–11.

2. The Parties' Contentions

Petitioner contends that "none of the challenges in this Petition are substantially the same as those considered during prosecution or reexamination, and none of the art cited herein was expressly considered during prosecution or reexamination of the '848 patent." Pet. 58. Petitioner also contends that

> to the extent that the challenges are found to be based on prior art that is the same as or cumulative to prior art considered by the examiner during prosecution, the examiner has made a clear error in allowing the claims over such prior art. This is at least because the challenges in this Petition satisfy the compelling merits standard, and allowing the claims over such prior art is therefore clear error.

Id.

Patent Owner contends that "[t]he Petition should be denied pursuant to 35 U.S.C. § 325(d) because the petition argues the 'same or substantially the same art previously [] presented to the Office' and fails to demonstrate 'that the Office erred in a manner material to the patentability of the challenged claims.'" Prelim. Resp. 3–4 (quoting *Advanced Bionics, LLC v.*

MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8 (PTAB Feb. 3, 2020) (precedential)).

In particular, Patent Owner contends that

> the IPR-asserted art is "substantially the same" because two of the references—Nozaki and Haitani—were previously presented to the Office. Nozaki was considered during prosecution of the '848 Patent and the reexamination of the '848 Patent. *See* Ex. 1003 at 533; Ex. 1004 at 165-190. Haitani was considered during the reexamination of the '848 Patent. Ex. 1004 at 165-190. The remaining tertiary references—Graham and Kim—are cumulative of references previously presented to the Office during reexamination of the '848 Patent as well as during prosecution of the '848 Patent, and are each used identically and narrowly for Grounds 2 and 3 directed at one challenged claim. The first part of the two-part framework from *Advanced Bionics* is met here.

Prelim. Resp. 4.

Patent Owner also contends that Nozaki is cumulative to Gallagher (Ex. 2009), which Patent Owner asserts "was also considered during the reexamination of the '848 Patent." Prelim. Resp. 7 (citing Ex. 1004 at 153–159, 366–398). Patent Owner argues that "comparing the disclosure of Nozaki and Gallagher with respect to Claim element 8[g] illustrates the cumulative nature of Nozaki relative to Gallagher," and that "Petitioner alleges that both Nozaki and Gallagher disclose claim element 8[g]." Prelim. Resp. 7 (citing Pet. 12–16; Ex. 2007, 41–46).

Patent Owner further contends that Haitani is "cumulative to Gallagher (Ex. 2009) and Nakashima (Ex. 2010)," and "Nakashima was also considered during prosecution and the reexamination of the '848 Patent." Prelim. Resp. 8 (citing Ex. 1003, 421–424; Ex. 1004, 153–156, 367–371). Patent Owner argues that the cumulative nature of Haitani, Gallagher, and Nakashima is demonstrated by Petitioner's reliance on "figures from

Haitani, Gallagher, and Nakashima in its invalidity contentions to allege disclosure of face detection relative to claim element 8[g]." Prelim. Resp. 9 (citing Pet. 12–16; Ex. 2007, 41–46; Ex. 2008, 52).

With respect to Graham and Kim, Patent Owner contends that "Petitioner's sole use of Graham and Kim for claim element 84[h] is cumulative to Gallagher," and that "Petitioner's use of Gallagher for claim element 84[h] in its invalidity contentions in the District Court Litigation confirms this." Prelim. Resp. 10–11 (citing Pet. 47–51, 53–54; Ex. 2007, 164–166).

3. Discussion

We disagree with Patent Owner's assertion that "Nozaki was considered during . . . reexamination of the '848 Patent." Prelim. Resp 4 (citing Ex. 1004, 165–190). To support this assertion, Patent Owner cites to 25 pages of the '848 reexamination file (*see* Prelim. Resp. 4 (citing Ex. 1004, 165–190), arguing that "the grounds presented by Petitioner are duplicative of the art and arguments considered by the Examiner during . . . reexamination of the '848 patent" (Prelim. Resp. 6), and concluding that "many of Petitioner's arguments are simply a rehash of the reexamination request that was thoroughly considered by the Office during reexamination" (*id.* at 12). Patent Owner, however, provides no specific examples, comparisons, or analysis between the evidence and arguments concerning Nozaki presented in the Petition with the evidence and arguments concerning Nozaki ostensibly considered during the '848 patent reexamination.

Indeed, the only mention of "Nozaki" we can discern in the 25 pages of the '848 reexamination file cited by Patent Owner are two listings of "Nozaki" patents appearing on pages 171 and 186 of the reexamination file.

See Ex. 1004, 171, 186 (listing Nozaki U.S. Patent 8,379,108 ("Nozaki '108"); Nozaki U.S. Patent 8,538,252 ("Nozaki '252")). These two "Nozaki" patents, however, are not the same Nozaki reference asserted by the Petitioner as prior art in the Petition. *See* Pet. 5 (citing Ex. 1006, WO 2007/060980 ("Nozaki '980")). The Nozaki reference asserted by Petitioner in the Petition is titled, "Electronic Camera and Image Processing Device," is directed to an "electronic camera compris[ing] an image sensor, an image processing section, a face detecting section, a controlling section, a face image creating section, or a face recognizing data creating section, and a recording section," contains 19 figures and has 57 claims. *See* Ex. 1006, code (57) Abstr., ¶ 41, pgs. 52–60.

In contrast, Nozaki '108 listed in the '848 reexamination IDS was issued February 19, 2013, has a PCT Publication Number WO 2007/113937, is titled "Electronic Camera That Detects and Extracts Faces," is directed to "an electronic camera capable of easily generating face recognizing data," and has 7 figures and 7 claims. *See* Ex. 3002, codes (45), (54), (87), col. 1:49–51, cols. 2:64–3:10, cols. 12:60–14:28. Nozaki '252, also listed in the '848 reexamination IDS, was issued September 17, 2013, is a continuation of PCT Application Number PCT/JP2007/000921, is titled "Camera," is directed to "a camera which performs focus control based on the result of face detection," and has 10 figures and 14 claims. *See* Ex. 3003, codes (45), (54), (63), col. 1:15–17, cols. 3:49–4:2, cols. 14:50–18:19. Patent Owner makes no effort to compare or contrast the teachings of Nozaki '980 (Ex. 1006) asserted as prior art by Petitioner in the Petition with the teachings of Nozaki '108 (Ex. 3002) or Nozaki '252 (Ex. 3003) listed on the '848 reexamination IDS.

Moreover, the '848 reexamination file indicates that the Examiner substantively relied upon the Gallagher (U.S. Pat. App. No. 2007/0098303) and Nakashima (U.S. Pat. App. No. 2007/0019083) references, not the Nozaki '108 or '252 references, as the basis for rejecting claims 8, 10–13, and 15-20 during reexamination of the '848 patent. *See* Ex. 1004, 152–163. Patent Owner does not point to any evidence demonstrating that the Office meaningfully addressed Nozaki '980 during reexamination of the '848 patent.

Patent Owner also asserts that "the Nozaki publication *was considered* during prosecution" of the '848 patent, but concedes that "the Nozaki publication did not form a basis for rejection during prosecution." Prelim. Resp. 6. Patent Owner points to a listing of a Nozaki patent document (U.S. Pat. Pub. 2009/0135269 ("Nozaki '269")) on an Information Disclosure Statement in the '848 prosecution history to support its assertion. Prelim. Resp. 6 (citing Ex. 1003, 452). However, Nozaki '269 is listed on the disclosure statement among approximately 50 other references and Patent Owner does not point to any evidence to indicating that the Office meaningfully addressed this reference during prosecution of the '848 patent, other than a blanket statement printed on the bottom of the IDS that "all references considered except where lined through." *See* Ex. 1003, 452. This statement, however, does not allow us to evaluate the extent to which the Examiner may have substantively considered Nozaki '269, or any other of the approximately 50 references listed on the IDS for that matter, during prosecution of the '848 patent. Given this level of uncertainty in the record, and the lack of evidence showing that Nozaki '269 was meaningfully addressed by the Office, we are reluctant to exercise our discretion to deny institution based on this record.

