

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,**
Petitioners

v.

MAXELL, LTD.,
Patent Owner

Inter Partes Review No.: IPR2024-00867

U.S. Patent No. 10,176,848

PETITIONERS' REPLY TO THE PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Level of Skill in the Art.....	1
III.	Claim Construction.....	1
	A. “mode”.....	1
IV.	Ground 1: Nozaki and Haitani Render Claims 11, 12, 16, 17, 19 and 20 Obvious.....	6
	A. Obviousness of Combining Nozaki and Haitani.....	6
	B. Limitation [8i]	9
	C. Limitation [11a].....	12
	D. Limitation [11b]	14
	E. Limitation [11c].....	15
	F. Limitation [12a].....	16
	G. Limitation [12b]	17
	H. Limitations [13h]-[13j], [16a]-[16c], [17a]-[17b], [18g]-[18i], [19a]-[19c], [20a]-[20b]	18
	I. Limitations [16a], [17a], [19a], and [20a].....	18
V.	Ground 2: Nozaki, Haitani, and Graham Render Claim 84 Obvious.....	19
	A. Obviousness of Combining Nozaki, Haitani, and Graham.....	19
	B. Limitation [84c.vii]	20
	C. Limitation [84d]	20
	D. Limitation [84h.i]	22
	E. Limitation [84h.ii]	23
VI.	Ground 3: Nozaki, Haitani, and Kim Render Claim 84 Obvious	23
	A. Obviousness of Combining Nozaki, Haitani, and Graham.....	23
	B. Limitations [84c.vii] and [84d]	23
	C. Limitation [84h.i]	24
	D. Limitation [84h.ii]	25

VII. Secondary Considerations	25
VIII. Conclusion	25

INDEX OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 10,176,848
1002	Reexamination Certificate of U.S. Patent No. 10,176,848
1003	File History of U.S. Patent No. 10,176,848
1004	Reexamination File History of U.S. Patent No. 10,176,848
1005	Declaration of Dr. Benjamin Bederson
1006	WO 2007/060980 (“Nozaki”)
1007	U.S. Patent No. 9,665,597 (“Haitani”)
1008	U.S. Patent Publ. No. 2004/0095376 (“Graham”)
1009	Korean Unexamined Patent Publ. No. 2007/0017068A (“Kim”)
1010	Bederson, B. <i>PhotoMesa: A Zoomable Image Browser Using Quantum Treemaps and Bubblemaps</i> (2001). 14th Annual ACM Symposium on User Interface Software and Technology (UIST '01). Association for Computing Machinery, NY, NY, USA, 71–80. DOI: https://doi.org/10.1145/502348.502359
1011	Bederson, B., et al. <i>Automatic Thumbnail Cropping and its Effectiveness</i> (2003). 16th Annual ACM Symposium on User Interface Software and Technology (UIST '03). Association for Computing Machinery, NY, NY, USA, 95–104. DOI: https://doi.org/10.1145/964696.964707
1012	Bederson, B., et al. <i>Semi-Automatic Photo Annotation Strategies Using Event Based Clustering and Clothing Based Person Recognition</i> (2007). <i>Interacting with Computers</i> . 19, 4 (July 2007), 524–44. DOI: https://doi.org/10.1016/j.intcom.2007.02.002
1013	Bederson, B., et al. <i>Zoomable User Interfaces as a Medium for Slide Show Presentations</i> (2001).
1014	U.S. Patent No. 5,835,667
1015	Bederson, B., et al. <i>Capture, Annotate, Browse, Find, Share: Novel Interfaces for Personal Photo Management</i> (2007). <i>International Journal of Human-Computer Interaction</i> , 23, 315-37.
1017	Reply Declaration of Dr. Benjamin Bederson
1018	Deposition Transcript of Dr. Ravin Balakrishnan, Ph.D. (April 3, 2025)

I. INTRODUCTION

Petitioners have conclusively demonstrated that the challenged claims of U.S. Patent No. 10,176,848 are invalid. Maxell's Patent Owner's Response ("POR") fails to rebut Petitioners' evidence. Instead, PO relies on an incorrect construction of the term "mode" and conclusory, unsupported arguments, many of which are contradicted by the deposition testimony of PO's own expert, Dr. Balakrishnan.

II. LEVEL OF SKILL IN THE ART

Although the experts propose slightly different POSITA definitions, the differences are immaterial to the analysis here. *See* EX1003 ¶ 35; EX2030 ¶ 39-43.

