

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY CORPORATION,

Petitioner

v.

OPTIMUM IMAGING TECHNOLOGIES LLC,

Patent Owner

Case IPR2024-00925

Patent No. 8,451,339

PATENT OWNER PRELIMINARY RESPONSE

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

<u>PATENT OWNER'S LIST OF EXHIBITS</u>	
EX. 2001	RESERVED
EX. 2002	Global Dossier Patent Family for U.S. Pub. No. 20050280877 (Watanabe), accessed at https://globaldossier.uspto.gov/result/publication/US/20050280877/118382 on August 9, 2024
EX. 2003	Extract from the Register of European Patents for EP1608140 (Watanabe foreign counterpart), accessed at https://register.epo.org/application?number=EP05253548&Ing=en&tab=doclist on August 13, 2024
EX. 2004	RESERVED
EX. 2005	Written submission in preparation to/during oral proceedings, submitted during prosecution of EP1608140 on April 5, 2011
EX. 2006	RESERVED
EX. 2007	RESERVED
EX. 2008	RESERVED
EX. 2009	RESERVED
EX. 2010	RESERVED
EX. 2011	U.S. Patent No. 7,612,805 (“the ’805 Patent”)
EX. 2012	RESERVED
EX. 2013	RESERVED

EX. 2014	RESERVED
EX. 2015	Email from Petitioner's counsel to Patent Owner's counsel, dated September 4, 2024

TABLE OF CONTENTS

I. INTRODUCTION	1
II. THE '339 PATENT CLAIMS NOVEL AND NON-OBVIOUS SYSTEMS FOR CORRECTING ABERRATIONS IN A DIGITAL CAMERA	2
A. THE BOARD PREVIOUSLY DENIED INSTITUTION OF RELATED IPRS INVOLVING OVERLAPPING PRIOR ART REFERENCES	6
B. PERSON OF ORDINARY SKILL IN THE ART (“POSA”) WAS PREVIOUSLY DEFINED BY THE DISTRICT COURT	8
C. CLAIM CONSTRUCTION WAS PREVIOUSLY PERFORMED BY THE DISTRICT COURT	9
1. “uses system software to identify at least one optical aberration”	10
2. “vignetting”	10
III. THE GROUNDS ARE WEAK	11
A. GROUND 1: WATANABE FAILS	11
1. Watanabe discloses two embodiments that use different process information.....	11
2. Petitioner fails to meet its burden with respect to the digital signal processor applying digital filtration to correct the aberration	19
3. Petitioner fails to meet its burden with respect to “database”	22
4. Petitioner fails to meet its burden with respect to “database management system”	23
5. Petitioner fails to meet its burden with respect to “the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor”	24
B. GROUNDS 2-3: WATANABE COMBINATIONS GENERALLY FAIL	26
C. GROUND 2: WATANABE + KISHIDA FAILS	28

1. Petitioner fails to establish a motivation to combine Watanabe and Kishida	29
2. Petitioner fails to explain how a POSA would implement Kishida’s techniques in Watanabe’s system.....	29
3. Petitioner fails to address a background image as taught by Kishida.....	31
4. Petitioner fails to address a control value as taught by Kishida	32
5. Petitioner fails to address user selection taught by Kishida.....	33
6. Petitioner fails to address how the background image taught by Kishida relates to the process information of Watanabe	33
7. Petitioner fails to address the order of corrections in the modified system	33
D. GROUND 3: WATANABE + KITA FAILS	34
1. Petitioner fails to address the hardware components of Kita’s signal processing unit 65	35
2. Petitioner fails to address Kita’s JPEG compression unit 65-3 in Kita versus Watanabe’s JPEG compression/extraction circuit 62	37
3. Petitioner fails to address Kita’s table 87 versus Watanabe’s table 70	37
E. GROUND 4: TAKANE + WATANABE FAILS	38
1. Petitioner fails to meet its burden with respect to the proposed combination	40
2. Petitioner fails to meet its burden with respect to a “database” and a “database management system”	41
3. Petitioner fails to meet its burden with respect to “the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor”	45

F.	GROUNDS 5-6: TAKANE + WATANABE COMBINATIONS	
	GENERALLY FAIL	45
G.	GROUND 5: TAKANE + WATANABE + KISHIDA FAILS	46
H.	GROUND 6: TAKANE + WATANABE + KITA FAILS	47
IV.	PETITIONER’S BELATED STIPULATION THWARTS THE POLICY	
	OBJECTIVES OF THE VIDAL MEMORANDUM.....	48
V.	CONCLUSION.....	51

I. INTRODUCTION

Patent Owner respectfully submits this Patent Owner Preliminary Response (“POPR”) to request the Board deny institution. Petitioner challenges claims 1-5 and 14-18 of Patent No. 8,451,339 (“the ‘339 Patent”). Petition at 1. Petitioner’s arguments fail for at least three reasons.

First, the Board previously found the merits of Watanabe, Watanabe + Kishida, and Watanabe + Kita do not justify institution. The same is true here.

Second, the Watanabe reference has many deficiencies and does not meet the limitations of the challenged claims. Petitioner also relies on the combination of Takane and Watanabe which fails for at least the same reasons.

Third, the proposed combinations are replete with hindsight bias. Petitioner fails to meet its burden to establish obviousness.

Additionally, Patent Owner requests the Board reject Petitioner’s belated stipulation as it relates to the *Fintiv* analysis in order to serve the interests of fairness and efficiency.¹

¹ See *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 (PTAB March 20, 2020)(precedential)(“*Fintiv*”).

II. THE '339 PATENT CLAIMS NOVEL AND NON-OBVIOUS SYSTEMS FOR CORRECTING ABERRATIONS IN A DIGITAL CAMERA

The '339 Patent claims systems that perform in-camera aberration correction using novel and non-obvious combinations of hardware and software. EX. 1001 at Abstract (“A system is disclosed for the automated correction of optical and digital aberrations in a digital imaging system.”)

“Though every major advance in photography has solved an important problem, there are still remaining photographic problems to be solved in order to meet the goals of *optimizing optical imaging quality* while *increasing simplicity and efficiency* and *lowering cost*.” EX. 1001 at 3:13-17 (emphasis added).

“The present system dramatically improves image quality. This digital imaging system eliminates, or minimizes, post-production processes. In addition, the system presents substantial cost savings as well as time savings relative to existing digital imaging systems because of the automation of integrated in-camera optical and digital corrections of aberrations.” EX. 1001 at 7:14-20.

To achieve the advantages described in the specification, the independent claims of the '339 Patent recite, *inter alia*, “a digital camera mechanism”, “system software”, “a microprocessor”, “a digital signal processor”, and “a database management system.”

As claimed, the microprocessor uses system software to identify at least one optical aberration, which is corrected using the digital signal processor. Thus, the system can identify the specific aberrations and the specific solution for each aberration.

As explained in the '339 Patent, “[t]his in-camera corrective feature provides a powerful tool to rapidly manipulate an image without using post-production editing software tools.” EX. 1001 at 16:5-8.

The '339 Patent includes 18 claims. Exemplary independent claims 1 and 14 are set forth below:

Claim 1	
1[pre]	A digital imaging system for correcting optical image aberrations comprising:
1[a]	a digital camera mechanism, an optical lens mechanism, a digital sensor, a microprocessor, a digital signal processor, system software, a database management system and a memory storage sub-system;
1[b]	wherein the optical lens mechanism is a fixed focal length lens;
1[c]	wherein a microprocessor uses system software to identify at least one optical aberration by accessing the database;

1[d]	wherein the microprocessor uses the database to identify at least one algorithm to use to correct the at least one optical aberration;
1[e]	wherein when the image file is captured by the digital sensor the digital file is forwarded to the digital signal processor;
1[f]	wherein the image file with the at least one optical aberration is corrected by applying digital filtration by using at least one algorithm in the digital signal processor; and
1[g]	wherein the modified digital file consisting of the digital data optimized from the at least one optical aberration that are corrected from the original optical image is stored in memory.
Claim 14	
14[pre]	A digital imaging system for correcting image aberrations comprising:
14[a]	a digital camera mechanism, an optical lens mechanism, a digital sensor, a microprocessor, a digital signal processor, system software, a database management system and a memory storage sub-system;
14[b]	wherein the optical lens mechanism is a zoom lens;
14[c]	wherein the zoom lens changes focal length positions;
14[d]	wherein when the image file is captured by the digital sensor the file is forwarded to the digital signal processor and to memory;

14[e]	wherein the microprocessor uses system software to access the database to identify at least one optical aberration in the image file at any focal length of a zoom lens configuration;
14[f]	wherein the microprocessor accesses the database to obtain at least one filtration correction algorithm to the optical aberrations and forwards the at least one filtration algorithms to the digital signal processor;
14[g]	wherein the image file is forwarded to the digital signal processor which applies at least one filtration algorithm to optimize the image and corrects the at least one optical aberration at the specific focal length in the zoom lens configuration; and
14[h]	wherein the modified image file consisting of the digital data optimized from the at least one optical aberration of a specific focal length of the zoom lens that are corrected from the original optical image is stored in memory.