Patent Owner also argues that Petitioner's asserted art, Nozaki, Haitani, Graham, and Kim, are cumulative to other references considered during reexamination of the '848 patent, namely Gallagher and Nakashima. Prelim. Resp. 7–11. Patent Owner argues that Petitioner's invalidity contentions in the District Court Litigation demonstrate that Nozaki is cumulative to Gallagher because "Petitioner alleges that both Nozaki and Gallagher disclose element 8[g]." *Id.* at 7. Patent Owner also argues that Haitani is cumulative to Gallagher and Nakashima because "Petitioner relies on each of these figures from Haitani, Gallagher, and Nakashima in its invalidity contentions to allege disclosure of face detection relative to claim element 8[g]." *Id.* at 9. Finally, Patent Owner argues that "Petitioner's sole use of Graham and Kim for claim element 84[h] is cumulative to Gallagher," and "Petitioner's use of Gallagher for claim element 84[h] in its invalidity contentions in the District Court Litigation confirms this." *Id.* at 11.

We disagree with Patent Owner that the asserted prior art in the Petition is cumulative to Gallagher and Nakashima, which were considered during reexamination of the '848 patent. Here, Patent Owner argues that Petitioner's invalidity contentions in the District Court Litigation demonstrate that Nozaki is cumulative to Gallagher because "Petitioner alleges that both Nozaki and Gallagher disclose element 8[g]." Prelim. Resp. 7. But here, Petitioner relies on the *combined* teachings of Nozaki and Haitani to teach claim 8, in particular limitation 8[i], which recites "*selectively reproduce the recorded image information which includes the registered specific person*." *See* Pet. 21–26. In the District Court Litigation, Petitioner argued in its invalidity contentions that Gallagher taught all the limitations of claim 8, including limitation 8[i]. *See* Ex. 2007, 56–66.

Because the PTAB and district courts use different legal standards, it is possible for each tribunal to reach a different result even when considering the same evidence. Merely because a party argues in district court that a particular reference teaches all the limitations of an asserted patent claim doesn't make it so. Accused infringers in district court have compelling reasons to pursue all permissible legal theories to defend their interests, including asserting arguments that certain references render asserted patent claims invalid. A party may argue in district court that one reference teaches all the limitations of an asserted claim, while arguing at the PTAB that a different reference, or a combination of references in this case, teaches those same limitations. Merely because a party asserts these different arguments in different tribunals that use different evidentiary standards doesn't make the references cumulative as Patent Owner seems to argue here.

With respect to Haitani, Patent Owner asserts that Petitioner relies on "figures from Haitani, Gallagher, and Nakashima in its [district court] invalidity contentions to allege disclosure of face detection relative to claim element 8[g]." Prelim. Resp. 9. However, for Ground 1, Petitioner relies solely on Nozaki in the Petition to teach limitation 8[g], not Haitani. *See* Pet. 12–16.

With respect to Graham and Kim, Patent Owner argues that "Petitioner's sole use of Graham and Kim for claim element 84[h] is cumulative to Gallagher," and "Petitioner's use of Gallagher for claim element 84[h] in its invalidity contentions in the District Court Litigation confirms this." Prelim. Resp. 11. Here, however, Petitioner relies on the combined teachings of Nozaki *and* Graham (Ground 2) or Nozaki *and* Kim (Ground 3) to teach limitations 84[h.i] and 84[h.ii], not merely Graham or Kim alone. *See* Pet. 47–51, 53–57. Patent Owner's argument therefore

ignores the contributed teachings of Nozaki that Petitioner relies upon to meet limitations 84[h.i] and 84[h.ii] in the Petition. *See* Ex. 2007, 164–166.

4. Conclusion

Based upon our consideration of the evidence and arguments presented on this record, we disagree with Patent Owner that Nozaki, Haitani, Graham, and Kim were previously considered, or are substantially the same as, or cumulative to, art or arguments previously presented to the Office. There is no verifiable evidence in the record that Nozaki, Haitani, Graham, or Kim, were ever meaningfully addressed by the Office during prosecution or reexamination of the '848 patent. For the reasons discussed, the first part of the *Advanced Bionics* framework has not been satisfied, and we therefore decline to exercise our discretion under 35 U.S.C. § 325(d) to reject the Petition.

C. Level of Ordinary Skill

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner describes a person of ordinary skill in the art as a person having "a Bachelors' degree in electrical or computer engineering or a comparable field of study, with at least two to three years of experience in the field of image processing." Pet. 4 (citing Ex. 1005 ¶ 35). Petitioner further asserts that "[a]dditional education could substitute for professional experience, and significant experience in the field could substitute for formal

education." *Id.* (citing Ex. 1005 ¶ 35). Patent Owner does not contest Petitioner's description of a person of ordinary skill in the art at this stage of the proceeding. Prelim. Resp. 22.

Petitioner's description of a person of ordinary skill appears to be consistent with the subject matter of the '848 patent. This is supported by the testimony of Petitioner's declarant, Dr. Bederson. *See* Ex. 1005 ¶ 35. We, therefore, adopt Petitioner's assessment of a person of ordinary skill for purposes of this Decision.

D. Claim Construction

For this *inter partes* review, the Board applies the same claim construction standard as that applied in federal courts. *See* 37 C.F.R. § 42.100(b) (2023). Under this standard, 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 v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citations omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Because the meaning of a claim term as understood by persons of skill in the art may not be immediately apparent, we may look to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*., 381 F.3d 1111, 1116 (Fed. Cir. 2004). These sources may include extrinsic evidence concerning relevant scientific

principles, the meaning of technical terms, and the state of the art. However, such extrinsic evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004).

Only those terms that are in controversy need 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); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Here, Petitioner contends that "all claim terms in the Challenged Claims should be construed according to their plain and ordinary meaning to a [person of ordinary skill in the art]." Pet. 5.

Patent Owner states that "[g]iven the multiple reasons why the Petition should not be instituted, including 35 U.S.C. § 325(d) and 35 U.S.C. § 314, and to minimize the disputes that the Board needs to address at this preliminary stage, for the purposes of this Preliminary Response only, Patent Owner simply applies Petitioner's own constructions to show how the Petitioner has not met its burden under 37 CFR § 42.104(b)(4)." Prelim. Resp. 25.

For purposes of this Decision and based on this preliminary record, we determine that no claim term requires express construction at this stage of the proceeding.

E. Patentability Challenges

Petitioner presents three grounds challenging the patentability of particular claims of the '848 patent under 35 U.S.C. § 103. Petitioner

challenges (1) claims 11, 12, 16, 17, 19, and 20 based on the combined teachings of Nozaki and Haitani; (2) claim 84 based on the combined teachings of Nozaki, Haitani, and Graham; and (3) claim 84 based on the combined teachings of Nozaki, Haitani, and Kim. Pet. 1.

1. Principles of Law

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) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham*, 383 U.S. at 17–18. At this stage, neither party has presented evidence on the fourth *Graham* factor.