III. CLAIM CONSTRUCTION

A. "mode"

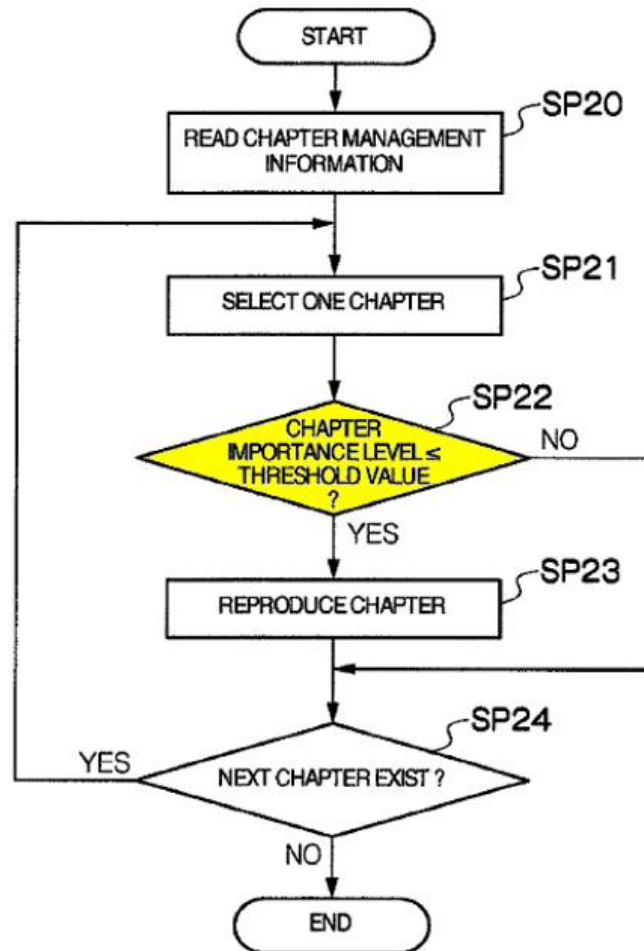
Petitioners contend that this term requires no construction, and that its plain and ordinary meaning should apply. PO proposes to construe "mode" as "an operational state that a system has been switched to." POR 13; EX2030 ¶ 72. Although Petitioners do not necessarily object to the concept of a "mode" as an operational state—indeed, the challenged claims remain invalid even under this construction (EX1017, ¶ 25)—Petitioners **do** object to PO's application of its construction, which is far narrower than the words alone suggest. Specifically, PO uses this construction to argue that the "filters" disclosed in the prior art "are not modes" as the claims recite. POR 23. This is wrong for two reasons.

First, PO's narrow interpretation of its "mode" construction contradicts the intrinsic evidence, and would exclude the patent's preferred embodiment from the scope of the claimed "reproducing modes."

PO cites only a few paragraphs from the '848 patent as support for its proposed construction while ignoring disclosures about the same preferred embodiment that contradict PO's position. POR 13-14. The '848 patent does indeed disclose three reproducing modes—standard, express, and superexpress—for reproducing different sets of chapters from a captured video "scene" based on the chapters' importance level.¹ EX1017, ¶ 15. In portions of the specification that PO fails to address, the specification teaches that all three modes operate using **the same** algorithm (the "chapter selecting reproducing function"). EX1001, 9:61-62; EX1017, ¶ 15. Figure 10 "illustrates the logic process contents" of this function. EX1001, 10:4-8. As highlighted below, each mode applies a different filter (a "threshold" as shown in SP22, highlighted yellow) to reproduce a larger or smaller set of chapters. See EX1001, 10:16-25 ("The threshold value is '5' if the 'standard reproducing mode' is set, '3' if the 'express reproducing mode' is set, and '1' if the 'superexpress reproducing mode' is set."); EX1017, ¶ 15.

¹ In the patent, chapters have importance levels of 1, 3, or 5. EX1001, Fig. 9.

FIG. 10



EX1001, Fig. 10 (highlighting added), 10:4-40. A POSITA would understand from these disclosures that the specification's reproducing modes employ user-selected filters (thresholds)² to selectively reproduce video chapters based on whether the chapters' importance level meets the threshold criteria. EX1017, ¶ 15.

As applied by PO, its proposed construction of "mode" excludes this operational principle from its scope. PO's expert Dr. Balakrishnan testified at

² PO's expert agrees that a threshold is a type of filter. EX1018, 47:18-48:9.

deposition that in his opinion multiple modes using a single algorithm that switches filters (thresholds)—similar to the '848 patent disclosures—are not distinct “reproducing modes” as the claims require. EX1018, 47:18-48:9, 53:15-55:3. Thus, under PO’s proposed construction, as applied by PO, the claims would not cover the very embodiment of “reproducing modes” that the '848 patent teaches. The intrinsic evidence therefore contradicts PO’s position, and conclusively demonstrates why PO’s construction must be rejected. *SanDisk Corp. v. Memorex Prods., Inc.*, 415 F.3d 1278, 1285 (Fed. Cir. 2005) (“A claim construction that excludes a preferred embodiment, moreover, ‘is rarely, if ever, correct.’”).

Second, the extrinsic evidence does not support PO’s proposed construction, or at least PO’s interpretation of it. As an initial matter, PO’s extrinsic evidence should be disregarded because, under PO’s interpretation, it “contradict[s] claim meaning that is unambiguous in light of the intrinsic evidence” discussed above. *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1290 (Fed. Cir. 2015). But even if considered, the extrinsic evidence does not support PO’s position.