**A. THE BOARD PREVIOUSLY DENIED INSTITUTION OF
RELATED IPRS INVOLVING OVERLAPPING PRIOR ART
REFERENCES**

U.S. Patent No. 7,612,805 (“the ’805 Patent,” EX. 2011) and the ’339 Patent issued from related continuation applications and claim priority to the same provisional application, No. 60/807,065 filed July 11, 2006.

A different petitioner, Canon Inc., challenged the ’805 and ’339 Patents in IPR2020-01321 and IPR2020-01322 (the “Canon IPRs”). EX1030; EX. 1032. Canon Inc. also relied on testimony from the same expert as this petitioner, Dr. Laub.

The ’805 Patent was challenged in IPR2020-01321 based on the following obviousness grounds:

- Niikawa
- Niikawa + Kawanishi
- Niikawa + Russ
- **Watanabe**
- **Watanabe** + Russ

The Board denied institution finding that the merits did not outweigh the other *Fintiv* factors favoring denial. EX. 1033 at 11.

The ’339 Patent was challenged in IPR2020-01322 based on the following obviousness grounds:

- Niikawa
- Niikawa + **Kita**
- Niikawa + **Kishida**

- **Watanabe**
- **Watanabe + Kita**

The Board denied institution finding that the merits did not outweigh the other *Fintiv* factors favoring denial. EX. 1031 at 11.

The rationale for relying on Watanabe as a primary reference was substantially the same in IPR2020-01321 and IPR2020-01322 as well as in this IPR.

The rationale for relying on Kita and Kishida as secondary references was substantially the same in IPR2020-01322 as in this IPR.

As done in the prior Canon IPRs, the Board should deny institution in this IPR. At minimum, Ground 1 based on Watanabe, Ground 2 based on Watanabe + Kishida, and Ground 3 based on Watanabe + Kita do not justify institution.²

In this paper, Patent Owner will briefly address all grounds to show that instituting this IPR would not be an efficient use of the Board's time and resources.

² In IPR2020-01322, Canon Inc. alleged obviousness of claims 1-3, 5, 14-15, and 17-18 based on Watanabe and alleged obviousness of claims 4 and 16 based on Watanabe + Kita. EX. 1031 at 3. Canon Inc. similarly relied on Kishida for the additional limitations of claims 3 and 18. *See id.* The merits in that case did not justify institution.

Chevron Oronite Co. LLC v. Infineum USA L.P., IPR2018-00923, Paper 9 (PTAB Nov. 7, 2018)(informative)(insufficient number of proposed grounds/challenges to claims meet reasonable likelihood standard); *Deeper, UAB v. Vexilar, Inc.*, IPR2018-01310, Paper 7 (PTAB Jan. 24, 2019)(informative)(same). The merits of Grounds 1-6 are weak and do not meet the institution standard. Even if the Board disagrees with some of Patent Owner’s arguments, there is an insufficient number of grounds that meet the institution standard. Therefore, institution would not be efficient. *See SAS Inst. Inc.*, 138 S. Ct. 1348, 1354 (2018)(concluding that the Board must address every claim the petitioner has challenged and rejecting the practice of “partial institution”).

B. PERSON OF ORDINARY SKILL IN THE ART (“POSA”) WAS PREVIOUSLY DEFINED BY THE DISTRICT COURT

Petitioner proposes a POSA would have had “a bachelor’s degree in electrical engineering, physics, or a related field, with at least two years of industry experience and/or research, both concerning digital camera system design and image processing.” Petition at 8.

The district court found that a POSA would have had “an electrical engineering degree and three years of relevant experience.” EX. 1027 at 6.

Patent Owner submits that the district court's definition of a POSA should be adopted for purposes of institution. Patent Owner reserves all rights regarding the correct definition of a POSA.

Petitioner's expert, Dr. Laub, does not meet the definition of a POSA, at least because Dr. Laub does not have a degree in electrical engineering. *See* EX. 1004 at 6. As such, Dr. Laub is not qualified to offer expert testimony from the perspective of a skilled artisan. *Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1376-1377 (Fed. Cir. 2022) (“To offer expert testimony from the perspective of a skilled artisan in a patent case—like for claim construction, validity, or infringement—a witness must at least have ordinary skill in the art. Without that skill, the witness' opinions are neither relevant nor reliable.”); *see also id.* at 1377 (“[T]o be qualified to offer expert testimony on issues from the vantage point of an ordinarily skilled artisan in a patent case, an expert must at a minimum possess ordinary skill in the art.”).

C. CLAIM CONSTRUCTION WAS PREVIOUSLY PERFORMED BY THE DISTRICT COURT

Petitioner identifies one phrase and one term in the petition for construction. Petition at 8-10.

1. “uses system software to identify at least one optical aberration”

This phrase in the ‘339 Patent was previously construed by the district court.

The district court construed the phrases “identify[ing] specific optical aberrations” and “identify at least one optical aberration” in the ‘805 and ‘339 Patents to each carry its plain meaning. EX. 1027 at 13. The district court determined that the claim language is clear on its face. *See also* EX. 1027 at 11 (“The parties do not seem to dispute that the underlying phrase ‘identifying specific optical aberrations’ would be clear and unambiguous to one of ordinary skill”).

Like the district court, the Board should use the plain meaning of this phrase in the ‘339 Patent for purposes of institution. Patent Owner reserves all rights regarding the correct construction of this phrase.

Based on the below arguments, the Board need not construe this phrase for purposes of institution. Patent Owner expressly reserves all rights as to all grounds if this IPR is instituted.

2. “vignetting”

This term is present in the claims of the ‘339 and ‘805 Patents and was previously construed by the district court.

The district court construed this phrase to mean “an effect in which the edges of an image are darker than the image’s center.” EX. 1027 at 10.

Patent Owner submits that the district court’s construction of this term should be adopted for purposes of institution. Patent Owner reserves all rights regarding the correct construction of this term.

III. **THE GROUNDS ARE WEAK**³

A. GROUND 1: WATANABE FAILS

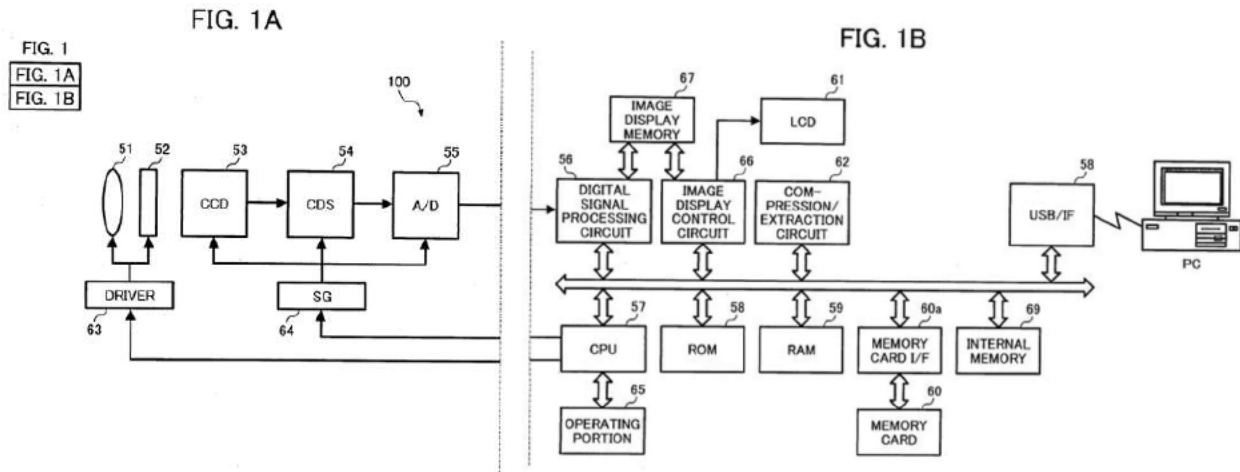
Ground	Reference(s)	Claim(s)
1	Watanabe	1-2, 5, 14-15, and 17

1. Watanabe discloses two embodiments that use different process information

a. The relied-upon first embodiment of Watanabe

Petitioner relies on the first embodiment of Watanabe that is related to a “digital still camera.” EX. 1005 at [0040] and [0042]. With respect to FIGS. 1A-1B, reproduced below, Watanabe discloses a digital still camera 100:

³ Patent Owner briefly addresses all grounds in this paper, but reserves all rights to fully address all arguments and all grounds if this IPR is instituted.