The Supreme Court has made clear that we apply "an expansive and flexible approach" to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in

the normal course of research and development to yield the claimed invention. *Id.*

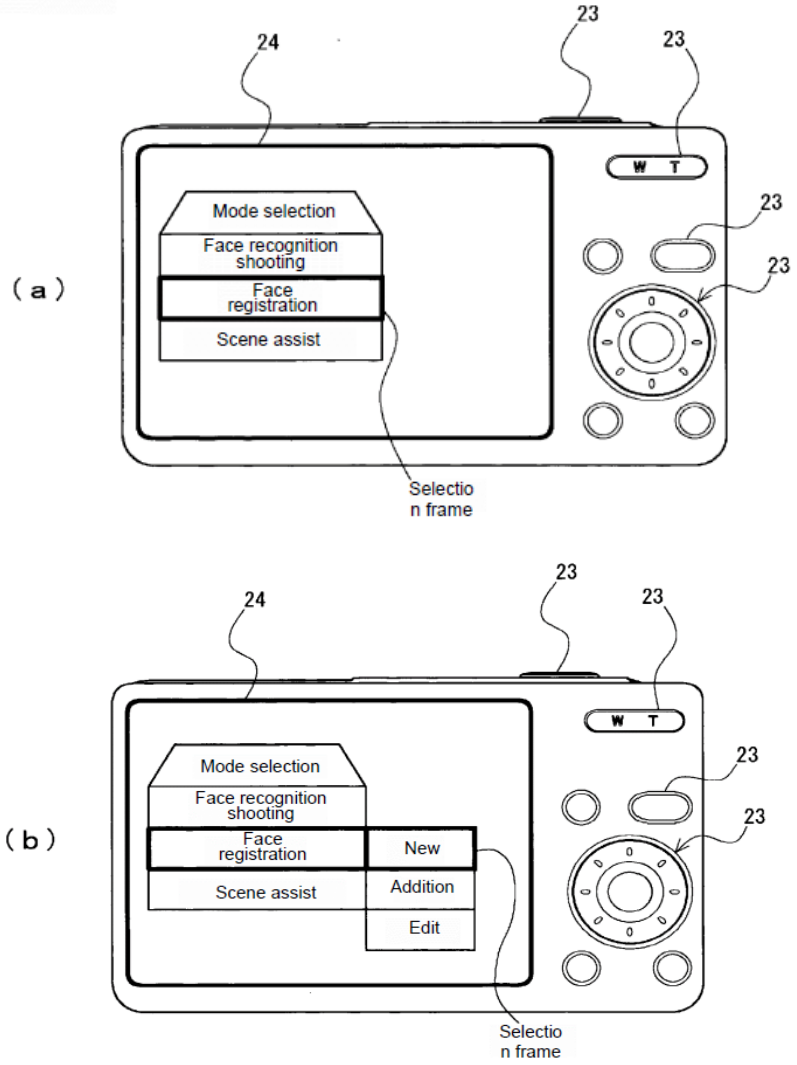
2. Relevant Prior Art

a. Nozaki (Ex. 1006)

Nozaki is a PCT International Application Publication that was published on May 31, 2007, more than one year before the earliest U.S. priority date of the '848 patent. Ex. 1001, code (63); Ex. 1006, code (43). Petitioner asserts that Nozaki is prior art under pre-AIA 35 U.S.C. § 102(a) and § 102(b). Pet. 5.

Nozaki relates to "an electronic camera and an image processing device provided with human face recognition functions." Ex. 1006 ¶ 1. Nozaki describes a face registration mode, which is "a type of shooting mode with which a user can shoot the face of a registered person to generate face recognizing data." *Id.* ¶ 62.

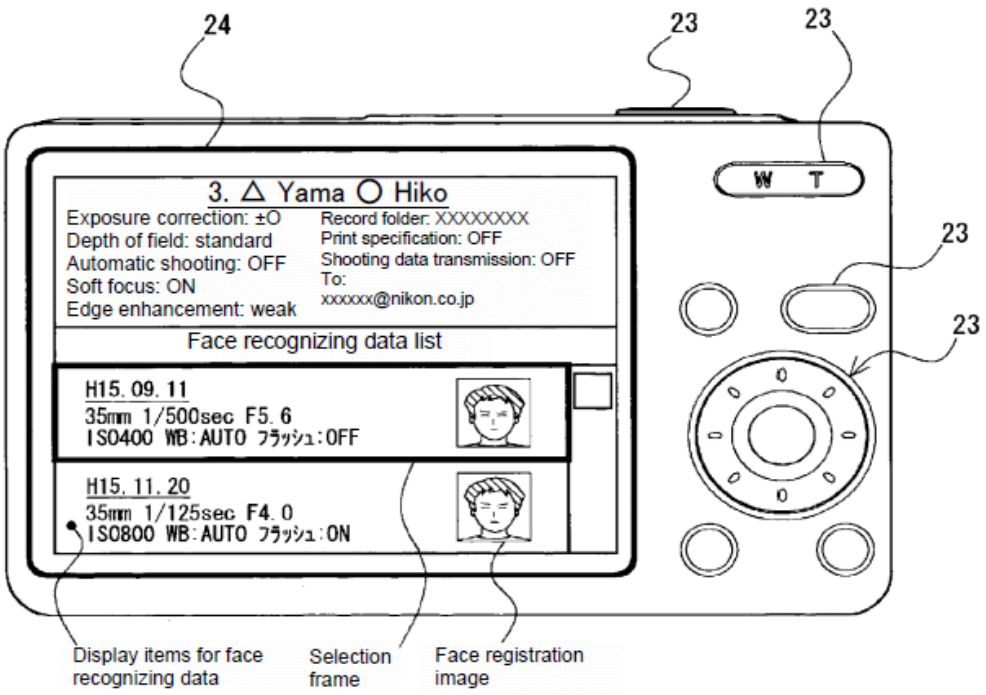
Nozaki's Figures 3(a) and 3(b) are reproduced below.



Nozaki's Figures 3(a) and 3(b), above, depict an example of a mode selection screen displayed on the liquid crystal monitor 24 of an electronic camera. Ex. 1006 ¶¶ 41, 63, 64. Referring to Figure 3(a), Nozaki describes that "the user operates a selection frame on the mode selection screen by using the operating member 23 . . . to actuate a 'face registration mode.'" *Id.* ¶ 63. Referring to Figure 3(b), Nozaki explains that a menu for the "face registration mode" is then displayed on the liquid crystal monitor 24 and "[w]here the face of a new person is registered, the user selectively inputs

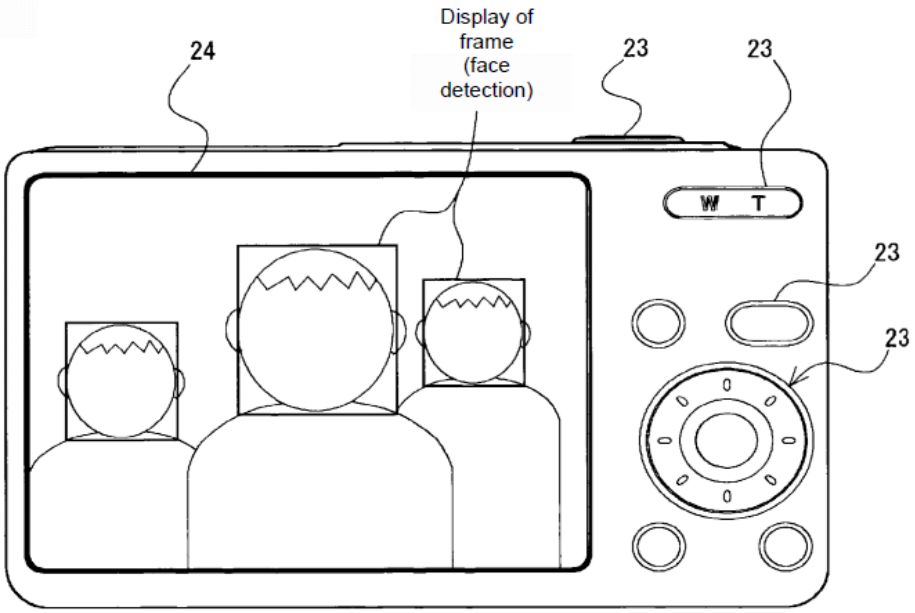
'new,'" while, "where the face of the person who has already been registered is additionally shot, the user selectively inputs 'addition.'" *Id.* ¶ 64.