PO’s dictionary definitions, for example, do not support PO’s interpretation of “mode.” At most, the definitions show that “mode” and “filter” have different meanings. But in no way do they preclude modes from being distinguished by the filters they include. EX1017, ¶ 17. If anything, the definitions demonstrate that modes **can** be distinguished on this basis. *Id.* For example, EX2029 defines a “mode”

as “[o]ne of several alternative conditions or methods of operation of a device” and a “filter” as “[a] device or program that separates data in accordance with specified criteria.” EX2029 at 5-5.³ A POSITA would have known that these two definitions can be interpreted in view of each other as encompassing “modes” that consist of alternative methods of operating a device via “filters” for separating data in accordance with specified criteria. EX1017, ¶ 17. This would be consistent with the disclosures of the ’848 patent and the way Petitioners have applied the term. *Id.*

The other “extrinsic evidence” also fails to support PO’s interpretation. For example, PO cites examples in the prior art and the previous work of Petitioners’ expert Dr. Bederson that purportedly use the word “mode” in a manner consistent with the definition “an operational state that a system has been switched to.” POR 16-19. But even if true—and it is not—these uses of “modes” do not preclude uses of the same term in other contexts, nor do they impact whether a “filter” can be the basis for distinguishing one mode from another in the context of the ’848 patent claims. EX1017, ¶ 18. As previously discussed, the ’848 patent discloses that its

³ PO’s only support for the “switched to” language in its proposed construction is the PCMag excerpt (EX2028), but that reference is irrelevant here because it is dated “1/21/25”—nine days before PO filed its POR—and offers no evidence regarding the definition of “mode” as of the 2008 assumed priority date. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (*en banc*) (holding that a term’s meaning must be ascertained “at the time of the invention”).

reproducing modes use a single algorithm that includes one “threshold” (filter) or another depending on the user’s selection. *Id.*, ¶ 18.

Thus, no extrinsic evidence—apart from the conclusory assertions of PO’s expert—supports PO’s proposed interpretation of “mode” as recited in the challenged claims. *Phillips*, 415 F.3d at 1318 (“[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”). PO’s construction should be rejected.

IV. GROUND 1: NOZAKI AND HAITANI RENDER CLAIMS 11, 12, 16, 17, 19 AND 20 OBVIOUS

A. Obviousness of Combining Nozaki and Haitani

Petitioners explained in detail why a POSITA would have been motivated to combine Nozaki and Haitani, both generally (Petition 7-9) and as to specific limitations (*id.* at 23-31). PO ignores much of this reasoning and instead offers rebuttals that are contrary to the law, conclusory, or factually incorrect.

PO first argues that Nozaki and Haitani cannot be combined as Petitioners propose because “[a] POSITA would not ignore the problems that prior art sought to solve in determining whether the two references could be analogous art.” POR 21. But that argument is wrong on the law. PO concedes that Nozaki and Haitani are from the same field of endeavor as the ’848 patent and are therefore analogous art. *See* POR 21 (recognizing that the ’848 patent, Nozaki, and Haitani all relate to recording and reproducing apparatuses); EX2030, ¶ 114 (same); Petition, 7-8. The

Federal Circuit has held that prior art is analogous if “the art is from the same field of endeavor [as the patent], ***regardless of the problem addressed.***” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1237 (Fed. Cir. 2010) (emphasis added). A POSITA would have been able to “fit the teachings” of such art “together like pieces of a puzzle.” *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 402 (2007).

PO cites to *Sanofi-Aventis Deutschland GmbH v. Mylan Pharms., Lts.*, 66 F.4th 1373, 1378 (Fed. Cir. 2023), to support its argument that Nozaki and Haitani cannot be combined because they allegedly “solve different problems from each other.” POR 21. PO’s reliance on this decision is misplaced. Contrary to PO’s claim, the Federal Circuit in *Sanofi-Aventis* expressly rejected PO’s position and clarified that prior art from outside the claimed invention’s field of endeavor will still be analogous if it addresses similar problems *to the challenged patent itself*. *Sanofi-Aventis*, 66 F.4th at 1378. Although no such showing is necessary here because PO has already conceded that all prior art comes from the same field of endeavor as the ’848 patent, the test in *Sanofi-Aventis* is satisfied as well: Nozaki and Haitani, like the ’848 patent, are directed to improving the photographing and reproducing efficiency of cameras, including through the use of face-recognition software. EX1017, ¶¶ 19-20. PO’s reliance on *In re Oetiker*, 977 F.2d 1443 (Fed. Cir. 1992), is equally misplaced. *Oetiker* addressed the issue of using *non-analogous* art from

the garment industry to invalidate a patent for an assembly line metal hose clamp.

Id. at 1446. Because the art here is analogous, *Oetiker* does not apply.