See also EX. 1005, [0035].

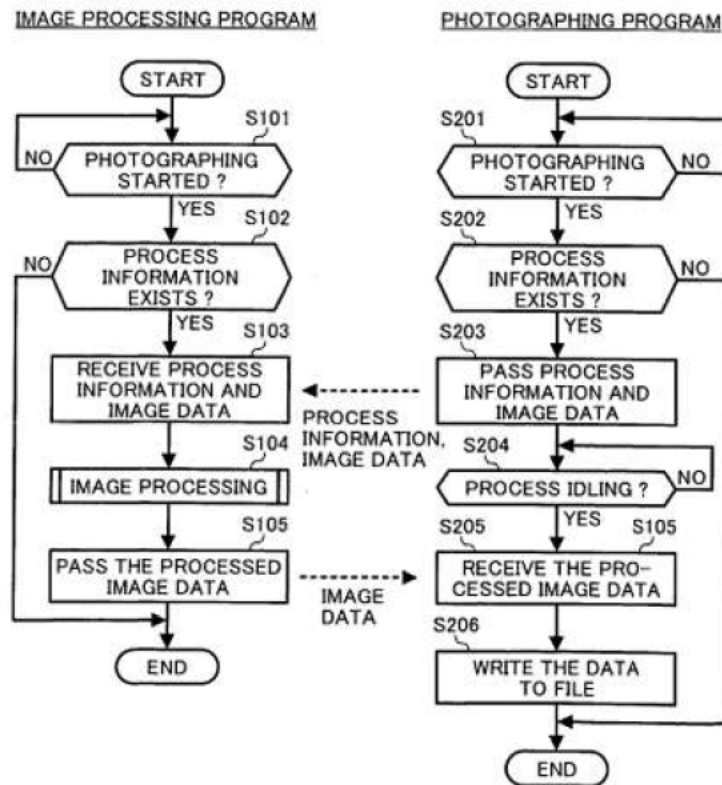
Operating portion 65 includes buttons for selecting a function by the operator, *e.g.*, a release button used at the time of photographing. EX. 1005 at [0041].

ROM 58 stores a control program that includes an “imaging processing program” and a “photographing program.” EX. 1005 at [0042].⁴ The CPU 57 executes both programs. EX. 1005 at [0060].

FIG. 4 (below) shows the steps performed by the “imaging processing program” versus the “photographing program.”

⁴ CPU 57 “controls operation of each part of the digital still camera... by way of an photographing program.” EX. 1005 at [00042]. CPU 57 “processes image data by way of an image processing program.” *Id.*

FIG. 4

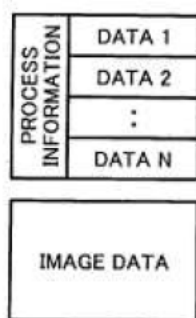


When the release button is pushed (S101 and S201), and when process information exists (S102 and S202), the image data is produced and transferred together with the process information from the photographing program to the image processing program (S103 and S203). EX. 1005 at [0058] and [0061]. The image processing program executes an image process on the image data in accordance with the process information (S104). EX. 1005 at [0062].

The processed image data is then transferred from the image processing program to the photographing program (S105). EX. 1005 at [0062]. The processed image data is then recorded (S206). EX. 1005 at [0063].

With respect to FIG. 2, reproduced below, Watanabe explains that “various data (data 1-data N) are added to image data as process information.” EX. 1005 at [0046]. For example, information of a lens type, a focusing point, and a zoom position may correspond to data 1, data 2, and data 3, respectively. EX. 1005 at [0047]; FIG. 3.

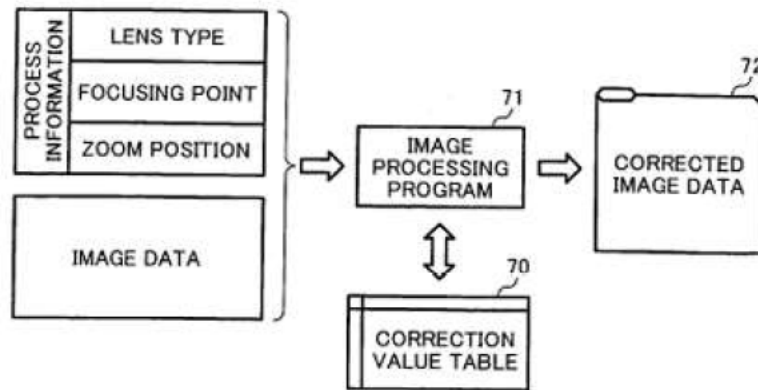
FIG. 2



With respect to FIG. 3, reproduced below, Watanabe discloses tables 70 with correction values, prepared in advance, for each lens type. EX. 1005 at [0047]. The CPU 57 determines a table according to lens type (data 1) and then determines the correction values according to the focusing point (data 2) and zoom position (data

3). EX. 1005 at [0047]. Thus, the image process performed by the image processing program, discussed above with respect to FIG. 4, step 104, is selected based on data 1-data 3. EX. 1005 at [0047].

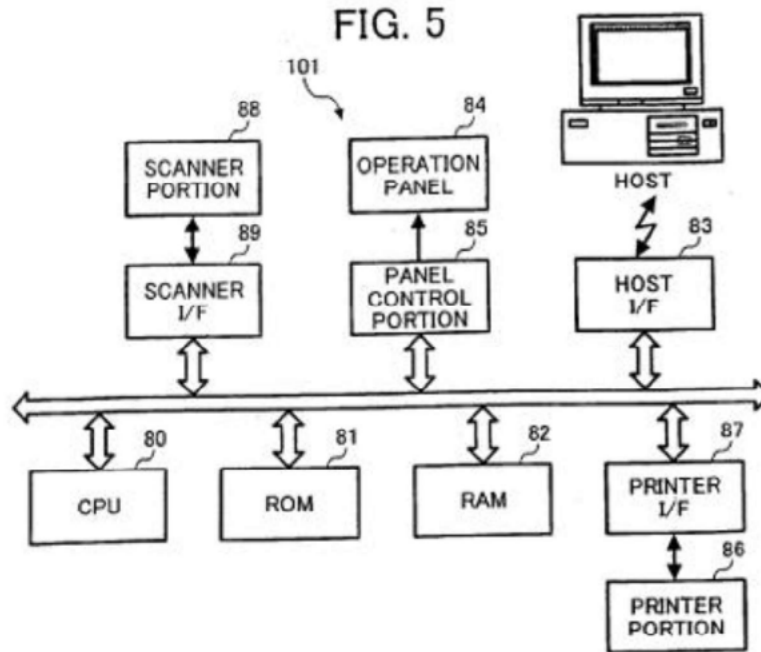
FIG. 3



b. The second embodiment of Watanabe

In context of Watanabe, the patentee expressly distinguished the process information of the first and second embodiments; the patentee expressly distinguished identifying a correction versus identifying an aberration. Watanabe teaches identification of corrections should be used with a look-up table (in the relied-upon first embodiment), while identification of aberrations should not use a look-up table (in the second embodiment).

The second embodiment of Watanabe relates to a multifunction printer 101 as the image recording apparatus. EX. 1005 at [0067]; FIG. 5.⁵

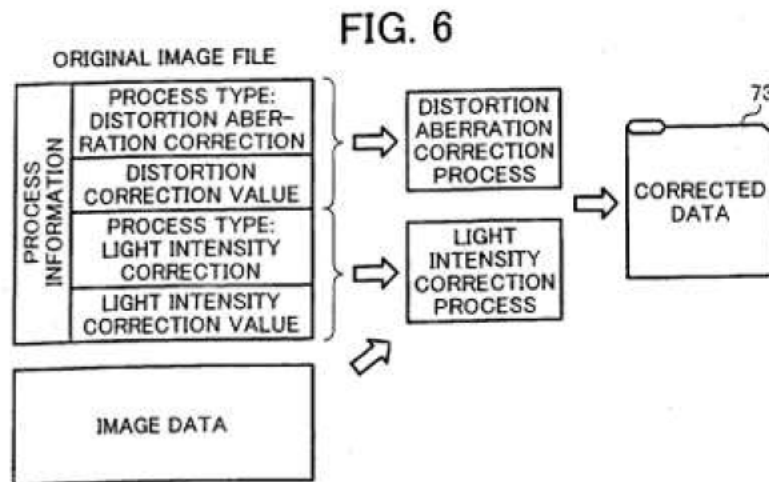


Like in the first embodiment, Watanabe discloses that in the second embodiment, “the CPU 80 executes a distortion aberration correction process and a peripheral light intensity correction process according to the image correction processing program 71.” EX. 1005 at [0070]. In both embodiments, the CPU executes the aberration correction process.