Nozaki's Figure 5 is reproduced below:



Nozaki's Figure 5, above, shows an example of a detailed information screen of the registered person. Ex. 1006 ¶ 41. When "new" is selected in Figure 3(b) above, Nozaki describes, referring to Figure 5, that the detailed information screen of registered person is displayed on the liquid crystal monitor 24, "prompting a user to input information on the 'name of registered person' and 'processing setting on face recognition,'" which is recorded in the camera's face registration memory. *Id.* ¶ 65; *see also id.* at Figure 1.

Nozaki's Figure 6 is reproduced below.



Nozaki's Figure 6, above, depicts a display example of a preview image on face detection. Ex. 1006 ¶ 41. Referring to Figure 6, Nozaki explains that when the face of a person is detected inside the shooting screen, a rectangular frame is displayed at a position of the face area of a preview image so that "a user is able to confirm the presence or absence of face detection by referring to the preview image." *Id.* ¶ 74.

According to Nozaki, when the camera's release button is fully pressed, the camera's image sensor is driven to shoot a subject image and face registration image data is generated based on an image signal at release. Ex. 1006 ¶¶ 80–81. Nozaki further describes that face recognizing data of a registered person is generated from the face registration image data, which is trimmed and resized into a predetermined size by resolution conversion to generate index image data. *Id.* ¶ 81. The shooting condition, date, and time are recorded for the face recognizing data, index image data, and face registration image data in the face registration memory. *Id.* ¶ 82.

b. Haitani (Ex. 1007)

Haitani is a U.S. Patent that issued on May 30, 2017, from an application filed on March 22, 2007, which is earlier than the earliest priority date of the '848 patent. Ex. 1001, codes (30), (63); Ex. 1007, code (22). Petitioner asserts that Haitani is prior art under pre-AIA 35 U.S.C. § 102(e). Pet. 5.

Haitani relates to a device that "may process images (e.g. sort, group, file, e-mail, etc.) using various filters," which "may relate to non-image data in the image files to be processed" and "may include time and location filters." Ex. 1007, code (57). Haitani describes a portable hand-held device, such as a smartphone, that may include a camera to capture images using an image application run by a processing circuit. *Id.* at 2:11–27; *see also id.* at Figs. 1 and 2. According to Haitani, the image application may be configured to display images on a display of the device and may also include various filters to limit the number of images displayed. *Id.* at 2:42–45.

Haitani describes that image data captured by the camera may be used to form an image file. Ex. 1007, 3:28–30. Haitani further describes that non-image data based on the image in an image file may be added to the image file. *Id.* at 6:33–35. According to Haitani, an image recognition program recognizes objects, such as people, in an image and "may be pre-trained to identify certain individuals (such as individuals the user may photograph regularly) and then look for those people in the images" of the device. *Id.* at 6:35–42. Haitani describes that data based on the object recognition, such as the names, other identification, or association with a group of the people recognized in the image, can be added to the image files. *Id.* at 6:43–52.

Haitani discloses that if there are large numbers of image files, the device may use filters to reduce the number of image files through which a user needs to sort to select an image for sharing, viewing, or taking other actions. Ex. 1007, 10:61–66. According to Haitani, "[f]or a system that uses filters by subject matter, there may be more than one filter menu . . . that relates to that subject matter." *Id.* at 11:4–6. For example, one filter menu relates to broad categories, such as a state/province location, and a second filter menu relates to narrower categories within the broad categories, such as a city location within the selected state/province. *Id.* at 11:6–11.

Figure 6 of Haitani is reproduced below.

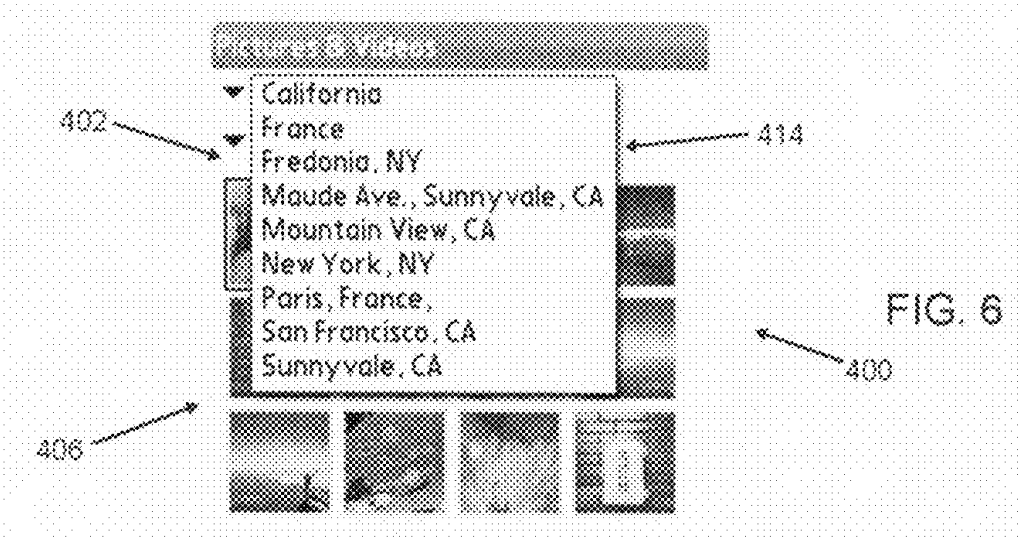


Figure 6, above, depicts a first filter menu 402 including multiple filter options 414 of varying specificity within the same menu 402. Ex. 1007, 11:24–26. As shown in Figure 6, "[a] single filter menu can include a first filter option directed to a broad category (e.g. the state of California) and a second filter option directed to categories that are within and narrower than the first filter option (e.g. cities within California)." *Id.* at 11:26–30.

c. Graham (Ex. 1008)

Graham is a U.S. Patent Application Publication that published on May 20, 2004, more than one year before the earliest U.S. priority date of the '848 patent. Ex. 1001, code (63); Ex. 1008, code (43). Petitioner asserts that Graham is prior art under pre-AIA 35 U.S.C. § 102(b). Pet. 6.

Graham relates to techniques for providing a graphical user interface (GUI) that "enables a user to navigate and skim through the stored information and to analyze the contents of the stored information." Ex. 1008, code (57). Graham notes that, to assimilate vast quantities of information in a short period of time, "readers find they must read electronic documents 'horizontally' rather than 'vertically,' i.e., they must scan, skim, and browse sections of interest in one or more electronic documents rather then read and analyze a single document from start to end." *Id.* ¶ 13. Accordingly, "there is a need for techniques that allow users to skim or read a multimedia document 'horizontally.'" *Id.* ¶ 14.

Figure 3 of Graham is reproduced below.