PO also claims that “Petitioner offers nothing other than conclusory reasoning.” POR 21. That assertion is patently false. Petitioners explained in detail that, as analogous art to the ’848 patent, Nozaki and Haitani would have been obvious to combine for the reasons articulated in the Petition. In support, Petitioners offered substantial evidence that a POSITA would recognize that: (1) Haitani’s filtered search modes of reproducing image information overlap with compatible features already present in the Nozaki device; (2) incorporating Haitani’s search modes into the existing reproducing modes of Nozaki’s device would improve the device, for example by enhancing the efficiency of Nozaki’s already existing image search and reproduction capabilities; and (3) such a modification to the Nozaki device was well within the capabilities of a POSITA. EX1005, ¶¶ 67-68, 87-93, 95-99. EX1017, ¶ 21. PO does not rebut any of this evidence.

Similarly false is PO’s assertion that “Dr. Bederson concedes that Nozaki has no disclosure to sort images, nor contemplates the inclusion of such a method.” As discussed in detail below (limitation [8i]), Dr. Bederson made no such concession. Thus, the conclusion PO draws from this untrue premise—“there is no reason that a POSITA would look to Haitani’s filters to purportedly solve a problem that Nozaki does not contemplate” (POR 22)—is entirely unsupported.

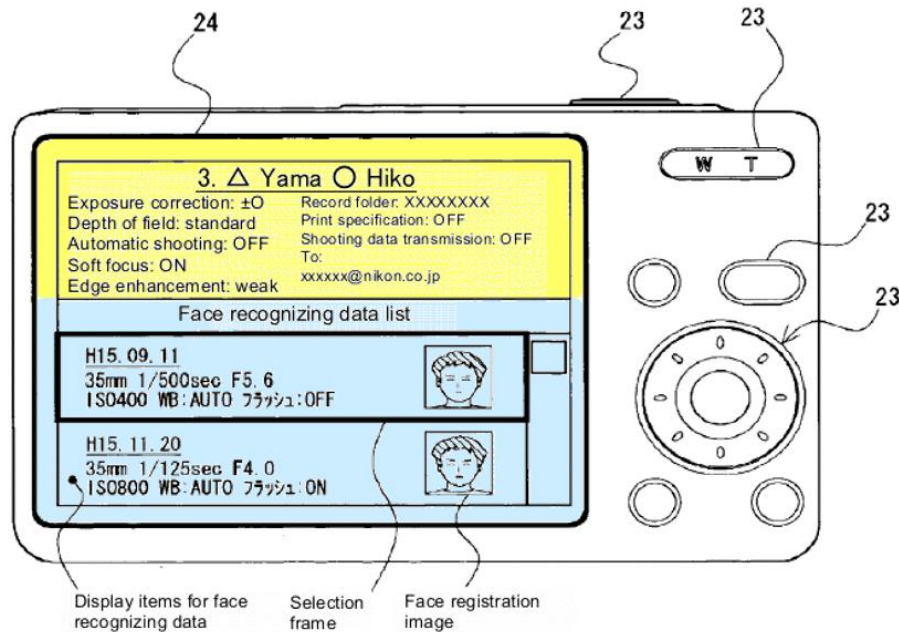
Also unavailing are PO's conclusory arguments against combining Nozaki and Haitani. For example, PO and its expert argue that "incorporating an entirely different function into a processor is hardly the result of 'easy' implementation techniques" (POR 23; EX2030, ¶ 117), but PO does not explain how these functions are "entirely different" or would in fact be anything other than easy to a POSITA. Indeed, at deposition PO's expert conceded that a POSITA would be more than capable of performing these tasks. EX1018, 12:19-14:12. PO also ignores that no "significant redesign" or incorporation of an "entirely different function" into Nozaki would be required, because Nozaki already discloses associating additional data with its captured image information and selectively reproducing image information using that data. EX1005, ¶¶ 67-68, 87-93, 95-99. EX1017, ¶¶ 21-22.

B. Limitation [8i]

PO does not dispute that at least Haitani discloses selectively reproducing image information of the registered person as this limitation requires. PO argues only against combining Nozaki and Haitani, alleging that Petitioners' proposed combination relies on "nothing but improper hindsight" and "contradictory" assertions about the references' compatibility. POR 24-25. This is untrue.

As discussed in the Petition, Nozaki discloses virtually this entire limitation. A "detailed information screen of a registered person" from Figure 5 of Nozaki is

shown below, wherein the lower portion of the screen (highlighted in blue) lists the “face recognizing data” from each captured photograph of the registered person.



EX1006, Fig. 5, [0150]-[0152]. The thumbnail “index image” in the list above (labeled “face registration image” in the translated figure) can—instead of a cropped image of the registered person’s face—be the entire photograph of the registered person (e.g., a thumbnail reproduction of the entire image). *Id.*, [0191].