⁵ As discussed herein, the second embodiment of Watanabe does not disclose at least the use of a digital signal processor, a database, or a database management system as claimed in the '339 Patent.

Like in the first embodiment, Watanabe discloses that in the second embodiment, process information is added to image data. EX. 1005 at [0070].

However, the process information in the second embodiment is different from the process information in the first embodiment. In the second embodiment, “the process information is relative to a process type of distortion aberration correction, a correction value concerning distortion aberration, a process type of peripheral light intensity correction, and a correction value concerning peripheral light intensity.” EX. 1005 at [0070]; FIG. 6.



The EPO prosecution history makes clear that in the second embodiment, the process information includes values that “represent an aberration directly (i.e.,

the ‘information of distortion aberration’).” EX. 2005 at 2.⁶ The patentee distinguished this type of process information from data referring to “capture conditions” such as focusing point (subject distance) and zoom position (focal length). EX. 2005 at 2. The patentee therefore distinguished the process information of the second embodiment from the process information of the first embodiment. The patentee explicitly refers to differences in these two approaches which can be seen by comparing FIGS. 3 and 6 and FIGS. 11 and 13 of Watanabe. EX. 2005 at 3.

The patentee explicitly stated that the process information of the second embodiment avoids the use of a look-up table. EX. 2005 at 3. The patentee stated that with the process information of the second embodiment (*i.e.*, the “information of distortion aberration”), that “it is no longer necessary to refer to a look-up table in order to carry out the image processing using the process information.” EX. 2005 at 3. In contrast, the process information of the first embodiment (*e.g.*, focusing point, zoom position) does use a look-up table.

⁶ As shown by Global Dossier, Watanabe has a related foreign counterpart publication, EP1608140. EX. 2002; EX. 2003.

2. *Petitioner fails to meet its burden with respect to the digital signal processor applying digital filtration to correct the aberration*

Petitioner fails to establish that Watanabe discloses or renders obvious the limitations of claims 1, 5, and 14 regarding the digital signal processor applying digital filtration to correct the aberration.

Limitation 1[f] recites “wherein the image file with the at least one optical aberration is corrected by applying digital filtration by using at least one algorithm in the digital signal processor”.

Limitation 5[d] recites “wherein the filtration of each lens optical aberration is applied by the digital signal processor”.

Limitation 14[g] recites “...the digital signal processor [] applies at least one filtration algorithm to optimize the image and corrects the at least one optical aberration...”.

Petitioner appears to agree that the '339 Patent describes correcting aberrations using “in-camera digital filtration.” Petition at 4 (citing EX. 1001 at 7:22-29, 8:3-8). The claim language makes clear that the aberration is corrected by applying digital filtration using the digital signal processor.

Petitioner argues that Watanabe’s circuit 56 corrects optical image aberrations by applying corrections from the database. Petition at 22. Petitioner is

incorrect at least because Watanabe does not disclose circuit 56 executing aberration correction.

In contrast, Watanabe expressly discloses that “CPU 57 executes... a correction process on image data...” EX. 1005 at [0042]. Watanabe also discloses that CPU 57 “processes image data by way of an image processing program.” EX. 1005 at [0042]. Watanabe further discloses that “CPU 57 executes the image processing program” including step 104 for “image processing” shown in FIG. 4. EX. 1005 at [0060]; *see also* FIG. 3 (image processing program 71 accessing correction value table 70). **Therefore, a POSA reading Watanabe would understand it is the CPU 57 that executes aberration correction, not circuit 56.** Watanabe relies heavily on CPU 57 which has more functionality and in turn, requires more processing power, than circuit 56. Watanabe’s heavy dependence on the CPU 57 is contrary to the claimed inventions of the ’339 Patent that efficiently distribute the workload by using the digital signal processor for specific functions.

Watanabe does not disclose that circuit 56 corrects an aberration by applying digital filtration, or that circuit 56 corrects an aberration using the correction values in tables 70. *Contra* Petition at 22. Petitioner misinterprets Watanabe’s one-sentence disclosure that “the digital signal processing circuit 56 sorts out the image data inputted from the A/D converter 55 into color-difference data and brightness data, and executes various process, correction and a data process for image

compressing/extracting.” EX. 1005 at [0038]; Petition at 22. However, this sentence does not disclose that circuit 56 performs aberration correction to image data based on the process information. Nor does this sentence disclose that circuit 56 obtains correction values from tables 70. As discussed below, regardless of whatever “correction” may be performed by Watanabe’s circuit 56, there is no disclosure that circuit 56 performs the functions of the claimed “digital signal processor” in the ’339 Patent.

A POSA would understand that the output from the A/D converter will be subject to certain digital “corrections” including, for example, gamma correction.⁷ A POSA would understand that brightness is not perceived by humans in a linear manner and so gamma correction can be used to correct a pixel’s numerical value and luminance value according to a mathematical curve. Without gamma correction, the image can appear too dark or washed out. These digital

⁷ This understanding is consistent with, *e.g.*, Takane’s disclosure of signal processing circuit 50 which processes the data, *e.g.*, white balance adjustment, gamma correction, sharpness correction, and converts the RGB data into a YC signal, *prior to* further processing by distortion correction circuits 56/58. EX. 1009 at [0044]. Signal processing circuit 50 of Takane does not perform optical image aberration correction as claimed in the ’339 Patent.

“corrections” are distinct from the optical image aberration correction as claimed in the ’339 Patent.

3. Petitioner fails to meet its burden with respect to “database”

Petitioner fails to establish that Watanabe discloses tables 70 correspond to a “database” as required by claims 1, 5, and 14.

Watanabe describes that tables 70 are prepared in advance. EX. 1005 at [0047]. Watanabe does not describe whether tables 70 are stored or hardcoded, or otherwise manipulatable, updatable, etc. Watanabe’s disclosure of tables 70 does not correspond to the claimed “database” of the ’339 Patent.

In contrast to Watanabe, the ’339 Patent describes:

- “In the process, the camera identifies a specific lens and refers to a database that matches the lens type with the specific aberrations” EX. 1001 at 10:49-51.
- “The dynamics of correcting multiple simultaneous aberrations may be complex, but since the number and type of aberrations are constrained to a specific lens type, a centralized database may be accessed with specific corrections for each respective aberration.” EX. 1001 at 12:33-38.
- “[S]oftware files are periodically downloaded to the camera in order to update the camera settings and the database system” EX. 1001 at 28:30-32.
- For example, “as the camera manufacturer provides new lenses for the camera, it becomes necessary to load new updated settings to accommodate corrections for the new lenses” EX. 1001 at 28:32-35.
- As another example, “as the camera requires new software updates with improved algorithms to further optimize the corrective functions of both the

optical and digital mechanisms, the camera will automatically accept these” EX. 1001 at 28:35-38.

The ’339 Patent explains that the updatable database is a “particularly important” feature to both the manufacturer and the user. EX. 1001 at 28:39-42 (“This feature is particularly important to both manufacturer and user because the ability to update software capability periodically will protect a user from needing to upgrade major hardware such as with a lens replacement.”) There is no disclosure in Watanabe that the tables 70 are updatable.

4. Petitioner fails to meet its burden with respect to “database management system”

Petitioner fails to establish that Watanabe’s control program is a “database management system” as required by claims 1 and 14.

Though absent from the petition, Petitioner’s expert opined that a database management system is “software used to create, store, retrieve, change, manipulate, sort, format and print... information in a database.” EX. 1003 at ¶162.⁸ However, Petitioner and its expert fail to establish that Watanabe’s control program

⁸ Patent Owner reserves all rights regarding the correct construction of the phrase “database management system.”

creates, stores, changes, manipulates, sorts, formats, or prints information in tables 70.

Petitioner points to Watanabe's "control program," but fails to distinguish the "imaging processing program" from the "photographing program" of Watanabe's control program. As discussed above, it is S104 of the image processing program that performs "image processing." EX. 1005 at FIG. 4; *see also* FIG. 3 (image processing program 71 accessing correction value table 70). There is no disclosure that the image processing program corresponds to the claimed database management system.⁹

With respect to the image processing program, Watanabe's use of a lookup table is a simple operation that does not require a database management system as claimed.