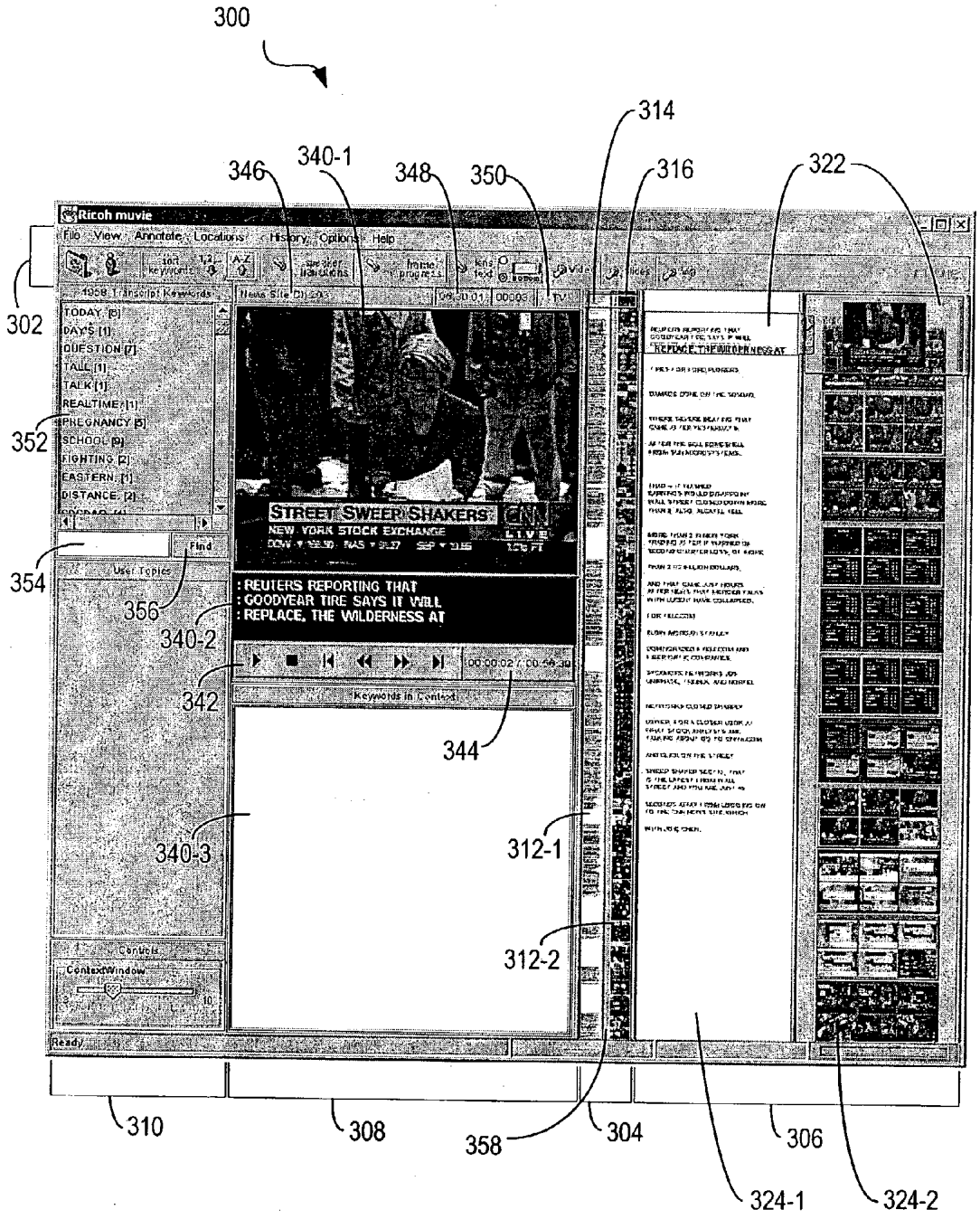


Fig. 3

Graham's Figure 3, above, depicts a user interface (GUI) 300 displaying multimedia information stored in a multimedia document. Ex. 1008 ¶¶ 81–82. According to Graham, the term "multimedia information" is "intended to refer to information that comprises information of several different types,"

such as a combination of text information, graphics information, animation information, audio information, and video information. *Id.* ¶ 61. According to Graham, the term "multimedia document" is "intended to refer to any electronic storage unit (e.g., a file, a directory, etc.) that stores multimedia information," such as "video recordings, MPEG files, news broadcast recordings, presentation recordings, recorded meetings, classroom lecture recordings, broadcast television programs, or the like." *Id.* ¶ 62. For example, interface 300 in Figure 3 displays multimedia information, including video information, audio information, and closed-caption (CC) text information, stored by a television broadcast recording multimedia document. *Id.* ¶ 318. According to Graham, "[t]he video information, audio information, and CC text information are all captured along the same (or common) timeline possibly by different capture devices." *Id.*

As shown in Figure 3, GUI 300 comprises several viewing areas, including a viewing area 304 comprising one or more thumbnail images 312. Ex. 1008 ¶¶ 84, 87. For example, viewing area 304 displays two thumbnail images 312-1 and 312-2, wherein thumbnail image 312-1 displays text information, such as CC text or transcription of audio information included in the multimedia information displayed by GUI 300, and thumbnail image 312-2 displays video information included in the multimedia information displayed by GUI 300. *Id.* ¶¶ 87–88. According to Graham, "[s]ince the audio and video information are captured along the same timeline, the representations of the information can be displayed such that they are temporally aligned or synchronized with each other" and "thumbnail images 312-1 and 312-2 are aligned such that the text information . . . in thumbnail image 312-1 and video keyframes displayed in thumbnail 312-2 that occur at a particular point of time are displayed approximately close to each other

along the same horizontal axis." *Id.* ¶ 319; *see also id.* ¶ 90. Graham explains that "[t]his enables a user to determine various types of information in the television broadcast recording occurring approximately concurrently by simply scanning the thumbnail images in the horizontal axis." *Id.* ¶ 319.

d. Kim (Ex. 1009)

Kim is a Korean Unexamined Patent Application Publication that published on February 8, 2007, more than one year before the earliest U.S. priority date of the '848 patent. Ex. 1001, code (63); Ex. 1009, code (43). Petitioner asserts that Kim is prior art under pre-AIA 35 U.S.C. § 102(b). Pet. 6.

Kim relates to "an apparatus and method for high-speed video partitioning according to topic based on detected main characters." Ex. 1009, 6.[5] Kim describes a "method of partitioning a video by subject" comprising "a step of detecting a plurality of key frames using character information in a video sequence consisting of a plurality of frames, and determining the detected key frames as the starting shot of each subject; and a step of creating a topic list using the starting shot of each topic." *Id.* at 7.

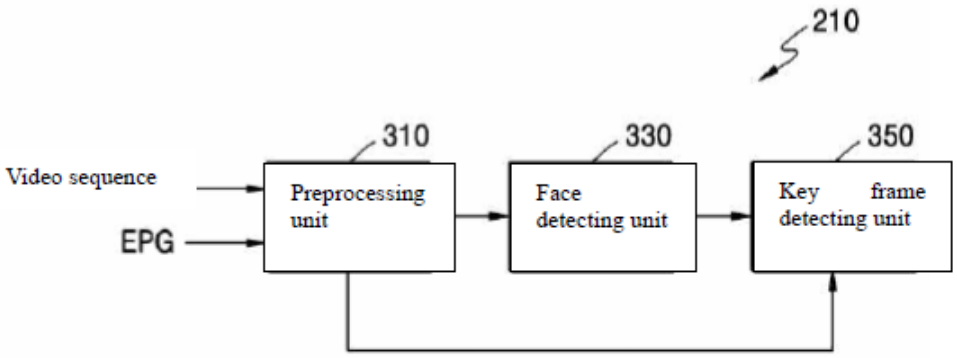
Kim's Figure 1 is reproduced below.

[5] The cited page numbers in Exhibit 1009 refer to page numbers added by Petitioner at the bottom right corner of the reference.

Kim's Figure 1, above, depicts "an example of division by subject in a news video." Ex. 1009, 7. As shown in Figure 1, the news video is partitioned into chapters 1–25 according to topic, wherein "each chapter consists of a starting shot set as a key frame in which the main characters appear and a data screen supporting the content." *Id.*

Kim's Figure 3 is reproduced below.

FIG. 3



Kim's Figure 3, above, depicts a block diagram of a start shot determining unit 210 comprising a preprocessing unit 310, a face detecting unit 330, and a key frame determining unit 350. Ex. 1009, 7. According to Kim, the preprocessing unit 310 "takes the video sequence constituting one video as an input, detects the scene transition, determines the frames belonging to the

current scene, and uses the EPG (Electronic Program Guide) signal of the video as an input to determine the number of main characters." *Id.* at 8. The face detecting unit 330 "detects a face in each frame belonging to the current scene determined by the preprocessing unit 310." *Id.* Kim also describes that the key frame determining unit 350 "extracts clothing information from frames in which faces are detected in the face detecting unit 330, clusters the frames by characters corresponding to the clothing information, and determines the frame comprising the main character as the key frame, that is, the starting shot of the subject." *Id.*

Figures 4B and 4C of Kim are reproduced below.