Critically, the “face recognizing data list” in Figure 5 above displays **only** the images associated with the registered person, i.e., a subset of the total images stored on the device that has been filtered according to face recognizing data. *Id.*, [0150]-[0153]. Each entry in the list is selectable, thereby allowing a user to select a “display item.” *Id.*, [0152]-[0153]. These disclosures demonstrate that, contrary to PO’s

arguments (POR 24), Nozaki already implements a version of Haitani's filter criteria, and is therefore compatible with, and complementary to, Haitani.

The only thing that Nozaki does not expressly disclose is that selecting a "display item" from the "face recognizing data list" in Figure 5 above will cause the device to reproduce the image on the full screen (instead of as a thumbnail).⁴ But as Petitioners' expert explained, it would have been obvious to a POSITA to implement this functionality in the Nozaki device in view of Haitani's disclosure of full-screen image reproduction, which allows users to selectively display images using reproducing modes that filter according to similar criteria (e.g., face recognizing data). EX1005, ¶¶ 87-93. PO fails to address this evidence.

Moreover, as Petitioners previously explained, Nozaki also discloses a "regeneration mode" for selecting and reproducing saved images. EX1005, ¶¶ 92-93. A POSITA also would have found it obvious to implement Haitani's disclosures within this regeneration mode, so that users could achieve different reproducing modes that include various filters to narrow the set of selectable image and video files and more quickly locate the desired file to reproduce. *Id.* As Petitioners' expert explained, a POSITA would have understood that the Nozaki device already collects data for each image and video file that corresponds to the search filter modes that

⁴ PO's expert conceded that full-screen image reproduction is not necessary to meet this limitation, and that reproducing the thumbnail alone will suffice. EX1018, 19:16-21 ("If the thumbnail is the recorded image, then I am reproducing it.").

Haitani discloses. *Id.* To the extent that any additional data would need to be gathered or associated with the image information, such modification would have been easily achievable by a POSITA. EX1017, ¶¶ 21-22.

Thus, Nozaki and Haitani render obvious this limitation.

C. Limitation [11a]

PO's argument depends on its incorrect construction of "modes," which is wrong for the reasons discussed above, and should be rejected on that basis alone. Petitioners, however, also address several of PO's erroneous arguments.

First, PO argues that "[a] POSITA would not have understood that selecting two different filtering options in drop down menus would satisfy the claimed first and second reproducing modes." POR 26-27. This makes no sense given that PO elsewhere cites selecting "from a menu" as evidence of how a "mode" would be understood by a POSITA. POR 14; EX2030, ¶ 140. Similarly illogical is PO's attempt to distinguish Haitani by arguing that, in the '848 patent, "a user selects different modes that yield different operations, here, choosing specific chapters and playing back select information" (EX2030, ¶ 141), even though Haitani discloses the same thing, i.e., a user selecting different filtering modes that yield different operations, here, choosing specific image information to reproduce. Petition 21-30.

Second, PO argues that different modes must have "separate processing," which PO's expert confirmed would require separate algorithms. POR 32; EX1018,

47:18-48:9, 53:15-55:3. But as explained above, the '848 patent does not disclose using separate processing for its three reproducing modes; instead, it discloses one algorithm that simply alters the threshold value based on the user's selection.

Third, PO mischaracterizes Petitioners' motivation to combine arguments as contradictory. POR 33-34. Petitioners explained above why Nozaki's and Haitani's disclosures are compatible with and complementary to each other, and there is nothing contradictory in those positions. A POSITA would have recognized that Haitani's filtered search modes could help produce broader or narrower results in the Nozaki device that might help a user more efficiently search for and reproduce a desired set of images/videos. EX1005, ¶¶ 95-99. For example, a POSITA would have understood that the "detailed information screen of a registered person" (Figure 5) in Nozaki could be programmed to include a menu—similar to the one disclosed in Haitani—for selecting the reproducing mode that would generate smaller or larger sets of images in the lower portion of the screen. *Id.*; *see also* EX1017, ¶ 24. Although reproducing the thumbnail images displayed by the Nozaki device in the lower portion of Figure 5 would meet the "reproducing" claim requirements (by admission of PO's expert), a POSITA would have also known how to allow users—upon selecting one or more images/videos from among the search results—to display those images/videos on the full screen in the same way that Nozaki's "regeneration mode" discloses. EX1005, ¶¶ 95-99; EX1018, 19:16-21; EX1017, ¶ 24.

Even if the Board were to adopt PO's proposed construction of "mode," Nozaki and Haitani would still render obvious this limitation. EX1017, ¶ 25. As explained in § III.A, the plain language of PO's proposed construction merely requires switching between operational states. A POSITA would have understood that switching reproducing modes in the modified Nozaki-Haitani device constitutes switching the operational states of the device because the functions of the device (e.g., search and reproduce) would operate differently depending upon the filter(s) that each mode included. EX1017, ¶ 25.

D. Limitation [11b]

PO's argument primarily relies on its "modes" construction (POR 34-36), which is incorrect as already discussed.