5. Petitioner fails to meet its burden with respect to "the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor"

Limitation 14[f] recites "the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor".

⁹ There is also no disclosure that the photographing program corresponds to the claimed database management system.

Petitioner argues that Watanabe's CPU 57 accesses tables 70 and that circuit 56 performs aberration correction. Petition at 30-32. However, Petitioner fails to establish that Watanabe's CPU 57 performs the specific functions recited in limitation 14[f] and Petitioner fails to establish that Watanabe's circuit 56 performs aberration correction for at least the reasons discussed above in section III.A.2.

As discussed above, Watanabe discloses tables 70 for each lens and the CPU 57 determines a table according to lens type (data 1) and determines the correction values according to the focusing point (data 2) and zoom position (data 3).

There is no disclosure in Watanabe that circuit 56 obtains the process information (data 1-3). There is no disclosure in Watanabe that circuit 56 obtains the correction values from a table.

Moreover, Petitioner fails to distinguish the "imaging processing program" from the "photographing program" of Watanabe's control program. As discussed above, it is S104 of the image processing program that performs "image processing." EX. 1005 at FIG. 4. There is no disclosure in Watanabe that circuit 56 executes the image processing program instructions. To the contrary, Watanabe discloses CPU 57 executes the image processing program.

B. GROUNDS 2-3: WATANABE COMBINATIONS GENERALLY FAIL

Petitioner fails to meet its burden with respect to the independent claims in Ground 1. Petitioner does not suggest that any of the secondary references cure the deficiencies of Watanabe in Ground 1 and therefore, Grounds 2-3 fail as well.

Petitioner's conclusory analysis in Grounds 2-3 fails to establish that Watanabe is properly combinable with any of the secondary references. In each of Grounds 2-3, Petitioner's analysis boils down to arguing that a POSA would have implemented the additional teachings into Watanabe's "control program." *See* EX. 1003 at ¶¶265, 292. Petitioner is using hindsight bias in its proposed Watanabe combinations. *See, e.g., TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) ("Although the *KSR* test is flexible, the Board must still be careful not to allow hindsight reconstruction of references ... without any explanation as to how or why the references would be combined to produce the claimed invention."); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1552 (Fed. Cir. 1983) ("The result is that the claims were used as a frame, and individual, naked parts of separate prior art references were employed as a mosaic to recreate a facsimile of the claimed invention. At no point did the [Petitioner], explain why that mosaic would have been obvious to one skilled in the art.").

In each of the references, the aberrations being corrected, and the methods used for their correction, are so different that they are not properly combinable, much less applicable to the '339 Patent. A common goal of “improving capabilities” and “optimizing images” is not sufficient motivation for a POSA to combine the specific technical teachings of these references in the proposed combinations.

In Ground 1, Petitioner alleges that Watanabe’s “control program” corresponds to the claimed database management system (DBMS) and that Watanabe’s circuit 56 corresponds to the claimed digital signal processor (DSP). In Grounds 2-3, Petitioner proposed adding functionality to the “control program” which is the alleged DBMS, not the alleged DSP. Petitioner fails to establish that circuit 56, specifically, would perform same functions as the claimed digital signal processor recited in the dependent claims. It is the image processing program executed by CPU 57 that performs aberration correction in Watanabe, not circuit 56.

Additionally, Petitioner fails to address the fact that Watanabe’s “control program” consists of two separate programs with two separate sets of instructions. In the proposed combinations, Petitioner does not discuss adding functionality to a particular set of instructions.

Overall, Petitioner fails to explain *how* the techniques taught by the secondary references actually work or *why* a POSA would have been motivated to implement the specific teachings in Watanabe’s system. “[A] clear, evidence supported account of the contemplated workings of the combination is a prerequisite” to concluding “that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.” *Personal Web Techs., LLC v. Apple*, 848 F.3d 987, 994 (Fed. Cir. 2017).

Finally, as noted above, Dr. Laub does not qualify as a POSA. Petitioner fails to establish that it would have been within the ordinary skill of a POSA to combine the references or that a POSA would have a reasonable expectation of success in doing so.

C. GROUND 2: WATANABE + KISHIDA FAILS

Ground	Reference(s)	Claim(s)
2	Watanabe + Kishida	3 and 18

Petitioner states that Watanabe does not disclose optimizing exposures, alone or in cooperation with shading corrections. Petition at 35. Petitioner thus relies on Kishida.

1. Petitioner fails to establish a motivation to combine Watanabe and Kishida

Kishida relates to correction of an observation image by a microscope 1. EX. 1007 at Abstract. There is nothing to suggest that a POSA interested in optimizing a digital camera would look to a reference focused on an exemplary microscope. Kishida's teachings relate to a static subject and a static background.

Additionally, Kishida does not disclose a digital signal processor and Petitioner does not address the different hardware components of Kishida or how they would be incorporated into Watanabe's system.

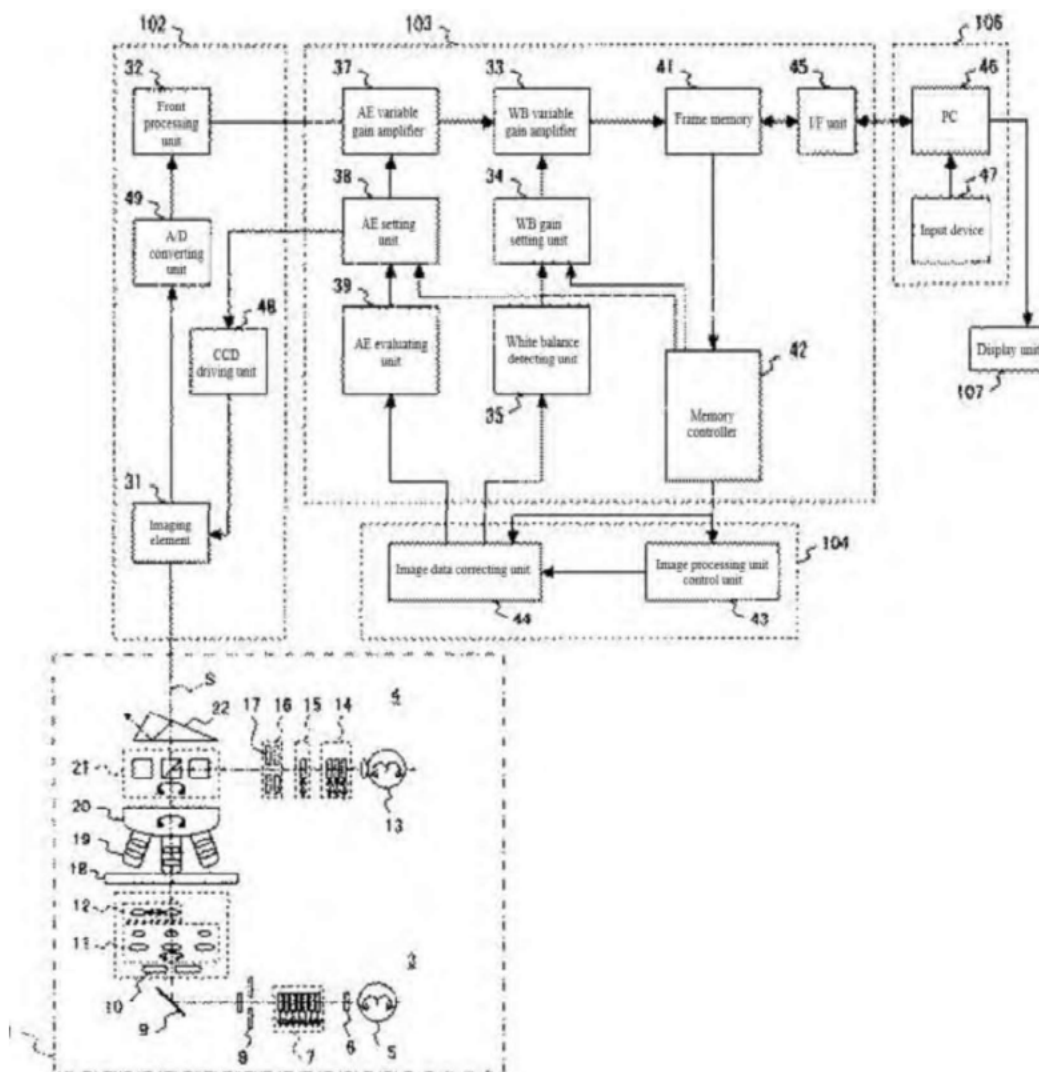
2. Petitioner fails to explain how a POSA would implement Kishida's techniques in Watanabe's system

Petitioner argues it would be obvious to implement Kishida's software for exposure correction control based on shading prediction into Watanabe's control program. Petition at 35; EX. 1003 at ¶265.