FIG. 4B

FIG. 4C

Kim's Figure 4B, above, depicts the key frame, which is the character clustering result determined by the key frame determining unit 350. Ex. 1009, 8. Kim's Figure 4C, above, depicts a topic list generated by the key frame shown in Figure 4B. *Id.*

F. Obviousness Over Nozaki and Haitani (Ground 1)

For Ground 1, Petitioner contends that dependent claims 11, 12, 16, 17, 19, and 20 are unpatentable under 35 U.S.C. § 103 as obvious over Nozaki and Haitani. Pet. 7–36. Petitioner submits the testimony of Dr.

Bederson in support of its contentions. Ex. 1005 ¶¶ 66–139. Patent Owner disputes certain aspects of Petitioner's evidence and arguments. Prelim. Resp. 26–34. We begin our analysis by considering Petitioner's rationale for combining the teachings of Nozaki and Haitani.

1. Rationale to Combine Nozaki and Haitani

Petitioner asserts that "Nozaki and Haitani are analogous art to the '848 patent, and [a person of ordinary skill in the art] would have found it obvious to combine them for that reason alone." Pet. 7 (citing Ex. 1005 ¶ 66). Petitioner explains that "[t]he '848 patent is directed to 'a recording and reproducing apparatus' with methods for capturing and reproducing video information that are 'suitable for application to, e.g., a video camera.'" Pet. 7 (citing Ex. 1001, 1:15–17). According to Petitioner, "Nozaki and Haitani likewise disclose devices with digital cameras that can capture and reproduce image/video files." Pet. 7–8 (citing Ex. 1006 ¶¶ 1, 47–48; Ex. 1007, 2:8–17.

Petitioner asserts that "[t]he disclosures in Nozaki and Haitani are compatible and complementary to each other, and [a person of ordinary skill in the art] would have been motivated to combine them for this additional reason." Pet. 8 (citing Ex. 1005 ¶ 67). Petitioner explains that "Nozaki uses face-recognition technology to organize recorded images/videos into 'groups' according to whether they feature identified registered individuals." Pet 8 (citing Ex. 1006 ¶¶ 62–65, 73–83, 110–114). Petitioner points out that "[a]lthough Nozaki discloses the reproduction of image/video files based on stored information about those files (e.g., face-recognition data, time/date data, event data, etc.), Nozaki does not explore the ways that the recorded information can be used to tailor the reproduction search process to produce broader or narrower results." Pet. 8 (citing Ex. 1005 ¶ 67). According to

Petitioner, "Haitani teaches how to achieve this objective." Pet. 8 (citing Ex. 1005 ¶ 67). "Specifically," Petitioner points out, "Haitani discloses selectively reproducing image and video information using combinations of filters, many of which use data that the Nozaki device already generates, including face-recognition data, date/time information, and event data." Pet. 8 (citing Ex. 1007, 1:29–33, 2:40–49, 6:39–42).

According to Petitioner, a person of ordinary skill in the art "would have recognized that Haitani's filters-based search and reproduction would complement the Nozaki device in order to improve the efficiency of the Nozaki device in recalling and reproducing the images desired by the user." Pet. 8 (citing Ex. 1005 ¶ 68). Petitioner asserts that a person of ordinary skill in the art "would have known, similar to what Haitani teaches, that users of devices with digital cameras generate a large number of image and video data and need ways to sort and locate those files." Pet. 8–9 (citing Ex. 1005 ¶ 68). Petitioner argues that "Haitani's search filters address this need and could have been easily implemented in the Nozaki device." Pet. 9 (citing Ex. 1005 ¶ 68). "Such implementation," Petitioner asserts, "would have been within the skill" of a person of ordinary skill in the art. *Id.*

Patent Owner argues that Petitioner "provides *absolutely no reasoning* as to why [a person of ordinary skill in the art] would be motivated to combine the various embodiments of Nozaki Petitioner uses to cobble together its challenges." Prelim. Resp. 26. Patent Owner asserts that "Nozaki purportedly discloses fifty-seven different inventions in seven different embodiments," and "Petitioner utilizes three different embodiments disclosed in Nozaki in analyzing Claim elements 8[e] (Nozaki embodiments 1 and 5), 8[g] (Nozaki embodiment 1), 8[h] (Nozaki embodiment 5), and 8[i] (Nozaki embodiments 5 and 6)." *Id.* at 26–27 (citing Ex. 1006 ¶¶ 9–38; Pet.

11–26). "Yet," Patent Owner argues, "Petitioner made *no* effort to meet its burden of showing any motivation or rationale to combine the various embodiments it utilizes in Nozaki." Prelim. Resp. 27. Patent Owner contends that "Petitioner's pointing to disparate embodiments in Nozaki without providing *any* motivation to combine them is not enough to establish the obviousness of the challenged claims." *Id.* at 28.

We disagree with Patent Owner that Petitioner is "pointing to disparate embodiments in Nozaki" in an effort to "cobble together its arguments." First, Nozaki is directed to an electronic device, i.e. an *electronic camera* and image processing device. Ex. 1006, code (53). Nozaki specifically discloses "[a]n electronic camera [that] comprises an image sensor, an image processing section, a face detecting section, a controlling section, a face image creating section, or a face recognizing data creating section, and a recording section." *Id.* at code (57), Abstr. A person of ordinary skill in the art reading Nozaki would readily understand that Nozaki's electronic camera is a sophisticated electronic device comprising numerous electrical, optical, analog, digital, and mechanical sub-systems and components that interact and work together to provide a user with a relatively easy to use camera that can take pictures, perform facial recognition, and accomplish registration shooting. *Id.* ¶¶ 6–8. Nozaki explains in detail, and a person of ordinary skill in the art would understand, how the various sub-systems and components of Nozaki's camera interact with each other to accomplish these goals. *Id.* ¶¶ 42–56, Fig 1.

Second, while Petitioner references and relies upon what Nozaki refers to as Embodiments 1, 5, and 6, Nozaki also expressly states, and a person of ordinary skill in the art would readily understand, that Embodiments 5 and 6 are only "exemplified variation[s] of Embodiment 1."

See id. ¶¶ 42–93 (Embodiment 1), 110–126 (Embodiment 5), 127–165 (Embodiment 6). Thus, a person of ordinary skill in the art reading and considering Nozaki as a whole, would readily understand that Embodiments 5 and 6 are related to, and have many features in common with, Embodiment 1, and that these embodiments of Nozaki's electronic camera are not "disparate embodiments" as Patent Owner attempts to characterize them.

Based upon the current record, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that a person of ordinary skill in the art at the time of the invention would have had a reasoned basis for combining the teachings of Nozaki and Haitani in the manner proffered and would have had a reasonable expectation of success in that endeavor.

2. Claim 11 (Incorporating Limitations of Canceled Claim 8)

We now consider the evidence and arguments of the parties directed to claim 11, which depends from cancelled claim 8. Petitioner contends that claim 11 is unpatentable under 35 U.S.C. § 103(a) as obvious over Nozaki and Haitani. Pet. 7–30. Petitioner submits the testimony of Dr. Bederson in support of its contentions. Ex. 1005 ¶¶ 66–101. Patent Owner disputes certain aspects of Petitioner's evidence and arguments directed to these claims, in particular limitation 8[g]. *See* Prelim. Resp. 30–34. Patent Owner does not contest Petitioner's evidence and arguments directed to the other limitations of claim 8 or 11. *See id.* We consider all of Petitioner's evidence and arguments directed to claims 8 and 11, and we address in detail all of Patent Owner's arguments directed to these claims. We start with disputed limitation 8[g] first.

a. Contested Limitation 8[g]

Limitation [8g] recites: *register a person in the image information as a specific person in a mode selected from a first setting mode and a second setting mode, wherein, when the first setting mode is selected, a person with a face is obtained by newly photographing the person in a photographing mode and thereafter registered as the specific person*. Ex. 1001, 15:64–16:9.