PO additionally argues that the "temporal element" of limitation [11b] is not disclosed by either prior art reference. POR 34-36. But the arguments PO advances—that there is no indication in the prior art about "any reproduction speed of the filtering operations" and that Petitioners do not consider "the type of data and how it's structured and indexed" (*id.*)—mischaracterize the Challenged Claims, '848 patent disclosures, and prior art. The '848 patent contains no information about the reproducing time of its embodiment, or about the nature of the image information being reproduced (e.g., the type of data, or how it's structured or indexed). EX1017, ¶ 26. PO's expert, however, testified that a POSITA would easily know how the

embodiments meet the “temporal element” of limitation [11b], stating that “if you’re saying I’m going to reproduce five chapters as opposed to reproduce three chapters, then I think, by definition, each one of those are going to be different reproducing times.” EX1018, 39:19-41:12 (“[I]t takes more time to read two images than it takes to read one image. . . . assum[ing] that both images are of the same size, et cetera.”). This testimony underscores that a POSITA would have been able to understand the prior art in the same way. EX1017, ¶ 26.

PO also overlooks that “reproducing times” can—by Dr. Balakrishnan’s admission—also include the on-screen display time of the image information. EX1018, 28:17-30:10. As explained in the Petition, the combination of Nozaki and Haitani would result in selectively reproducing different sets of image information in multiple modes as well as displaying the image information. Petition 26-29. Thus, Nozaki and Haitani disclose the “temporal element” of this limitation in that way as well, which PO fails to address.

E. Limitation [11c]

PO’s argument primarily relies on its “modes” construction (POR 37-38), which is incorrect as already discussed.

PO also advances the strawman argument that all filters could potentially reproduce “the entire universe of face-recognition images” such that “there would be complete overlap between the two sets of images.” POR 37-38. This is an

unreasonable assumption in view of Haitani's express and repeated focus on avoiding "complete overlap" across modes by using different filtering modes to reproduce broader and narrower results. *See, e.g.*, EX1005, ¶ 97; EX1007, 11:15-33, 10:61-66 (stating that "[i]f large numbers of image files exist," a device can "reduce the number of files through which a user needs to sort to select an image for sharing, viewing, or taking other actions"). PO's argument should be rejected.

F. Limitation [12a]

PO's argument primarily relies on its "modes" construction (POR 38-39), which is incorrect as already discussed.

PO also alleges that "the Petition and Dr. Bederson fail to maintain any cohesive theory as to which filters are which specific modes and thus fail to map their theories to the claim language." POR 39. This is incorrect. The reproducing modes recited in the claims are defined by their reproducing times and reproduced content relative to each other (e.g., the reproducing time of the "first reproducing mode" is shorter than that of the "second reproducing mode"). As any POSITA would have understood—and as Petitioners explained and Dr. Bederson testified—the filter modes of Haitani meet these limitations by reproducing more or fewer image/video files depending upon the user selection. Even PO's expert conceded that different sets of images/videos will have different reproducing times. *See, e.g.*,

EX1018, 39:19-41:12 (“[I]t takes more time to read two images than it takes to read one image. . . . assum[ing] that both images are of the same size, et cetera.”).

G. Limitation [12b]

PO’s argument primarily relies on its “modes” construction (POR 40-43), which is incorrect as already discussed.

PO again accuses Petitioners of taking inconsistent or conclusory positions, but as with all of the similar accusations in the POR, PO is wrong. Limitation [12b] recites a “third reproducing mode” with a “reproducing time” longer than the “second reproducing mode.” EX1001, 16:45-49. This limitation, viewed in combination with the other limitations of claims 11 and 12, identifies clear requirements for the three claimed reproducing modes: (1) as for “reproducing time,” the first mode has the shortest reproducing time, the second mode has a longer reproducing time than the first mode, and the third mode has the longest reproducing time of the three; and (2) as for “the image information reproduced,” the second mode includes the image information reproduced under the first mode as well as other of the image information not reproduced under the first mode. *Id.*, 16:23-49.

Petitioners and their expert consistently identified the claimed “first reproducing mode” as the “narrowest” search, and identified the claimed “second reproducing mode” and “third reproducing mode” as the “broader” modes disclosed in Haitani that would generate larger numbers of image/video files. EX1005, ¶¶ 100,

101, 103-04; EX2031, 65:11-66:7. PO is incorrect that “Dr. Bederson did an about-face” regarding his opinions. POR 41. At all times, Dr. Bederson has clearly articulated that “[a] POSITA would have known that each mode would generate broader or narrower results, with the broadest mode being a ‘third’ mode having the characteristics recited in this limitation, i.e., a reproducing time longer than the second mode.” EX1005, ¶ 104. Although a POSITA would have understood from the disclosures alone which modes could be selected to correspond to the claimed “reproducing modes,” Dr. Bederson even specifically identified example filtered search modes disclosed in Haitani that could satisfy the three “reproducing mode” limitations and explained why a POSITA would have understood Haitani’s disclosures in this way. EX1005, ¶¶ 100, 101, 103-04; EX2031, 65:11-66:7. PO does not address the substance of these positions.