Petitioner's conclusory analysis fails to explain how Kishida's techniques are combinable with Watanabe's system. Petitioner simply argued it would be obvious to implement shading correction in Watanabe's control program, without considering how that shading correction is actually performed by Kishida. For example, Petitioner does not explain the required "background image" for predicting the prediction result as taught by Kishida. There is nothing to suggest

that a POSA would have implemented Kishida's techniques, software or otherwise, into Watanabe's system.

FIG. 2 of Kishida is shown below:



Petitioner relies on exposure correction control based on shading prediction as taught by Kishida. Petition at 35. **However, the exposure correction control based on shading prediction is performed by the external PC 46 of Kishida.**

EX. 1007 at [0044] (“...in the following explanation, the processing performed by

the PC 46 is realized by the CPU of the PC 46...). Thus, the process of Kishida does not relate to in-camera correction.

As further discussed below, based on Kishida's disclosure, a POSA would not be motivated to implement Kishida's techniques in Watanabe's system and Petitioner does not show otherwise. For example, in Kishida, "[t]he user of this system first removes the observation specimen on the stage 18 from the field of view of the observation image. Here, an instruction is given to operate an input device 47, such as a mouse, to click one of the positions on the background photographing button 301 displayed on the imaging screen When the PC 46 receives this instruction, it starts executing the steps shown in Fig. 4." EX. 1007 at [0045]; *see also* FIG. 4, [0046]-[0058].

3. Petitioner fails to address a background image as taught by Kishida

Kishida teaches exposure or white balance correction based on a shading prediction result. EX. 1007 at [0010]. Kishida explains that the prediction result is predicted from **the background image, which is an image captured separately from the object image and does not represent the object**. EX. 1007 at [0015]. Kishida explains that the background image is an image that is stored in a memory unit of the PC 46 itself. EX. 1007 at [0043].

Petitioner fails to address why a POSA reading Watanabe would be motivated to use a background image as described in Kishida in order to predict the prediction result. In the context of microscopes, there is a consistent, static background and it is possible to capture a background image in which the observation specimen is not shown. *See, e.g.*, EX. 1007 at [0048]. “Moreover, it is desirable that the photographing environment (amount of irradiation light, focal point, etc.) during the capturing of this background image be the same as that during the capturing of the observation specimen image to be performed later.” EX. 1007 at [0048].

In the context of digital cameras, there is not a consistent background and it is unlikely a background without the subject could be obtained.

4. Petitioner fails to address a control value as taught by Kishida

Further to above, Kishida teaches calculating a control value for exposure correction control based on the difference of the luminance average values, where the control value is used to determine the amount of exposure correction in the specified area 305. EX. 1007 at [0052], [0058]. Kishida’s control value is specific to the background in the background image. While this may be useful for a microscope with a static background, it would not be useful for a digital camera.

5. Petitioner fails to address user selection taught by Kishida

Kishida explains “[t]he user of this system specifies this specified area 305 as an area for performing automatic exposure correction or white balance correction.” EX. 1007 at [0035]. Thus, Kishida relies on user-intervention and Petitioner does not explain how user-intervention would be incorporated into Watanabe’s system.

6. Petitioner fails to address how the background image taught by Kishida relates to the process information of Watanabe

Petitioner does not address how the “imaging processing program” or the “photographing program” of Watanabe would implement Kishida’s shading correction consistent with the teachings of Watanabe as they relate to process information and tables 70.

7. Petitioner fails to address the order of corrections in the modified system

Kishida warns that if the shading correction is applied to an image after an exposure or white balance correction has already been applied to the image, there is a risk of over-correction. EX. 1007 at [0007].

Because Watanabe does not perform corrections based on aberration type, Watanabe does not contemplate performing different corrections in a different order. Petitioner does not address how Watanabe’s control program would

purposefully order the corrections allegedly performed by Watanabe's circuit 56, consistent with the teachings of Kishida.

D. GROUND 3: WATANABE + KITA FAILS

Ground	Reference(s)	Claim(s)
3	Watanabe + Kita	4 and 16

Claims 4 and 16 each require “the digital signal processor applies at least one fast Fourier transform (FFT) algorithm.”

Petitioner argues that “Kita’s techniques used software that could be implemented in Watanabe’s system.” Petition at 39. Petitioner’s combination is not sufficiently clear. Petitioner does not explain *how* Kita’s techniques would be implemented in Watanabe’s system. For example, Petitioner does not identify a digital signal processor in Kita.

To the extent Petitioner argues that Kita’s CAMDSP corresponds to a digital signal processor because of Kita’s choice in terminology (DSP), the CAMDSP is a different component than the MTF correcting unit 5-1.¹⁰ Thus, Kita teaches that the component specifically identified as a digital signal processor in Kita is not itself

¹⁰ MTF is an acronym for “modulation transfer function.” *See, e.g.*, EX. 1008 at [0002].

involved with the application of a fast Fourier transform and thus, teaches away from the claims of the '339 Patent.

1. Petitioner fails to address the hardware components of Kita's signal processing unit 65

Petitioner's conclusory argument that Kita's software could be implemented in Watanabe's control program shows that Ground 3 must fail. Petitioner does not specifically address Watanabe's circuit 56, the alleged digital signal processor, in its analysis. Petitioner does not specifically identify Kita's software that is alleged to be incorporated into Watanabe. Petitioner does not address Kita's hardware at all.

Kita's teachings rely on distinct hardware elements that are not present in Watanabe's system. Petitioner does not address Kita's hardware components that are necessary to perform MTF correction. Petitioner does not explain how Kita's hardware components would be incorporated into Watanabe's system.

With respect to FIG. 6, Kita discloses signal processing unit 65 including MTF correcting unit 65-1, camera processing unit (CAMDSP) 65-2, and JPEG compression unit 65-3.

Camera signal processing by the CAMDSP 65-2 is applied to the A/D converted image. EX. 1008 at [0054]. Kita teaches the zooming amount,

defocusing amount, and diaphragming amount are determined by an exchange between CAMDSP 65-2 and camera control unit 66. EX. 1008 at [0049].

The image information output from CAMDSP 65-2 is input to the MTF correcting unit 65-1 at the same time as the zooming amount, defocusing amount, and diaphragming amount (*e.g.*, aperture of an iris diaphragm). EX. 1008 at [0057]; EX. 1003 at ¶85.

The zooming amount, defocusing amount, and diaphragming amount are used as keys to select MTF correction filters. EX. 1008 at [0059].

The MTF correction filter is determined from table 87 according to each parameter. EX. 1008 at [0059].

The MTF correction filter is applied by the MTF correction unit 65-1. EX. 1008 at [0046].

Further components of the MTF correcting unit 65-1 are shown in FIG. 8 of Kita, including, for example, FFT calculation unit 83, IFFT calculation unit 85, table 87, and MTF interpolation processing unit 88. Each of these components performs a specific function in Kita's system. EX. 1008 at [0057] – [0063]; FIG. 11. None of these components are present in Watanabe and Petitioner does not explain why a POSA would be motivated to add these components to Watanabe generally, or circuit 56 specifically.

2. *Petitioner fails to address Kita's JPEG compression unit 65-3 in Kita versus Watanabe's JPEG compression/extraction circuit 62*

Additionally, Kita's JPEG compression unit 65-3 is part of signal processing unit 65. When all blocks have been processed, the JPEG compression process is performed. EX. 1008 at [0063]. However, Watanabe already includes JPEG compression/extraction circuit 62, which is separate and distinct from circuit 56. To the extent Petitioner is arguing that Kita's signal processing unit 65 could be a substitute for Watanabe's circuit 56, this argument fails at least because it would not make sense to perform a compression process using Kita's unit 65-3 and then send the compressed data to Watanabe's JPEG compression/extraction circuit 62. This would be highly inefficient.

3. *Petitioner fails to address Kita's table 87 versus Watanabe's table 70*

Moreover, Petitioner does not address explain the use of Kita's table 87 versus Watanabe's table 70 for correction. Incorporating Kita's signal processing unit 65 would change the principle of operation of Watanabe's system. Kita teaches that table 87 is part of MTF correcting unit 65-1 in signal processing unit 65. Watanabe does not disclose that tables 70 are part of circuit 56.

If Kita's signal processing unit 65 were substituted for Watanabe's circuit 56, there would be no need to obtain correction values from Watanabe's tables 70.

Kita's MTF correction filter is the algorithm used to correct the MTF.¹¹ Kita does not disclose identifying specific aberrations or identifying specific corrections to aberrations. Kita's MTF filter is not selected for specific aberrations.