Petitioner asserts that Nozaki discloses this limitation. Pet. 12 (citing Ex. 1005 ¶ 77. According to Petitioner,

> Nozaki discloses two modes for "face registration": (1) a first mode (a "new" face registration mode) where an unregistered person is photographed for the first time as part of the registration process; (2) and a second mode (a "regeneration mode" face registration mode) where an already captured photograph is reproduced from the device memory and used to register a previously unregistered person.

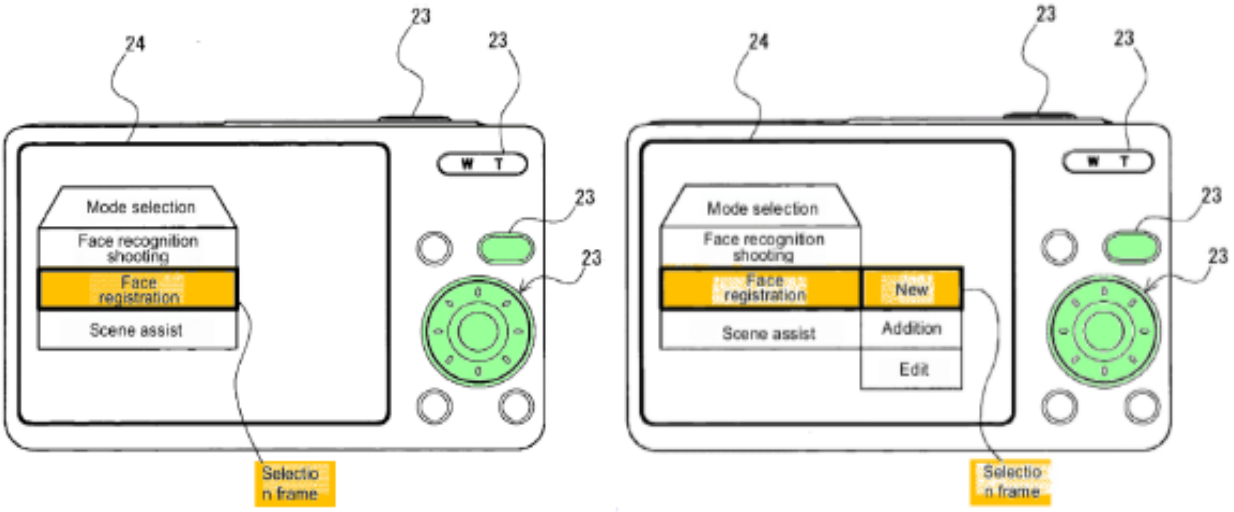
Pet. 12–13 (citing Ex. 1005 ¶¶ 77–81; Ex. 1006, Figs. 2, 3, 5, ¶¶ 62–65, 73–83).

Petitioner explains that in Nozaki,

> the user sets a shooting mode of the electronic camera to a 'face registration mode' by using the operating member 23." EX1006, Fig. 2 (flowchart step S101), [0062]. As shown below-left in Figure 3A, the "face registration mode" (orange) is selected from among the onscreen options using the device's input controls (the "operating member 23," highlighted green). EX1006, Fig. 3A, [0063]. This selection brings up a submenu (below-right in Figure 3B), wherein a user can select "new" to register "the face of a new person."

Pet. 13–14 (citing Ex. 1006, Fig. 2 (flowchart step S102), ¶ 64).

Nozaki's Figures 3A and 3B, annotated by Petitioner, are shown below.

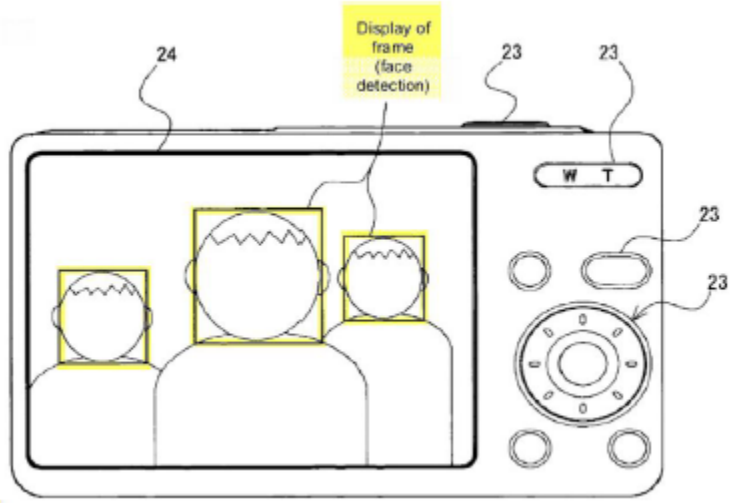


Nozaki's annotated Figure 3A (left) and 3B (right), show examples of Nozaki's selection screen, with face recognition, face registration, and scene assist options that are selected and displayed on liquid crystal monitor 24 using operating member 23. Ex. 1006 ¶ 63.

Petitioner explains that "the first registration mode (the 'new' face registration mode) in Nozaki involves newly photographing a person and using the new image to register him/her as a specific person." Pet. 14 (citing Ex. 1005 ¶ 79). Petitioner asserts that "Nozaki teaches that selecting 'new' face registration (above-right, Figure 3B) causes the device to 'generate[] a group folder of a newly registered person (a registered person to be shot this time)' in a 'face registration memory 27.'" Pet. 14 (citing Ex. 1006, Fig. 2 (flowchart steps S103 and S104), ¶ 65. According to Petitioner, "[t]he user can thereafter input information on the 'name of registered person,' along with other data such as the photographing preferences for that person (e.g., exposure correction)." Pet. 14 (citing Ex. 1006, Fig. 2 (S103, S104), Fig. 5, ¶ 65.

Petitioner explains that "[a]fter the person's registration information is inputted, Nozaki's device newly captures a photograph of him/her." Pet. 14

(citing Ex. 1005 ¶ 80). Petitioner asserts that "Nozaki teaches that '[t]he CPU 26 drives the image sensor 16 to acquire a moving image signal' and display it on the 'monitor 24' as a 'preview image.'" Pet. 14 (citing Ex. 1006, Fig. 2 (S106 and S107), ¶ 73). According to Petitioner, "[t]he CPU's 'face detecting section 31… applies known face detecting processing to the moving image data, thereby detecting a face area inside a shooting screen.'" Pet. 14–15 (citing Ex. 1006, Fig. 2 (S108), ¶ 73). Nozaki's Figure 6, annotated by Petitioner, is shown below.



Petitioner explains that "in Figure 6, when 'the face of a person inside the shooting screen' is detected, the Nozaki device 'displays a rectangular frame at a position of the face area of a preview image' so as to enable a user to 'confirm the presence or absence of face detection by referring to the preview image.'" Pet. 15 (citing Ex. 1006, Fig. 2 (S108), ¶ 74).

Petitioner goes on to explain that

> [i]f the face is detected and determined to be in a state ready for photographing (e.g., facing the camera with a neutral expression) (EX1006, Fig. 2 (S109, S110, S111), [0075]-[0079]), and if the user has pressed the shutter release button, then "CPU 26 drives the image sensor 16 to shoot a subject image" and "the image processing section 20 generates

> shooting image data (face registration image data) based on an image signal at release." EX1005, ¶ 81; EX1006, Fig. 2 (S112 to S114), [0080]-[0081]. The device generates "face recognizing data"—i.e., data to identify a registered person in future image/videos—from the photograph of the newly registered person (the "face registration image data"). EX1006, Fig. 2 (S115), [0081]. The Nozaki device also "trims a face area of the face registration image data and resizes it into a predetermined size by resolution conversion to generate index image data," i.e., a thumbnail image of the person's face. EX1006, Fig. 2 (S115), Figs. 4 and 5, [0081]. "The CPU 26 records the shooting condition and the shooting date and hour for face recognizing data, index image data and face registration image data in the face registration memory 27" corresponding to the group folder of the registered person. EX1006, Fig. 2 (S116), [0082]. This completes the "new" face registration process.