H. Limitations [13h]-[13j], [16a]-[16c], [17a]-[17b], [18g]-[18i], [19a]-[19c], [20a]-[20b]

PO relies on arguments for earlier limitations to dispute these limitations. Those arguments are incorrect for reasons already discussed.

I. Limitations [16a], [17a], [19a], and [20a]

In addition to arguments for the corresponding limitations of earlier claims, which are incorrect for reasons already discussed, PO alleges that Petitioner “has offered no proof” regarding the claim requirement of *sequentially* reproducing the image information picked out based on the predetermined condition in the first or

second reproducing mode. POR 49. This is incorrect. Petitioners addressed these limitations in connection with claims 13 ([13j]) and 18 ([18i]), where they are first recited. Petition 28, 34. As explained therein, Nozaki discloses selectively and sequentially—i.e., chronologically, based on the time of the captured image or video—reproducing image information that has been picked out based on the predetermined condition of face recognition data, among other possible search modes that would have been obvious to implement in view of Haitani. Petition 28, 34; EX1005, ¶¶ 99, 115. PO fails to address this evidence.

V. GROUND 2: NOZAKI, HAITANI, AND GRAHAM RENDER CLAIM 84 OBVIOUS

A. Obviousness of Combining Nozaki, Haitani, and Graham

PO relies on arguments made in Ground 1 to dispute the combination of Nozaki and Haitani in Ground 2. PO's arguments fail for reasons already discussed.

PO also argues that it is “unclear” whether Petitioners propose to combine Graham with Nozaki alone, or with Nozaki and Haitani in combination. POR 50-51. This argument is meritless. Ground 2 identifies the alleged combination, with Nozaki as the primary reference and Haitani and Graham serving as secondary references. Petition 37-52. The Petition explains why and how a POSITA would have modified the Nozaki device in view of Haitani and Graham. *Id.* PO presents no substantive argument to dispute the combination other than to assert in conclusory fashion that “there is no support for such a statement.” POR 51; EX2030, ¶ 221.

Indeed, PO's argument consists largely of conclusory assertions that should be rejected. For example, PO and its expert argue that "the design requirements for Nozaki, Haitani, and Graham are substantially different" (POR 51), without identifying "design requirements" or explaining how they are "substantially different." PO also claims that the prior art references "are directed to solving different problems and use different structures to solve these problems," but fails to provide any credible support for its position. *Id.*

Petitioners explained in detail the general reasons why a POSITA would have been motivated to combine Nozaki, Haitani, and Graham (Petition 7-9, 37-38), and also provided limitation-specific arguments for combining the references (*id.* at 42-51). PO addresses none of this evidence.

B. Limitation [84c.vii]

PO's arguments here rely on its arguments for limitation [8i] (POR 52), which are incorrect for reasons already discussed.

C. Limitation [84d]

PO fails to address any of the evidence from the Petition and Dr. Bederson's declaration and instead argues that implementing a "touch panel" in Nozaki would not be obvious in view of Haitani because "the assignee of Haitani is Qualcomm"—a cell phone developer—and the applicant in Nozaki was "Nikon Corporation, a

leader in digital camera, not cell or smartphone technology.” POR 53-54. This argument lacks merit.

First, PO fails to address Petitioners' evidence of obviousness in view of Nozaki alone, because a touch-screen interface was just one of a finite number of ways for users to control the type of device disclosed in Nozaki and it therefore would have been obvious to try. Petition 43. Second, it is undisputed that Nozaki, Haitani, and Graham all come from the same field of endeavor as the '848 patent, and therefore a POSITA would have been able to combine those references as explained in the Petition. Third, the claim recites “a recording and reproducing apparatus,” which according to the '848 patent itself is “applicable to video cameras having various structures.” EX1001, 13:36-42. There is no evidence to support PO's position that a POSITA would have been unwilling or incapable of combining the camera-related disclosures in these references. Finally, Haitani—the “Qualcomm patent”—makes its disclosures in the context of “digital cameras” that “may be stand-alone cameras or may be integrated into other devices such as cell phones (including Smartphones).” EX1007, 1:24-29.

PO also offers the same conclusory arguments it employed for other limitations, e.g., arguing that the references “are directed to solving different problems and use different structures.” POR 54. But again, with no evidence or analysis to support these assertions, they should be afforded no weight.

D. Limitation [84h.i]

PO does not dispute that Graham discloses this limitation and only challenges the obviousness of combining Graham with Nozaki and Haitani. As an initial matter, PO again argues—incorrectly—that Petitioners “use[] two different two-reference combinations” in the Petition. POR 55. This argument remains meritless. Ground 2 identifies the alleged combination, and the Petition and Dr. Bederson explain why and how a POSITA would have modified the Nozaki device in view of Haitani and Graham to render claim 84 obvious. Thus, Petitioners employ the same “combination” consistently in this and in all other asserted Grounds.