E. GROUND 4: TAKANE + WATANABE FAILS

Ground	Reference(s)	Claim(s)
4	Takane + Watanabe	1-2, 5, 14-15, and 17

Patent Owner expressly incorporates the arguments as to the disclosure of Watanabe in Ground 1 herein.

Takane discloses the signal processing circuit 50 inputs digital image data from the A/D converter, processes the data, e.g., white balance adjustment, gamma correction, sharpness correction, and converts the RGB data into a YC signal. EX. 1009 at [0044]. The output of circuit 50 is connected to the dynamic image signal processing circuit 52 and the still image signal processing circuit 54. EX. 1009 at [0044]-[0045]. The signal processing circuit 52/54 converts the gradation such that the image size becomes a predetermined image size set in advance. EX. 1009 at

¹¹ Kita discloses “a method to restore the lost high-frequency-domain frequency characteristics... using the inverse function of the lens MTF characteristics.” EX. 1008 at [0078].

[0047]. Then, the data is input to the first distortion correction circuit 56 or the second distortion correction circuit 58. EX. 1009 at [0053].

Takane expressly distinguishes the first distortion correction circuit 56 and the second distortion correction circuit 58.

The first distortion correction circuit 56 can carry out processing at a low correction accuracy. EX. 1009 at Abstract, [0061], [0115]. The first distortion correction 56 carries out processing when the release button 18A is depressed halfway for a “preview display.” EX. 1009 at [0091]; *see also* EX. 1009 at [0117].

“The correction accuracy is intentionally lowered, and the processing time can be shortened and the circuit structure of the first distortion correction circuit 56 can be made simple.” EX. 1009 at [0061]. For example, in the described embodiment, “only the distortion in the horizontal direction is corrected at the first distortion correction circuit 56.” EX. 1009 at [0062]; *see also* EX. 1009 at [0080] (“Correction of the optical distortion is carried out at the relatively low correction accuracy of only horizontal direction correction, by the first distortion correction circuit 56.”); *see also* EX. 1009 at [0102](“...correction processing is carried out by the first distortion correction circuit 56 such that the optical distortion in the horizontal direction is corrected.”).

The second distortion correction circuit 58 can carry out processing at a high correction accuracy. EX. 1009 at Abstract. The second distortion correction 58

carries out processing when the release button 18A is fully depressed at the time of “actual photographing.” EX. 1009 at [0092], [0117].

The parameters stored in the second distortion correction circuit 58 give priority to the quality of each image and provide a high correction accuracy. EX. 1009 at [0063]. Unlike the first distortion circuit 56, the second distortion circuit 58 will correct optical distortion in both the horizontal and vertical directions. EX. 1009 at [0094].

1. Petitioner fails to meet its burden with respect to the proposed combination

The proposed combination would change Takane’s principle of operation. As discussed further below, Takane teaches storing correction parameters in circuits 56 and 58 and does not use a separate table as disclosed in Watanabe.

As noted by Petitioner, Takane explains that correction parameters are set in advance and ***stored in the correction circuits 56/58 themselves***. Petition at 49; *see also* EX. 1003 at ¶364 (“Takane stores correction parameters ‘in advance’ in first distortion correction circuit 56 based on the lens and focal length”).

A POSA would not be motivated to combine Takane with Watanabe, which uses correction values in tables 70. This would be inefficient and change Takane’s principle of operation.

Takane expressly teaches away from prior art that uses a table of correction amounts that require a large storage capacity, which reduces the work region and increases costs. EX. 1009 at [0007]. Petitioner argues that “Takane’s criticism of tables storing corrections for each pixel or “coordinate” (Takane, [0007]) does not apply since this combination uses tables to store correction parameters rather than correction values for each pixel.” Petition at 43. Petitioner’s argument fails at least because Takane also distinguishes prior art that stores the correction parameters (the coefficients of the polynomial) in a separate table. EX. 1009 at [0008]. Takane instead teaches storing the correction parameters in the correction circuits 56/58.

Overall, Petitioner fails to address that modifying Takane’s system to function as proposed would require more processing power, more memory space, increase costs, and be highly inefficient. A POSA would not be motivated to make the proposed modifications. Petitioner is applying hindsight bias using the claims of the ‘339 Patent as a roadmap.

2. Petitioner fails to meet its burden with respect to a “database” and a “database management system”

Petitioner relies on Watanabe for a “database” and a “database management system.” Petition at 43. For at least the same reasons discussed above in sections III.A.3 and III.A.4, Petitioner fails to meet its burden in Ground 4.

Petitioner argues that a POSA would have been motivated to modify the teachings of Takane by storing Watanabe's correction parameters for each image size, lens, focal length, and zoom position in Takane's ROM 22. Petition at 44. Petitioner argues that Takane as modified would use Watanabe's teachings to retrieve parameters from the database and load them into the distortion correction circuits. Petition at 44. Petitioner is using hindsight bias. Petitioner's proposed modification changes Takane's principle of operation.

First, a POSA would not be motivated to store correction parameters in the external ROM 22 as opposed to in the correction circuits 56/58. Takane's ROM 22 is described as an **external** ROM. EX. 1009 at FIG. 1. The external ROM 22 may, for example, store bitmap data to be superposed on the subject and displayed on the LCD 16. EX. 1009 at [0070]-[0071]. The OSD (on screen display) 62 function displays various types of menus, mode mark, date, etc. such that they may be superposed on the subject and displayed on the LCD 16. *Id.*

Instead of using the external ROM 22, Takane explains that correction parameters are set in advance and stored in the correction circuits themselves. EX. 1009 at [0054] ("Parameters expressing a polynomial... are stored in advance in each of the first distortion correction circuit 56 and the second distortion circuit 58...."). Petitioner admits that Takane discloses storing correction parameters in

the first distortion correction circuit 56 and second distortion correction circuit 58.

Petition at 49 (citing Takane at [0054]); *see also* EX. 1003 at ¶364.

Petitioner argues a POSA would be motivated to use external ROM 22 for “simplified and streamlined access.” Petition at 44. However, Takane’s correction parameters are already stored in circuits 56 and 58 and moving the correction parameters to an external ROM would not provide simplified and streamlined access for circuits 56 and 58.

Second, a POSA reading Takane would not be motivated to add additional correction parameters for processing by the first distortion correction circuit 56, the alleged digital signal processor. *E.g.*, Petition at 50. Takane’s first distortion correction circuit 56 purposefully uses fewer parameters and provides lower accuracy. Takane explains that “at the first distortion correction circuit 56, the image size which is the object of correction is fixed, and the number of parameters which must be held is lower than in a case in which a plurality of image sizes are objects of processing.” EX. 1009 at [0059]. Petitioner’s expert similarly testified that the first distortion correction circuit 56 “corrects at lower accuracy, to be used only for low-quality video in cameras with low processing capability.” IPR2024-00923, EX. 1003 at ¶385. Therefore, a POSA would not be motivated to increase corrections at Takane’s first distortion correction circuit 56.

Third, Petitioner does not explain how correction values stored in tables 70 of Watanabe could be used with Takane. Watanabe makes clear that the process information (lens type, focusing point, zoom position) is used to determine a table and then a correction value. Petitioner does not explain the different functionality of the “imaging processing program” and the “photographing program” of Watanabe, where it is the “photographing program” that appends the process information to the image data and it is the “imaging processing program” that performs imaging processing. *See, e.g.*, EX. 1005 at FIG. 4.

Takane does not disclose separate imaging processing versus photographing programs, the transfer of process information, or the reference to tables for correction values. Instead, Takane simply stores correction parameters in Takane’s correction circuits.

Fourth, even if the correction parameters were stored in external ROM 22 instead of circuit 56, Takane does not disclose a database management system. Accessing the correction parameters would be a simple lookup operation. Additionally, there is nothing to suggest that the correction parameters would be, for example, updatable.

In view of the above, the teachings of Takane and Watanabe are not properly combinable, and Petitioner fails to meet its burden.

3. *Petitioner fails to meet its burden with respect to “the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor”*

Limitation 14[f] recites “the microprocessor ... forwards the at least one filtration algorithms to the digital signal processor”.

For at least the reasons discussed above, because the correction parameters are stored in circuits 56/58 of Takane, the main controlling section 24 is not configured to forward the at least one filtration algorithm to the circuits 56/58. A POSA would not be motivated to modify Takane to do so. *Contra* Petition at 56-57.