Pet. 15–16 (citing Ex. 1006, ¶ 83).

Patent Owner, however, asserts that "Nozaki operates in precisely the opposite manner as the claimed invention, namely, 'when the first setting mode is selected, a person with a face is obtained by **newly photographing the person** in a photographing mode **and thereafter** registered as the specific person.'" Prelim. Resp. 33 (citing Ex. 1001, Claim 8 (emphasis added by Patent Owner). "In other words," Patent Owner explains, "it is not until after the new person is photographed that the new person is registered as the specific person. Nozaki, as admitted by Petitioner, only newly captures a photograph after the person's registration information is inputted." Prelim. Resp. 33. "As a result," Patent Owner argues, "Petitioner has failed to show that Nozaki discloses element[] 8[g]." Prelim. Resp. 34.

We disagree with Patent Owner. As Dr. Bederson testifies with respect to Nozaki's "new" face registration mode,

> [i]f the face is detected and determined to be in a state ready for photographing (e.g., facing the camera with a neutral expression) (EX1006, Fig. 2 (S109, S110, S111), [0075]-[0079]), and if the user has pressed the shutter release button, then "CPU 26 drives the image sensor 16 to shoot a subject image" and "the image processing section 20 generates shooting image data (face registration image data) based on an image signal at release."

Ex. 1005 ¶ 81 (citing Ex. 1006, Fig. 2 (S112 to S114), ¶¶ 80–81.

Dr. Bederson then testifies that "'CPU 26 records the shooting condition and the shooting date and hour for face recognizing data, index image data and face registration image data in the face registration memory 27' corresponding to the group folder of the registered person." Ex. 1005 ¶ 81 (citing Ex. 1006, Fig. 2 (S116), ¶ 82. According to Dr. Bederson's testimony, "[t]his completes the 'new' face registration process." Ex. 1005 ¶ 81.

Limitation 8[g] recites in pertinent part that "*a person with a face is obtained by newly photographing the person in a photographing mode and thereafter registered as the specific person*." Ex. 1001, 15:67–16:2. Dr. Bederson testifies that in Nozaki, the completion of the "new" face registration process occurs *after* "CPU 26 records the . . . face registration image data in the face registration memory 27" corresponding to the group folder of the registered person," and that the "face registration image data" was previously obtained from "image processing section 20 . . . based on an image signal at release." Ex. 1005 ¶ 81. We credit Dr. Bederson's testimony that the "new" face registration process is completed after Nozaki's device captures a photograph of him/her because it is consistent with, and supported by, Nozaki's teachings. *See, e.g.*, Ex. 1005, Fig 2

(S104–S116) (illustrating the sequence of steps for registering a "new" face), ¶¶ 65–83 (explaining the operation of steps S104–S116 in detail).

At this stage of the proceeding, Patent Owner has not provided any declaration testimony to support its assertions. Patent Owner's assertions are founded mostly on attorney argument, which has little evidentiary value, and the testimony of Dr. Bederson presently stands unrebutted. *See Icon Health & Fitness, Inc. v. Strava Inc.*, 849 F.3d 1034, 1046 (Fed. Cir. 2017) ("Attorney argument is not evidence or explanation in support of a conclusion."); *Invitrogen Corp. v. Clontech Lab., Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005) ("Unsubstantiated attorney argument regarding the meaning of technical evidence is no substitute for competent, substantiated expert testimony."); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979) (citing *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972)) ("Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight.").

Based on the preliminary record before us, we determine that Petitioner has made a sufficient showing, for purposes of institution, that Nozaki teaches the subject matter recited in limitation 8[g].

b. Uncontested Limitations

Patent Owner does not contest any of the remaining portions of claims 8 and 11. *See* Prelim. Resp. 30–34. Petitioner provides evidence and argument, supported by the testimony of Dr. Bederson, that these uncontested portions of claims 8 and 11 are met by Petitioner's proposed combination of Nozaki and Haitani. *See* Pet. 11–41; Ex. 1002 ¶¶ 81–125.

After reviewing Petitioner's evidence and arguments concerning these uncontested portions of claims 8 and 11, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined

teachings of Nozaki and Haitani meet the uncontested portions of these claims.

c. Conclusion

We have considered Petitioner's evidence and arguments that the combined teachings of Nozaki and Haitani meet the limitations of claim 11 and the incorporated limitations of cancelled claim 8, as well as Patent Owner's evidence and arguments. Based on this preliminary record, and for the reasons given by Petitioner and those summarized above, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Nozaki and Haitani meet the limitations of these claims, and that a person of ordinary skill in the art at the time of the claimed invention would have had reason to combine their teachings in the manner described, and would have had a reasonable expectation of success in so doing.

3. Uncontested Claims 12, 16, 17, 19, and 20

Petitioner contends that the combined teachings of Nozaki and Haitani meet the recited limitations of claims 12, 16, 17, 19, and 20. Pet. 30–36. Petitioner provides a detailed claim analysis, supported by the testimony of Dr. Bederson. *See* Ex. 1005 ¶¶ 102–139.

For these claims, Patent Owner relies on substantially the same arguments proffered with respect to claim 11 (incorporating the limitations of canceled claim 8) to argue that Petitioner has not shown that the asserted prior art teaches or renders obvious these claims. *See* Prelim. Resp. 26–34.

We have considered Petitioner's evidence and arguments that the combined teachings of Nozaki and Haitani meet the limitations of claims 12, 16, 17, 19, and 20, and the incorporated limitations of cancelled claim 8, as well as Patent Owner's evidence and arguments. Based on this preliminary

record, and for the reasons given by Petitioner and those summarized above, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Nozaki and Haitani meet the limitations of these claims, and that a person of ordinary skill in the art at the time of the claimed invention would have had reason to combine their teachings in the manner described, and would have had a reasonable expectation of success in so doing.

G. Remaining Grounds 2 and 3

Petitioner contends that claim 84 is unpatentable under 35 U.S.C. § 103 as obvious over Nozaki, Haitani, and Graham (Ground 2) or Kim (Ground 3). Pet. 37–57. Petitioner provides a claim analysis, supported by the testimony of Dr. Bederson. *See* Ex. 1005 ¶¶ 140–179.

For these grounds, Patent Owner relies on substantially the same arguments proffered with respect to Ground 1, arguing that Petitioner has not shown that the asserted prior art teaches or renders obvious claim 84. *See* Prelim. Resp. 26–34.

We have considered Petitioner's evidence and arguments with respect to these other grounds. Because we determine that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge to claims 11, 12, 16, 17, 19, and 20 under 35 U.S.C. § 103(a) as obvious over Nozaki and Haitani (Ground 1), we institute *inter partes* review as to all other challenges in the Petition, including Petitioner's challenges under Grounds 2 and 3. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in showing the

unpatentability of at least one of the challenged claims of the '848 patent. We therefore institute trial as to all challenged claims on all grounds stated in the Petition.

At this preliminary stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or any factual or legal issue underlying the patentability inquiry. Any final determination will be based on the complete record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed forfeited or waived, even if that argument was presented in the Preliminary Response.

V. ORDER

Accordingly, it is

ORDERED that an *inter partes* review is instituted as to all challenged claims on all grounds raised in the Petition; and

FURTHER ORDERED that *inter partes* review is instituted commencing on the entry date of this Order, and 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.

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