With respect to this limitation, PO fails to substantively address any of Petitioners' evidentiary support for finding both obviousness and motivation to combine. Instead, PO reprises its conclusory arguments. POR 55 (“Graham is solving a wholly different problem with different hardware than Nozaki”). PO also makes irrelevant allegations about Graham, such as asserting that “Graham discloses searching for information by text or words, not by face information” (POR 56), an argument that (1) ignores that the claim limitation does not require any specific method of segmenting, and (2) relies on a few paragraphs from the 105-page reference for support, none of which relate to the disclosures Petitioners cited.

E. Limitation [84h.ii]

PO's arguments here rely on its arguments for limitation [84h.i] (POR 57-58), which are incorrect for reasons already discussed.

VI. GROUND 3: NOZAKI, HAITANI, AND KIM RENDER CLAIM 84 OBVIOUS

A. Obviousness of Combining Nozaki, Haitani, and Graham

PO relies on arguments made in Ground 1 to dispute the combination of Nozaki and Haitani in Ground 3. PO's arguments fail for reasons already discussed.

PO also makes the same arguments for Ground 3 that it did for Ground 2. These arguments are wrong for the reasons previously articulated. For example, PO again takes the position Petitioners' combination is "unclear." POR 59-60. Ground 3—like Grounds 1 and 2—identifies the alleged combination, and PO presents no substantive argument to dispute it other than to conclude that "there is no support for such a statement." POR 60. PO also again asserts that "the design requirements... are substantially different" and that the prior art references "solv[e] different problems and use different structures to solve these problems" (POR 60), but those positions lack any accompanying evidentiary support.

B. Limitations [84c.vii] and [84d]

PO relies on arguments from Ground 2 to dispute these limitations, which are incorrect for reasons already discussed.

C. Limitation [84h.i]

PO does not dispute that Kim discloses this limitation and only challenges the obviousness of combining Kim with Nozaki and Haitani. Here, PO again argues—incorrectly—that Petitioners “use[] two different two-reference combinations (Nozaki-Haitani and Nozaki-Kim)” in the Petition. POR 62. This argument remains meritless in view of Ground 3 clearly identifying and consistently relying on the alleged combination. PO also repeats its baseless conclusory assertions. POR 63 (“Kim is solving a wholly different problem with different hardware than Nozaki”).

PO's substantive arguments fare no better. PO asserts that “Petitioner and Dr. Bederson point to nothing in Kim that would suggest its multimedia content indexing technique is compatible with Nozaki.” POR 64. This argument ignores the very portions of the Petition that the POR includes in block quotes, i.e., that the role of Kim's “face detecting unit” could be filled by the face-recognition technology in Nozaki, and that Kim's indexing technique for identifying key frames aligns with a similar process for generating the list of face-recognition data in Nozaki. POR 63-64. PO also alleges that “Petitioner's generic references to ‘increased convenience’” from the combination in Ground 3 is “pure hindsight” (POR 64), even though the benefit cited in the Petition of “allowing users to easily browse or search a desired part” of a video file is a quote from the Kim prior art reference. *Id.*

In short, for this limitation, Petitioners provided ample evidentiary support for finding both obviousness and motivation to combine. Petition 53-57. PO fails to substantively address this evidence.

D. Limitation [84h.ii]

PO's arguments here rely on its arguments for limitation [84h.i] (POR 65-66), which are incorrect for reasons already discussed.

VII. SECONDARY CONSIDERATIONS

The POR does not articulate any secondary considerations of non-obviousness. Dr. Balakrishnan includes a single paragraph directed to the issue (EX2030, ¶ 108), but does not perform the analysis that his own report concedes that he must, e.g., identifying a nexus between secondary considerations and the claimed invention (*id.*, ¶ 33). Moreover, the elements of the Challenged Claims were well-known in the art at the relevant time and obvious to combine.

VIII. CONCLUSION

The Challenged Claims should be found unpatentable for the reasons set forth in the Petition and in the Board's Institution Decision.

Date: April 24, 2025

Respectfully submitted,

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioners certify that this Reply includes 5,401 words, as measured by Microsoft Word, exclusive of the table of contents, exhibit listing, and certificates of word count and service.

.

Date: April 24, 2025

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners

CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on April 24, 2025, a true and correct copy of the Petitioners' Reply to the Patent Owner Response was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

maxell-samsung-service@mayerbrown.com

A courtesy copy was sent electronically to counsel for Patent Owner in the District Court Litigation:

Saqib J. Siddiqui (ssiddiqui@mayerbrown.com)

Robert G. Pluta (rpluta@mayerbrown.com)

Tiffany A. Miller (tmiller@mayerbrown.com)

Date: April 24, 2025

/s/ Gianni Minutoli

Gianni Minutoli

Reg. No. 41,198

DLA Piper LLP

One Fountain Square

11911 Freedom Drive, Suite 300

Reston, VA 20190-5602

Phone: + 1 703 773 4000

Fax: + 1 703 773 5000

Gianni.Minutoli@us.dlapiper.com

Attorney for Petitioners