**F. GROUNDS 5-6: TAKANE + WATANABE COMBINATIONS
GENERALLY FAIL**

Petitioner fails to meet its burden with respect to the independent claims in Ground 4. Petitioner does not suggest that any of the tertiary references cure the deficiencies of Takane + Watanabe in Ground 4 and therefore, Grounds 5-6 fail as well.

For at least the same reasons discussed above with respect to Grounds 2-3, Petitioner fails to establish that the references are properly combinable in Grounds 5-6. Patent Owner expressly incorporates the arguments as to the Watanabe combinations in Grounds 2-3 herein. Petitioner is using hindsight bias. In each of the references, the aberrations being corrected, and the methods used for their correction, are so different that they are not properly combinable, much less

applicable to the '339 Patent. Petitioner does not address the specific technical teachings of these references in its analysis of the proposed combinations. Overall, Petitioner fails to explain *how* the techniques in each reference actually work or *why* a POSA would have been motivated to implement the specific teachings in a specific way in the proposed combinations.

Additionally, as noted above, Dr. Laub does not qualify as a POSA. Petitioner fails to establish that it would have been within the ordinary skill of a POSA to combine the references or that a POSA would have a reasonable expectation of success in doing so.

G. GROUND 5: TAKANE + WATANABE + KISHIDA FAILS

Ground	Reference(s)	Claim(s)
5	Takane + Watanabe + Kishida	3 and 18

Patent Owner expressly incorporates the arguments as to the disclosures of Watanabe and Kishida in Ground 2 herein. For at least the same reasons discussed above with respect to Ground 2, Ground 5 fails as well.

Moreover, Petitioner argues that Kishida's techniques could be included in Watanabe's control program. Petition at 60. However, Petitioner makes no argument as to Takane's system generally or Takane's modified system specifically.

A POSA would not be motivated to add exposure and shading corrections to Takane's circuit 56. *Contra* Petition at 59. As discussed above, Takane's circuit 56 is the alleged "digital signal processor", but Takane's circuit 56 is intentionally designed to use fewer parameters and provide low correction accuracy. *See infra*, section III.E. Therefore, a POSA would not be motivated to add additional corrections to Takane's circuit 56.

H. GROUND 6: TAKANE + WATANABE + KITA FAILS

Ground	Reference(s)	Claim(s)
6	Takane + Watanabe + Kita	4 and 16

Patent Owner expressly incorporates the arguments as to the disclosures of Watanabe and Kita in Ground 3 herein. For at least the same reasons discussed above with respect to Ground 3, Ground 6 fails as well.

Moreover, Petitioner argues that "POAs would have had a reasonable expectation of success because Kita's techniques used software that could be implemented in the Takane+Watanabe system and doing so was within the POSA's ordinary skill." Petition at 63. Petitioner's conclusory argument does not sufficiently explain its proposed combination or why/how these three references would be combined. Petitioner fails to meet its burden. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) ("To satisfy its burden of proving

obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness”).

A POSA would not be motivated to add filtering, image restoration, and correction techniques to Takane’s circuit 56. *Contra* Petition at 62. As discussed above, Takane’s circuit 56 is the alleged “digital signal processor”, but Takane’s circuit 56 is intentionally designed to use fewer parameters and provide low correction accuracy. *See infra*, section III.E. Therefore, a POSA would not be motivated to add additional corrections to Takane’s circuit 56.

IV. PETITIONER’S BELATED STIPULATION THWARTS THE POLICY OBJECTIVES OF THE VIDAL MEMORANDUM

The Board should not allow petitioners to file belated stipulations in order to negate the *Fintiv* analysis. This practice causes prejudice to patent owners.

Petitioner filed four petitions against Patent Owner in IPR2024-00923, IPR2024-00924, IPR2024-00925, and IPR2024-01046. Paper 7 at 2. None of these petitions included a stipulation regarding the parallel district court proceeding.

Petitioner emailed a Sotera-style stipulation on September 4, 2024. EX. 2015.¹² This stipulation was made after the filing of the POPR in IPR2024-00923 on August 29, 2024 and close to the imminent filing of the POPRs in IPR2024-00924 and IPR2024-00925.

Petitioner's belated stipulation goes against the interests of fairness and efficiency. Petitioner has not offered any explanation as to why this stipulation was not submitted with the petitions or, at minimum, prior to the filing of the POPR in IPR2024-00923. Petitioner is causing prejudice to Patent Owner at least because Patent Owner has expended resources based on a position taken in the petition and now Petitioner has changed that position.

Mindful of the precedential *NXP* decision¹³ which requires a stipulation to be filed before an institution decision, the Board should not invite gamesmanship

¹² Based on current law/policy, Patent Owner understands that a Sotera-style stipulation precludes discretionary denial under *Fintiv*. Vidal Memorandum at 7. See Director Vidal, Memorandum, 'Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation' dated June 21, 2022 ("Vidal Memorandum").

¹³ *NXP USA, Inc. v. Impinj, Inc.*, IPR2021-0156, Paper 13 (PTAB September 7, 2022)(precedential)(*"NXP"*).

or otherwise encourage petitioners to delay making stipulations, particularly after the petitioner has had the opportunity to review the preliminary arguments in a POPR.¹⁴ Aside from financial resources, patent owners will be forced to waste significant word count addressing the *Fintiv* analysis in a POPR, while petitioners are allowed to simply make a stipulation after the filing of the POPR.¹⁵ Under the current law/policy, there is no incentive for petitioners to make a stipulation at or around the time of filing the petition.

Allowing petitioners to make a belated stipulation thwarts the policy objectives outlined in the Vidal Memorandum, including to “limit unnecessary and counterproductive litigation costs” and to minimize “inefficiency and gamesmanship in AIA Proceedings”. Vidal Memorandum at 1. Here, Petitioner’s belated stipulation is contrary to these policy objectives and causes prejudice to Patent Owner.

Director Vidal also stated that the use of stipulations “avoids inconsistent outcomes between the PTAB and the district court and allows the PTAB to review

¹⁴ Patent Owner notes that IPR2024-00923 involves the same prior art references at issue here.

¹⁵ The Board declined authorization for supplemental briefing regarding the timing of Petitioner’s stipulation and prejudice to Patent Owner in IPR2024-00923.

grounds that the parallel district court litigation will not resolve”. Vidal Memorandum at 7-8. However, that is not true here. Petitioner’s belated stipulation does not prevent the other defendants in related district court proceedings involving these same patents from pursuing the same invalidity challenges in district court. Therefore, Petitioner’s belated stipulation does not mitigate concerns of duplicative efforts and conflicting decisions.

If the Board were to reject Petitioner’s belated stipulation, the Board would understand that the *Fintiv* factors overwhelmingly favor denial of institution.¹⁶ The parallel litigation involving the same parties and overlapping claims will resolve the issues presented here and institution should be denied to avoid conflicting decisions and a waste of the Board’s resources.

V. **CONCLUSION**

For at least the reasons set forth herein, Patent Owner respectfully requests that institution be denied.

¹⁶ If there is an intervening change in law/policy, Patent Owner expressly requests authorization for supplemental briefing to address the *Fintiv* factors in detail.

Respectfully submitted,

Date: September 20, 2024

By: /s/ Thomas M. Dunham

Thomas M. Dunham

Reg. No. 39,965

Cherian LLP

1901 L Street NW, Suite 700

Washington, D.C. 20036

(202) 838-1567

ATTORNEY FOR PATENT OWNER,
OPTIMUM IMAGING TECHNOLOGIES
LLC

CERTIFICATE OF COMPLIANCE

This Patent Owner Preliminary Response (“POPR”) consists of 9,234 words, which is no more than 14,000 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POPR complies with the type-volume as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

Date: September 20, 2024

By: /s/ Thomas M. Dunham
Thomas M. Dunham
Reg. No. 39,965

Cherian LLP
1901 L Street NW, Suite 700
Washington, D.C. 20036
(202) 838-1567

ATTORNEY FOR PATENT OWNER,
OPTIMUM IMAGING TECHNOLOGIES
LLC

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned hereby certifies the PATENT OWNER PRELIMINARY RESPONSE and all exhibits thereto were served on the undersigned date via email, as authorized by Petitioner, at the following email addresses:

SMcKeown-PTAB@WolfGreenfield.com

AWichman-PTAB@WolfGreenfield.com

RPritzker-PTAB@WolfGreenfield.com

Respectfully submitted,

Date: September 20, 2024

By: /s/ Thomas M. Dunham

Thomas M. Dunham

Reg. No. 39,965

Cherian LLP

1901 L Street NW, Suite 700

Washington, D.C. 20036

(202) 838-1567

ATTORNEY FOR PATENT OWNER,
OPTIMUM IMAGING TECHNOLOGIES
LLC